

MULTI-PORT BALL VALVES

ASME : Class 150 , 300



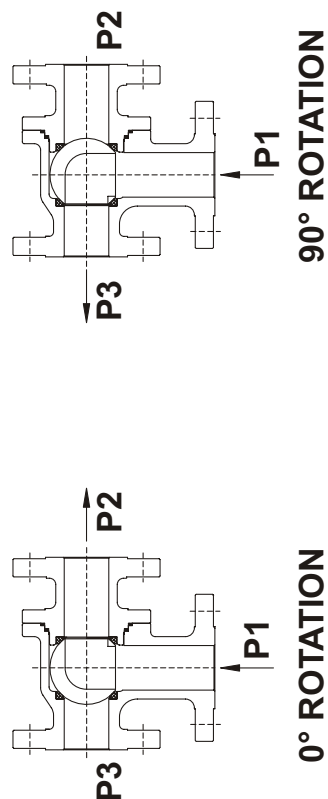
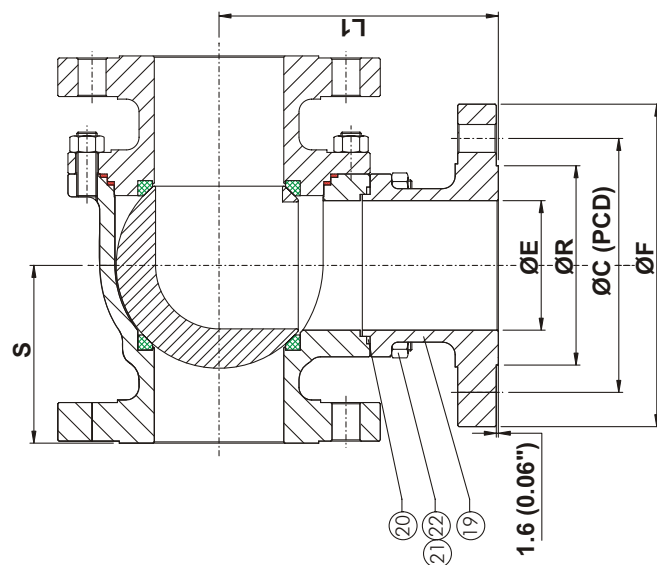
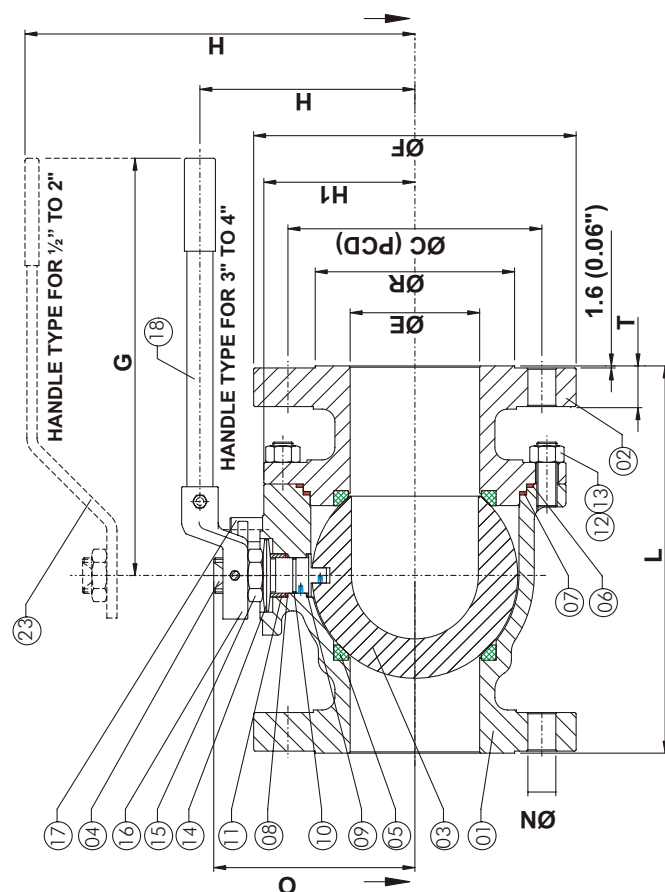
Virgo... Lifeline to Your Process

General Assembly 3-Way L-Port Soft Seated Ball Valve

ITEM NO	PART NAME	MATERIAL OPTIONS
01	BODY	ASTM A216 WCB / A351 CF8M / A352 LCB
02	BODY ADAPTER	ASTM A216 WCB / A351 CF8M / A352 LCB
03	BALL	ASTM A351 CF8M / A351 CF8 / A182 F316
04	STEM	ASTM A479 SS316 / A479 SS304
05	SEATS	PTFE / RPTFE
06	BODY GASKET	GRAPHITE / PTFE
07	BODY GASKET	PTFE
08	STEM GASKET	GRAPHITE / PTFE
09	STEM GASKET	RPTFE
10	O RING	VITON
11	SPACER	STAINLESS STEEL
12	STUDS/BOLTS	ASTM A193 B7/B7M/B8M/A320 L7/L7M
13	NUTS	ASTM A194 2H/2HM/Gr8M/Gr7/Gr7M
14	CUP SPRINGS	50CrV4 / SS304
15	STEM NUTS	ASTM A194 2H/2HM/Gr8M/Gr7/Gr7M
16	HANDLE COUPLER	ASTM A216 WCB
17	STOP PIN	CARBON STEEL / STAINLESS STEEL
18	PIPE	ERW (CARBON STEEL) WITH PVC SLEEVE
19	SIDE ADAPTER	ASTM A216 WCB / A351 CF8M / A352 LCB
20	BODY GASKET (S.A.)	GRAPHITE / PTFE
21	STUD	ASTM A193 B7/B7M/B8M/A320 L7/L7M
22	NUT	ASTM A194 2H/2HM/Gr8M/Gr7/Gr7M
23	HANDLE	CARBON STEEL (ZINC PLATED WITH PVC SLEEVE)

Note: - * Materials not listed above can be offered on request

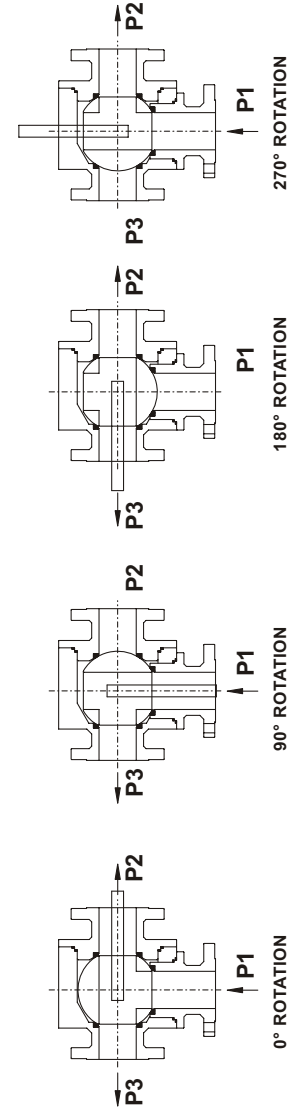
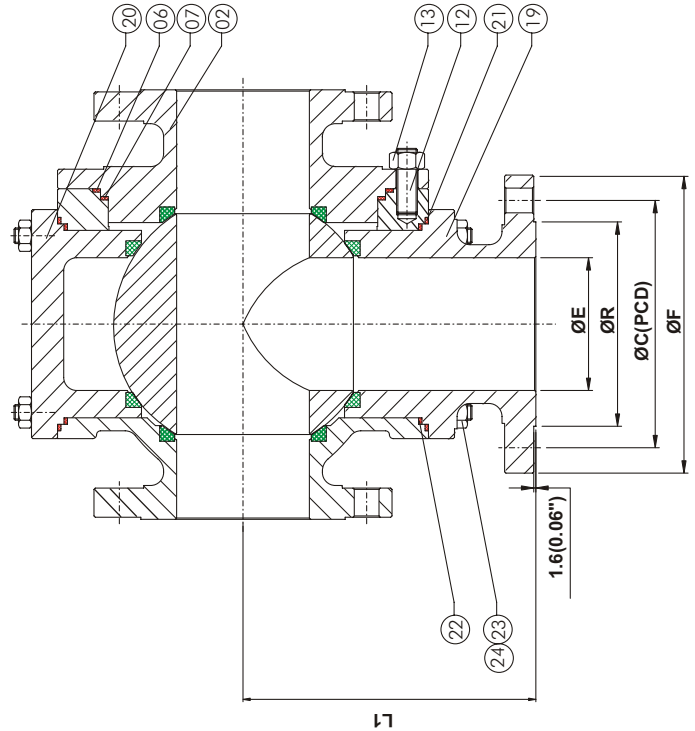
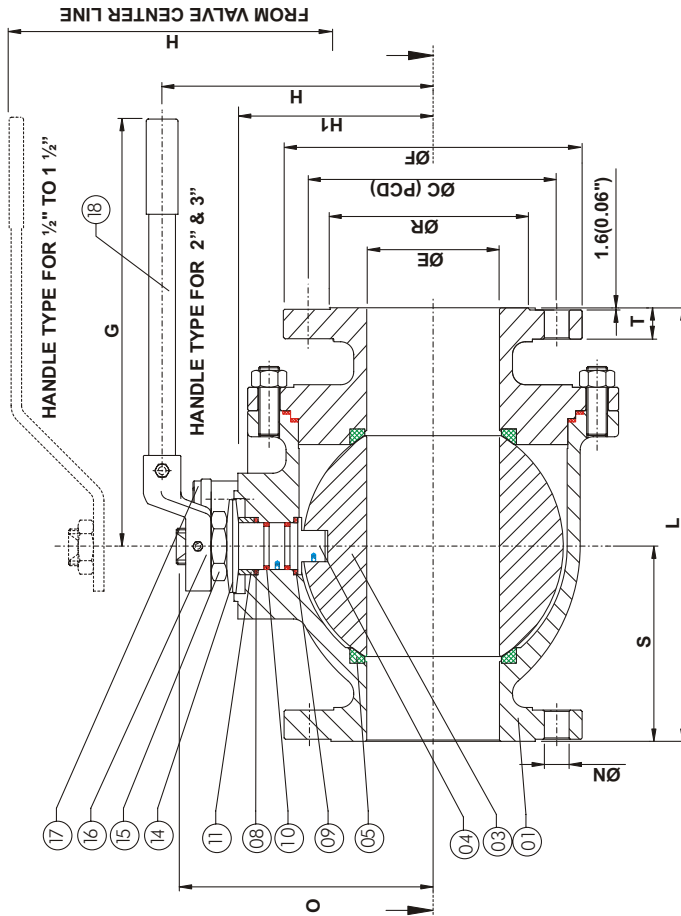
* Sizes 1/2" & 3/4" in bar stock only



General Assembly 3-Way T-Port Soft Seated Ball Valve

ITEM NO	PART NAME	MATERIAL OPTIONS
01	BODY	ASTM A216 WCB / ASTM A351 CF8M
02	BODY ADAPTER	ASTM A216 WCB / ASTM A351 CF8M
03	BALL	ASTM A351 CF8M
04	STEM	ASTM A479 SS316
05	SEATS	PTFE / RPTFE
06	BODY GASKET	GRAPHITE/PTFE
07	BODY GASKET	PTFE
08	STEM GASKET	GRAPHITE/PTFE
09	STEM GASKET	GFT
10	O RING	VITON
11	SPACER	STAINLESS STEEL
12	STUDS/BOLTS	ASTM A193 B7/ B7M / ASTM A193 B8M
13	NUTS	ASTM A194 2H / 2HM / ASTM A194 GR8M
14	CUP SPRINGS	50CrV4 / SS304
15	STEM NUTS	ASTM A194 2H / 2HM / ASTM A194 GR8M
16	HANDLE COUPLER	ASTM A216 WCB
17	STOP PIN	CARBON STEEL / STAINLESS STEEL
18	PIPE	ERW (CARBON STEEL) WITH PVC SLEEVE
19	SIDE ADAPTER	ASTM A216 WCB / ASTM A351 CF8M
20	BLIND ADAPTER	ASTM A216 WCB / ASTM A351 CF8M
21	BODY GASKET (S.A.)	GRAPHITE/PTFE
22	BODY GASKET (S.A.)	PTFE
23	STUD	ASTM A193 B7/ B7M / ASTM A193 B8M
24	NUT	ASTM A194 2H / 2HM / ASTM A194 GR8M

Note: - * Materials not listed above can be offered on request
 * Sizes 1/2", 3/4", 1" & 1 1/2" in bar stock only

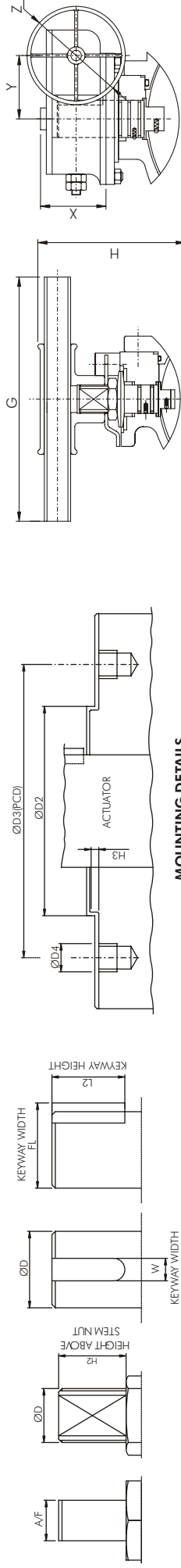


The technical drawings include:

- STEM DETAILS FOR BARE STEM VALVES:** A side view of a stem with dimensions A/F (thread length), $\varnothing D$ (stem diameter), H_2 (height above stem nut), and H_3 (height above actuator).
- MOUNTING DETAILS OF ACTUATOR / GEAR OPERATOR AS PER ISO-5211:** A side view of the actuator with dimensions $\varnothing D_1$ (base diameter), $\varnothing D_2$ (actuator diameter), $\varnothing D_3$ (PCD), L_1 (keyway width), L_2 (keyway height), and W (keyway width).
- MOUNTING DETAILS FOR 4" FB CLASS-150:** A side view of the actuator with dimensions G (base width), H (actuator height), and H_3 (height above actuator).
- DIRECT MOUNTING DETAILS FOR 4" #300 AND 6" #150:** A top view of the actuator with dimensions X (base width), Y (actuator width), and Z (actuator height).

* Approximate

Dimensional Details 3-Way L-Port Soft Seated Ball Valve



STEM DETAILS FOR BARE STEM VALVES

OF ACTUATOR / GEAR OPERATOR AS PER ISO-5211

For 6" FB class-150

Direct mounting details for 8"

CLASS 150-METRIC																														
Valve Size	ØE	L	H	G	ØF	ØC (PCD)	ØR	T	ØN	No. of Holes	S	L1	H1	O	ISO 5211 (MFG)	ØD2	ØD3 (PCD)	ØD4	No. of Holes	ØD	A/F	H2	H3	W	FL	L2	X	Y	Z	Wt approx
1/2"	14	108	93	180	89	60.3	35	11.1	16	4	50.8	81	38	50.5	F05	35	50	1/4"	4	12	8	8.8	2	--	--	--	--	--	--	3.6
3/4"	19	117	98	180	98	69.8	43	13	16	4	53.6	89.4	42	55.5	F05	35	50	1/4"	4	12	8	8.8	2	--	--	--	--	--	--	4.5
1"	25	127	130	210	108	79.4	51	11.2	16	4	57	80	48	66.5	F05	35	50	1/4"	4	16	10	11.7	2	--	--	--	--	--	--	6.15
1-1/2"	38	165	148	210	127	98.4	73	14.3	16	4	76	95	63	92	F05	35	50	1/4"	4	16	10	19.3	2	--	--	--	--	--	--	11.85
2"	50	178	178	290	152	120.6	92	16	19	4	78	110	72.5	105	F07	55	70	5/16"	4	20	14	22.8	2	--	--	--	--	--	--	31
3"	76	203	160	453	190	152.4	127	19	19	4	92	150	98	138	F10	70	102	3/8"	4	28	20	27.8	2	--	--	--	--	--	--	61
4"	96	229	181	453	229	190.5	157	23.8	19	8	100	180	120	159.5	F10	70	102	3/8"	4	28	20	27.8	2	--	--	--	--	--	--	83
6" LP	152	394	279	990	279.5	241.3	216	25.4	22	8	164	230	170	221.7	F12	85	125	1/2"	4	36	24	35.3	3	--	--	--	--	--	--	125
8" LP	203	457	--	--	343	298.4	270	28.6	22	8	200	290	219	273.5	F14	100	140	5/8"	4	42	--	54.5	4	12	47	50	127	100	600	235
CLASS 300-METRIC																														
1/2"	14	140	93	180	95	66.7	35	14.3	16	4	66	113	38	50.5	F05	35	50	1/4"	4	12	8	8.8	2	--	--	--	--	--	--	4.8
3/4"	19	152	98	180	117	83	43	15.8	19	4	65.5	122	42	55.5	F05	35	50	1/4"	4	12	8	8.8	2	--	--	--	--	--	--	6.75
1"	25	165	130	210	124	89	51	17.5	19	4	69	113	48	66.5	F05	35	50	1/4"	4	16	10	11.7	2	--	--	--	--	--	--	11
1-1/2"	38	190	148	210	156	114	73	20.6	22	4	81	135	63	92	F05	35	50	1/4"	4	16	10	19.3	2	--	--	--	--	--	--	16.2
2"	50	216	178	290	165	127	92	22	19	8	92	166.5	72.5	105	F07	55	70	5/16"	4	20	14	22.8	2	--	--	--	--	--	--	53
3"	76	282	160	453	210	168	127	28.6	22	8	132	97.5	98	138	F10	70	102	3/8"	4	28	20	27.8	2	--	--	--	--	--	--	85
4"	96	305	181	453	254	200	157	32	22	8	140	210	120	159.5	F10	70	102	3/8"	4	28	20	27.8	2	--	--	--	--	--	--	110
CLASS 150-INCHES																														
1/2"	0.55	4.25	3.66	7.09	3.50	2.37	1.38	0.44	0.63	4	2.00	3.19	1.50	1.99	F05	1.38	1.97	1/4"	4	0.47	0.31	0.35	0.08	--	--	--	--	--	--	7.92
3/4"	0.75	4.61	3.86	7.09	3.86	2.75	1.69	0.51	0.63	4	2.11	3.52	1.65	2.19	F05	1.38	1.97	1/4"	4	0.47	0.31	0.35	0.08	--	--	--	--	--	--	9.90
1"	0.98	5.00	5.12	8.27	4.25	3.13	2.01	0.44	0.63	4	2.24	3.15	1.89	2.62	F05	1.38	1.97	1/4"	4	0.63	0.39	0.46	0.08	--	--	--	--	--	--	13.53
1-1/2"	1.50	6.50	5.83	8.27	5.00	3.87	2.87	0.56	0.63	4	2.99	3.74	2.48	3.62	F05	1.38	1.97	1/4"	4	0.63	0.39	0.76	0.08	--	--	--	--	--	--	26.07
2"	1.97	7.01	7.01	11.42	5.98	4.75	3.62	0.63	0.75	4	3.07	4.33	2.85	4.13	F07	2.17	2.76	5/16"	4	0.79	0.55	0.90	0.08	--	--	--	--	--	--	68.20
3"	2.99	7.99	6.30	17.83	7.48	6.00	5.00	0.75	0.75	4	3.62	5.91	3.86	5.43	F10	2.76	4.02	3/8"	4	1.10	0.79	1.09	0.08	--	--	--	--	--	--	134.20
4"	3.78	9.02	7.13	17.83	9.02	7.50	6.18	0.94	0.75	8	3.94	7.09	4.72	6.28	F10	2.76	4.02	3/8"	4	1.10	0.79	1.09	0.08	--	--	--	--	--	--	182.60
6" LP	5.98	15.51	10.98	38.98	11.00	9.50	8.50	1.00	0.87	8	6.46	9.06	6.69	8.73	F12	3.35	4.92	1/2"	4	1.42	0.94	1.39	0.12	--	--	--	--	--	--	275.00
8" LP	7.99	17.99	--	--	13.50	11.75	10.63	1.13	0.87	8	7.87	11.42	8.62	10.77	F14	3.94	5.51	5/8"	4	1.65	--	2.15	0.16	0.47	1.85	1.97	5.00	3.94	23.62	517.00
CLASS 300-INCHES																														
1/2"	0.55	5.51	3.66	7.09	3.74	2.63	1.38	0.56	0.63	4	2.60	4.45	1.50	1.99	F05	1.38	1.97	1/4"	4	0.47	0.31	0.35	0.08	--	--	--	--	--	--	10.56
3/4"	0.75	5.98	3.86	7.09	4.61	3.27	1.69	0.62	0.75	4	2.58	4.80	1.65	2.19	F05	1.38	1.97	1/4"	4	0.47	0.31	0.35	0.08	--	--	--	--	--	--	14.85
1"	0.98	6.50	5.12	8.27	4.88	3.50	2.01	0.69	0.75	4	2.72	4.45	1.89	2.62	F05	1.38	1.97	1/4"	4	0.63	0.39	0.46	0.08	--	--	--	--	--	--	24.20
1-1/2"	1.50	7.48	5.83	8.27	6.14	4.49	2.87	0.81	0.87	4	3.19	5.31	2.48	3.62	F05	1.38	1.97	1/4"	4	0.63	0.39	0.76	0.08	--	--	--	--	--	--	35.64
2"	1.97	8.50	7.01	11.42	6.50	5.00	3.62	0.87	0.75	8	3.62	6.56	2.85	4.13	F07	2.17	2.76	5/16"	4	0.79	0.55	0.90	0.08	--	--	--	--	--	--	116.60
3"	2.99	11.10	6.30	17.83	8.27	6.61	5.00	1.13	0.87	8	5.51	8.27	3.86	5.43	F10	2.76	4.02	3/8"	4	1.10	0.79	1.09	0.08	--	--	--	--	--	--	187.00
4"	3.78	12.01	7.13	17.83	10.00	7.87	6.18	1.26	0.87	8	5.51	8.27	4.72	6.28	F10	2.76	4.02	3/8"	4	1.10	0.79	1.09	0.08	--	--	--	--	--	--	242.00

Sizes not listed above can be offered on request

Design, Manufacturing & Testing Standards & Torque values



❖ Valve Bore	: BS 5351	❖ Actuator Mounting	: ISO 5211
❖ Face To Face (L-PORT)	: ASME B 16.10	❖ Face To Face (T-PORT)	: Manufacturer's Standard
❖ Flange Dimensions	: ASME B 16.5	❖ Casting Inspection	: MSS-SP 53, 54, 55, 59, 93 & 94
❖ Shell Thickness	: ASME B16.34/BS 5351	❖ Pressure Testing	: API 6D/API 598/BS 6755 Part 1

Quality Systems / Certification - ISO 9001-2000, API 6D - Q1, PED and GOST

L-PORT TORQUE VALUES																			
SIZE DN (NPS)		1/2" (15)		3/4"(20)		1" (25)		1 1/2"(40)		2"(50)		3"(80)		4"(100)		6"(150)		8"(200)	
TORQUE TYPE		Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in
PRESSURE	150	5	44	8	71	12	106	25	221	30	266	70	620	145	1283	350	3098	800	7081
CLASS	300	8	71	9	80	16	142	35	310	44	389	110	974	180	1593	--	--	--	--

T-PORT TORQUE VALUES																			
SIZE DN (NPS)		1/2" (15)		3/4"(20)		1" (25)		1 1/2"(40)		2"(50)		3"(80)		4"(100)		6"(150)		8"(200)	
TORQUE TYPE		Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in	Nm	lbs-in
PRESSURE	150	--	--	16	142	24	212	50	443	--	--	140	1239	290	2567	700	6196	--	--
CLASS	300	--	--	18	159	--	--	--	--	--	--	--	--	360	3186	--	--	--	--

Note:

- 1) Torque values with PTFE as seat material.
- 2) Torque values for RPTFE as seat material are 20% higher than the corresponding above mentioned values.
- 3) Torque values are at Ambient Temperature, media being clear water.

Corrosion Protection and Painting

All castings are blasted and are subjected to de-watering oil coats. Carbon steel valves are Zinc phosphated and internally lacquered before final assembly.

Valves are thoroughly cleaned and primer coated with Epoxy zinc Phosphate primer, followed by a final coat of Epoxy blue shade applied in semi gloss finish.

Valves are shipped in vapor corrosion impregnated paper bags with desiccant pouches to prevent corrosion due to saline environment.

Notice :

1. The descriptions of all the products contained in this catalogue are general in nature and the products are subject to Virgo's Standard Warranty and other terms and conditions as contained in the applicable contract for such products.
2. We reserve the right to change or modify Product Design or construct without prior notice and without any obligation to make such modification / change on products previously or subsequently sold.
3. 'Virgo' is a trademark of Virgo Engineers Inc.
4. All Virgo Valves are designed and manufactured using good workmanship and materials and they meet all applicable industry standards. Virgo is very anxious to avoid injuries and property damage that might result from wrong application of the product. Proper Valve selection for a given application is imperative. Examples of misapplication or misuse of a Valve include but are not limited to any service or application in which the pressure - temperature rating is exceeded or in a chemical service that is incompatible with valve materials, use of undersized valve and actuator, use of extremely fast valve application and /or continuous valve cycling on standard valves, making modification to the product in any kind, failure to use caution in operating at high temperature, high pressure or highly hazardous services and failure to maintain valves as recommended.

All statements, technical information and recommendations in the bulletin are for general use only. Virgo is not responsible for suitability or compatibility of these products in relation to system requirements. Consult Virgo distributors or factory for the specific requirements and material selection for your intended application. Virgo reserves the right to change or modify product design or product without prior notice



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