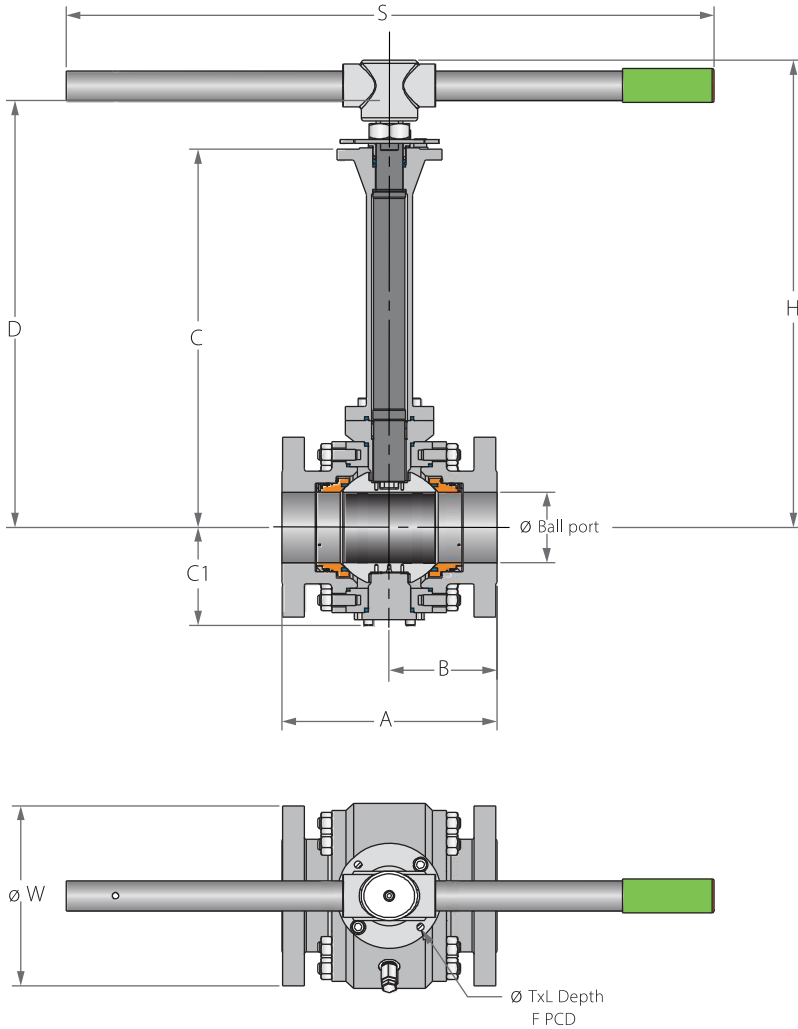
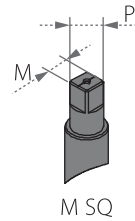


Cryogenic Trunnion Mounted Ball 3 Piece

Valve dimensions



Preparation for actuation

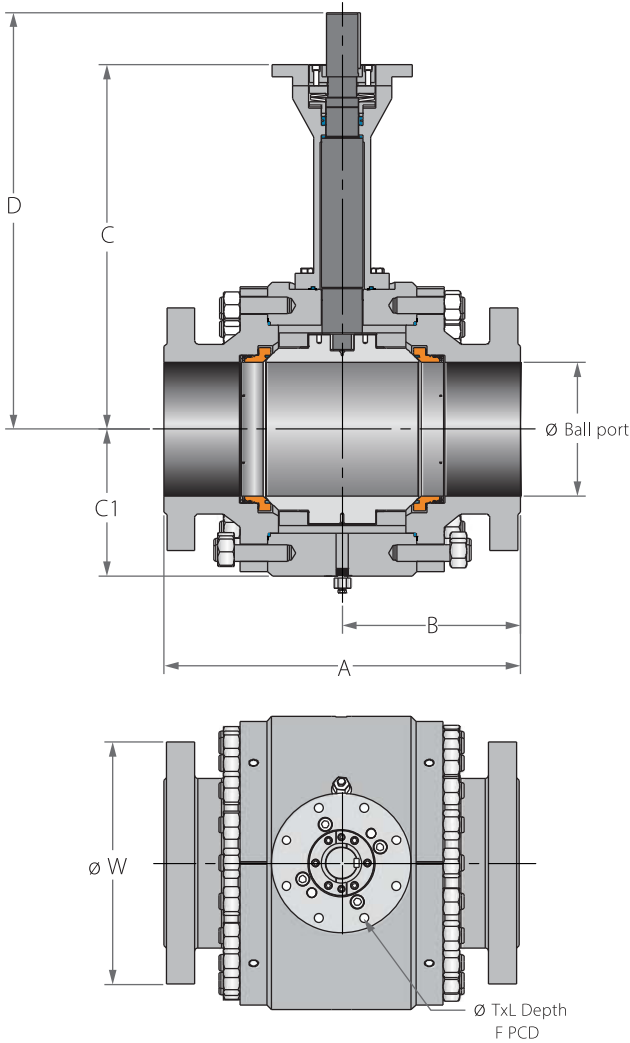


Std. port	Unit	Ball port	A		B		C	C1	D	W		M SQ	P SQ	H	S	F	TxL	Weight kg/lb		Kv / Cv	
			150	300	150	300				150	300							150	300	150	300
DN50	mm	49	178	216	89	108	500	94	546.5	150	165	18.9	22.7	525.8	401	(F10) 102	M10X15 (4 holes)	27	31	400	363
2"	inch	1.93	7.01	8.50	3.50	4.25	19.69	3.7	21.52	5.91	6.5	0.74	0.89	20.7	15.79	4.02		60	68	463	420
DN80	mm	74	203	283	101	141.5	550	117	619.1	190	210	28.45	35.2	638.6	610	(F12) 125	M12X15 (4 holes)	44	61	1125	952
3"	inch	2.91	7.99	11.14	4	5.57	21.65	4.61	24.37	7.48	8.27	1.12	1.39	25.14	24.02	4.92		97	134	1300	1100
DN100	mm	100	229	305	114.0	152.5	600	139	669.1	230	255	28.45	35.2	662.6	916	(F12) 125	M12X15 (4 holes)	66	100	2154	1860
4"	inch	3.94	9.02	12	4.51	6	236.22	5.47	26.34	9.06	10.04	1.12	1.39	26.09	36.06	4.92		146	220	2490	2150
DN150	mm	150	394	403	197	201.5	607	191	719.6	280	320	35.9	43.5	777.1	916	(F14) 140	M16X20 (4 holes)	180	216	4723	4628
6"	inch	5.91	15.51	15.87	7.76	7.93	23.9	7.52	28.33	11.02	12.6	1.41	1.71	30.59	36.06	5.51		397	476	5460	5350

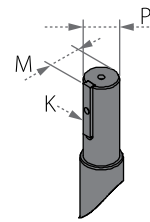


Cryogenic Trunnion Mounted Ball 3 Piece

Valve dimensions



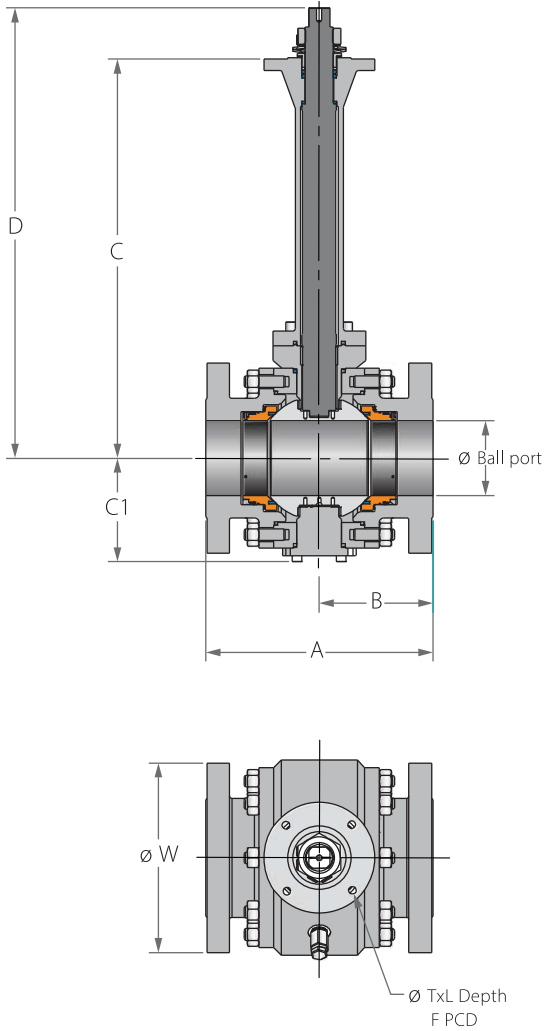
Preparation for actuation



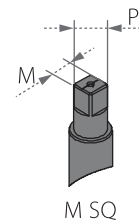
Std. port	Unit	Ball port	A		B		C	C1	D	W		P	M	K	F	TxL	Weight kg/lb		Kv / Cv		
			150	300	150	300				150	300						150	300	150	300	
DN200	mm	201.0	457.0	502.0	228.50	251.0	708.0	215.0	785.0	345.0	380.0	50.0	54.0	14.0	(F16)	165.0	22x25	346	378	9273	8737
8"	inch	7.91	17.99	19.76	9.0	9.88	27.87	8.46	30.91	13.58	14.96	1.97	2.13	0.55		6.50	(4 holes)	763	833	10720	10100
DN250	mm	252.0	533.0	568.0	266.0	284.0	713.3	260.0	790.4	405.0	445.0	50.0	54.0	14.0	(F25)	254.0	18x25	518	639	15224	14792
10"	inch	9.92	20.98	22.36	10.49	11.18	28.08	10.24	31.12	15.94	17.52	1.97	2.13	0.55		10.0	(8 holes)	1142	1409	17600	17100
DN300	mm	303.0	610.0	648.0	305.0	324.0	800.0	300.0	880.0	485.0	520.0	60.0	63.5	18.0	(F25)	254.0	18x25	723	833	23096	22404
12"	inch	11.93	24.02	25.51	12.01	12.76	31.50	11.81	34.67	19.09	20.47	2.36	2.50	0.71		10.0	(8 holes)	1594	1836	26700	25900

Cryogenic Trunnion Mounted Ball 3 Piece

Valve dimensions



Preparation for actuation

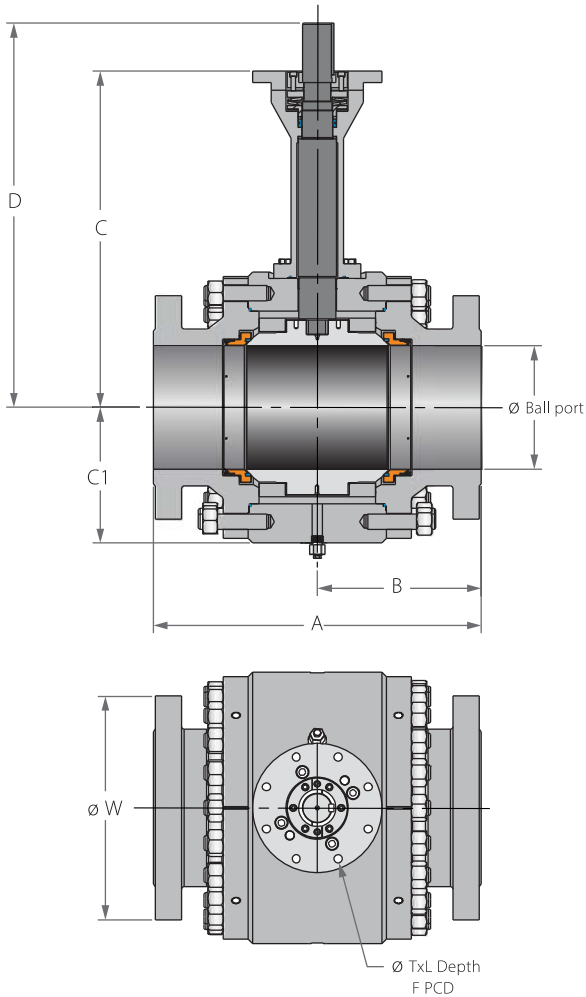


Std. port	Unit	Ball port	A		B		C		C1		D		W		M SQ	P SQ	F	TxL	Weight kg/lb		Kv / Cv		
			600	900	600	900	600	900	600	900	600	900	150	300					150	300			
DN50	mm	49	292	368	146	184	500	459.5	119	263	547.5	507	165	215	18.9	22.7	(F10)	102	M10X15 (4 holes)	49	67	329	294
2"	inch	1.93	11.5	14.49	5.75	7.24	19.69	18.09	4.69	10.35	21.56	19.96	6.5	8.46	0.74	0.89		4.02		108	148	380	340
DN80	mm	74	356	381	178	190.5	550	502	160	152.7	617	569	210	240	28.45	35.2	(F12)	125	M12X15 (4 holes)	103	114	874	822
3"	inch	2.91	14.02	15	7.01	7.5	21.65	19.76	6.3	6.01	24.29	22.4	8.27	9.45	1.12	1.39		4.92		227	251	1010	950
DN100	mm	100	432	457	216	228.5	600	193	184	184	712.6	259	275	290	35.9	43.5	(F14)	140	M16X20 (4 holes)	166	186	1557	1471
4"	inch	3.94	17.01	17.99	8.5	9	23.62	7.6	7.24	7.24	28.06	10.2	10.83	11.42	1.41	1.71		5.51		366	410	1800	1700
DN150	mm	150	559	610	279.5	305	624.5	642.5	214.5	224	737.1	755.1	355	380	35.9	43.5	(F14)	140	M16X20 (4 holes)	342	418	3893	3823
6"	inch	5.91	22.01	24.02	11	12.01	24.59	25.3	8.44	8.82	29.02	29.73	13.98	14.96	1.41	1.71		5.51		754	922	4500	4420

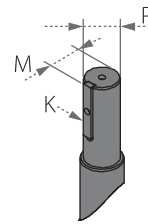


Cryogenic Trunnion Mounted Ball 3 Piece

Valve dimensions



Preparation for actuation



Std. port	Unit	Ball port	A		B		C		C1		D		W		P	M	K	F	TxL	Weight kg/ib		Kv / Cv		
			600	900	600	900	600	900	600	900	600	900	600	900						600	900	600	900	
DN250	mm	201.0	660.0	737.0	330.0	368.5	696.0	696.0	263.0	263.0	774.0	774.0	420.0	470.0	60.0	63.5	14.0	(F25)	254.0	18x25	577	836	7742	7344
8"	inch	7.91	25.98	29.02	12.99	14.51	27.4	27.4	10.35	10.35	30.47	30.47	16.54	18.5	2.36	2.5	0.55		10.0	(8 holes)	1272	1843	8950	8490
DN100	mm	252.0	787.0	838.0	393.5	419.0	739.0	757.0	310.0	326.0	817.0	835.0	510.0	545.0	60.0	63.5	14.0	(F25)	254.0	18x35	931	1301	12543	12110
10"	inch	9.92	30.98	32.99	15.49	16.50	29.09	29.80	12.20	12.83	32.17	32.87	20.08	21.46	2.36	2.5	0.55		10.0	(8 holes)	2052	2868	14500	14000
DN300	mm	303.0	838.0	965.0	419.0	482.5	800.0	788.0	344.0	361.0	915.0	903.0	560.0	610.0	72.0	76.5	20.0	(F25)	254.0	18x35	1126	1576	19809	18598
12"	inch	11.93	32.99	37.99	16.5	19.0	31.5	31.02	13.54	14.21	36.02	35.55	22.05	24.02	2.83	3.01	0.79		10.0	(8 holes)	2482	3474	22900	21500

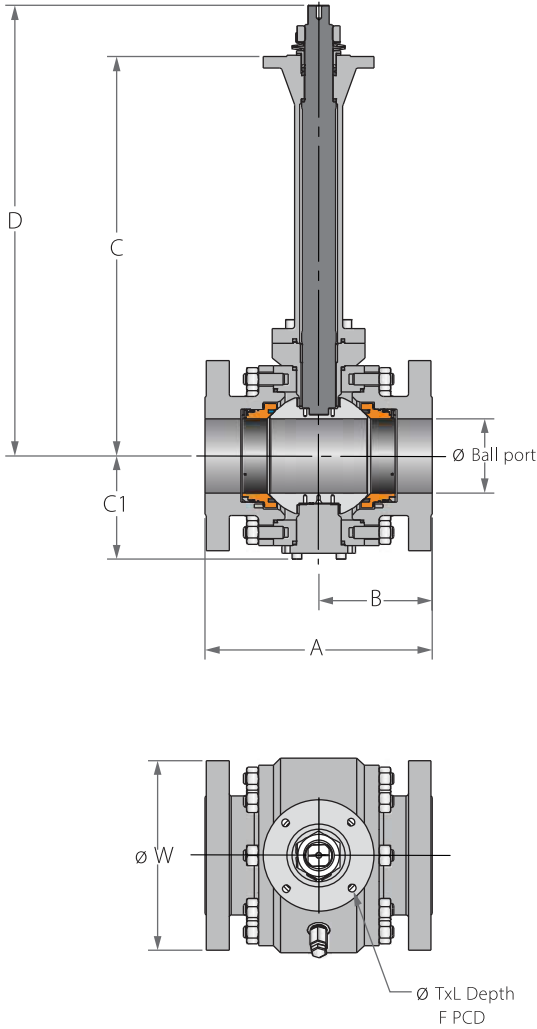
C95

C96

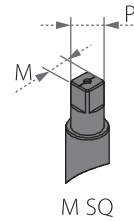
2"-6" | DN50-DN150 | CLASS 1500/2500

Cryogenic High Pressure Trunnion Mounted Ball 3 Piece

Valve dimensions



Preparation for actuation

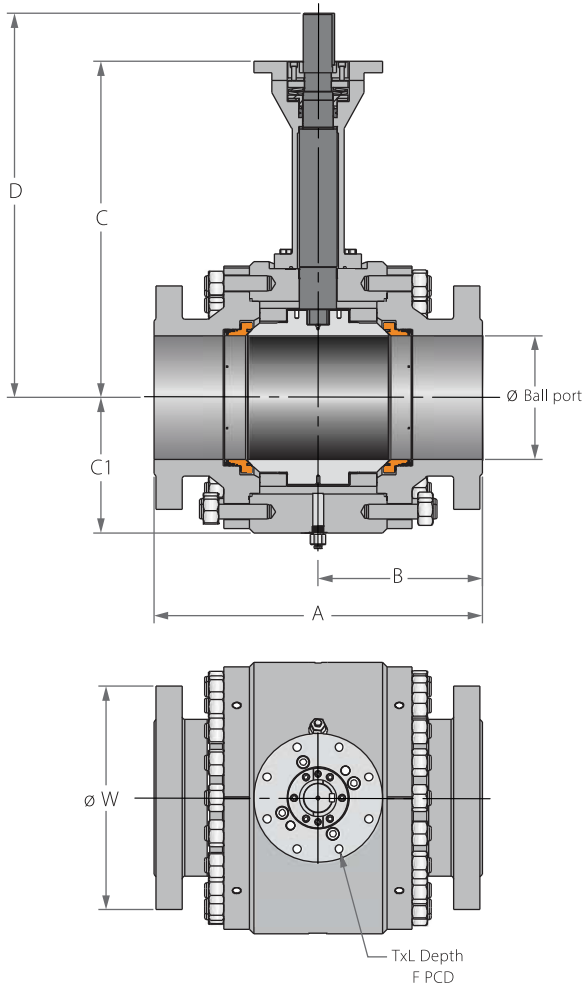


Std. port	Unit	Ball port		A		B		C	C1	D	W		M SQ	P SQ	F	TxL	Weight kg/lb		Kv / Cv		
		1500	2500	150	300	150	300				150	300					150	300	150	300	
DN50	mm	49	42	368	451	184	225.5	500	127	569	215	235	28.45	35	(F12)	125	M12X15	90	179	281	260
2"	inch	1.93	1.65	14.49	17.76	7.24	8.88	19.69	5	22.4	8.46	9.25	1.12	1.38	4.92		(4 holes)	198	395	325	300
DN80	mm	74	62	470	578	235	289	550	201.5	619	265	305	28.45	35	(F12)	125	M12X15	175	340	735	649
3"	inch	2.91	2.44	18.5	22.76	9.25	11.38	21.65	7.93	24.37	10.43	12.01	1.12	1.38	4.92		(4 holes)	386	750	850	750
DN100	mm	100	87	546	673	273	336.5	600	198.5	712	310	355	35.9	43.5	(F14)	140	M16X20	330	646	1384	1228
4"	inch	3.94	3.43	21.5	26.5	10.75	13.25	23.62	7.81	28.03	12.2	13.98	1.41	1.71	5.51		(4 holes)	728	1424	1600	1420
DN150	mm	144	131	705	914	352.5	457	608	272	763	395	485	45.9	59	(F16)	165	M20x30	627	1227	3590	2206
6"	inch	5.67	5.16	27.76	35.98	13.88	17.99	23.94	10.71	30.04	15.55	19.09	1.81	2.32	6.5		(4 holes)	1382	2705	4150	2550

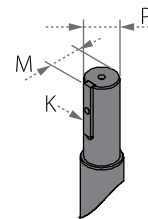


Cryogenic High Pressure Trunnion Mounted Ball 3 Piece

Valve dimensions



Preparation for actuation



Std. port	Unit	Ball port		A		B		C	C1	D	W		P	M	K	F	TxL	Weight kg/ib		Kv / Cv		
		1500	2500	150	300	150	300				1500	2500						1500	2500	1500	2500	
DN200	mm	201.0	179.0	832.0	1022.0	416.0	511.0	705.0	273.0	780.0	485.0	550.0	72.0	76.9	20.0	(F25)	254.0	18x25	1000	2330	6963	4758
8"	inch	7.91	7.05	32.76	40.24	16.38	20.12	27.76	10.75	30.71	19.09	21.65	2.83	3.03	0.79		10.0	(8 holes)	2205	5137	8050	5500
DN250	mm	239.0	223.0	991.0	1270.0	495.5	635.0	742.0	374.0	846.0	585.0	675.0	120.0	104.4	28.0	(F35)	356.0	32x45	1900	3623	11418	7389
10"	inch	9.41	8.78	39.02	50.0	19.51	25.0	29.21	14.72	33.31	23.03	26.57	4.72	4.11	1.10		14.01	(8 holes)	4189	7987	13200	8542
DN300	mm	287.0	265.0	1130.0	1422.0	565.0	711.0	800.0	512.0	930.0	675.0	760.0	98.0	104.4	28.0	(F40)	406.0	38x55	2705	4875	16868	10508
12"	inch	11.30	10.43	44.49	55.98	22.24	27.99	31.5	20.16	36.61	26.57	29.92	3.86	4.11	1.10		15.98	(8 holes)	5963	10747	19500	12148

C91

C92

C93

C94

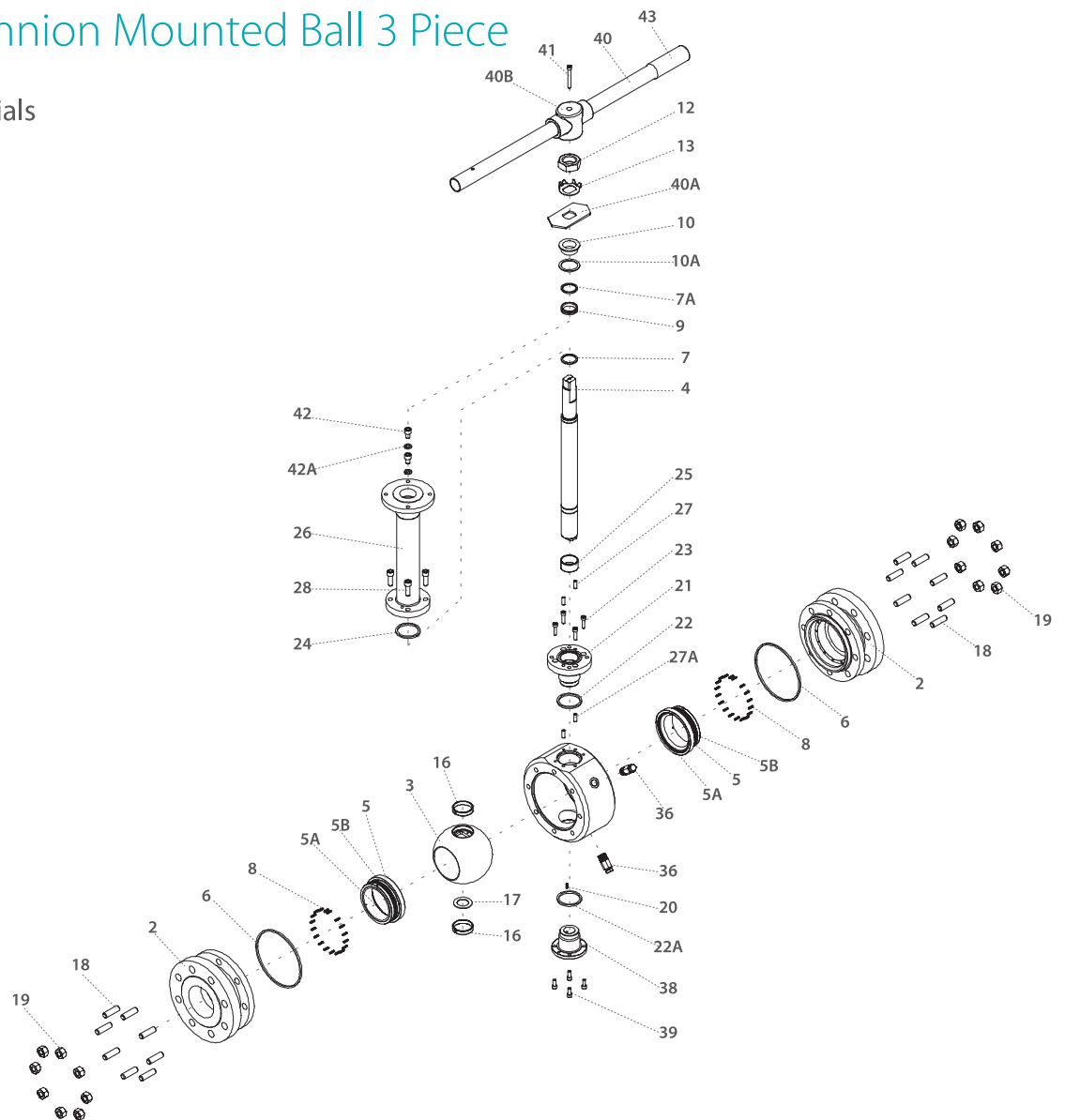
C95

C96

2"-6"

Cryogenic Trunnion Mounted Ball 3 Piece

Components & materials



Item	Description	Material Spec. ASTM	Qty.
1	Body	Acc. Ordering Code	1
2	End	Acc. Ordering Code	2
3	Ball	Acc. Ordering Code	1
4	Stem	Acc. Ordering Code	1
5*	Seat	Acc. Ordering Code	2
5A*	Seat insert	Acc. Ordering Code	2
5B*	Seat seal	PTFE+Elgiloy, Graphite	2
6*	Body seal	Graphite	2
7*	Stem thrust seal	PCTFE	1
7A*	Anti-abrasion ring	PCTFE	1
8	Seat spring	Inconel 750	20-32
9*	Stem seal	HermetiX TFM	1
10	Follower	S. Steel	1
10A*	Slide bearing	S. Steel	1
12	Stem nut	S. Steel	1
13	Tab lock washer	S. Steel	1
16	Ball Bearing	PMT 316	2
17	Ball Thrust Washer	PMT 316	2
18	Body Stud	ASTM A320-B8M	8-40
19	Body Nut	A194 8M	8-40
20	Anti-static spring	S. Steel	1

Item	Description	Material Spec. ASTM	Qty.
21 ⁽¹⁾	Gland Plate	A479 316/ 316L	1
22 ^{(1)*}	Gland Plate Seal	Graphite	1
22A*	Outer trunnion seal	Graphite	1
23 ⁽¹⁾	Gland Plate Bolts	ASTM A320-B8M	6-8
24*	Bonnet seal	Graphite	1
25	Stem bearing	PMT 316	1
26	Bonnet	S. Steel	1
27	Bonnet Pins	S. Steel	2
27A ⁽¹⁾	Gland Pins	S. Steel	2
28	Bonnet Bolts	ASTM A320-B8M	4-8
36	Plug drain/ vent valve	S. Steel	2
37	Tag (not shown)	S. Steel	1
38	Outer trunnion	A479 316	1
39	Outer trunnion bolts	ASTM A320-B8M	4-8
40	Pipe handle	S. Steel	1
40A	Stop plate	S. Steel	1
40B	Wrench head	S. Steel	1
41	Wrench head bolt	S. Steel	1
42	Stop bolt	S. Steel	2
42A	Spring washer	S. Steel	2
43	Sleeve	PCV	1

C91

C92

C93

C94

C95

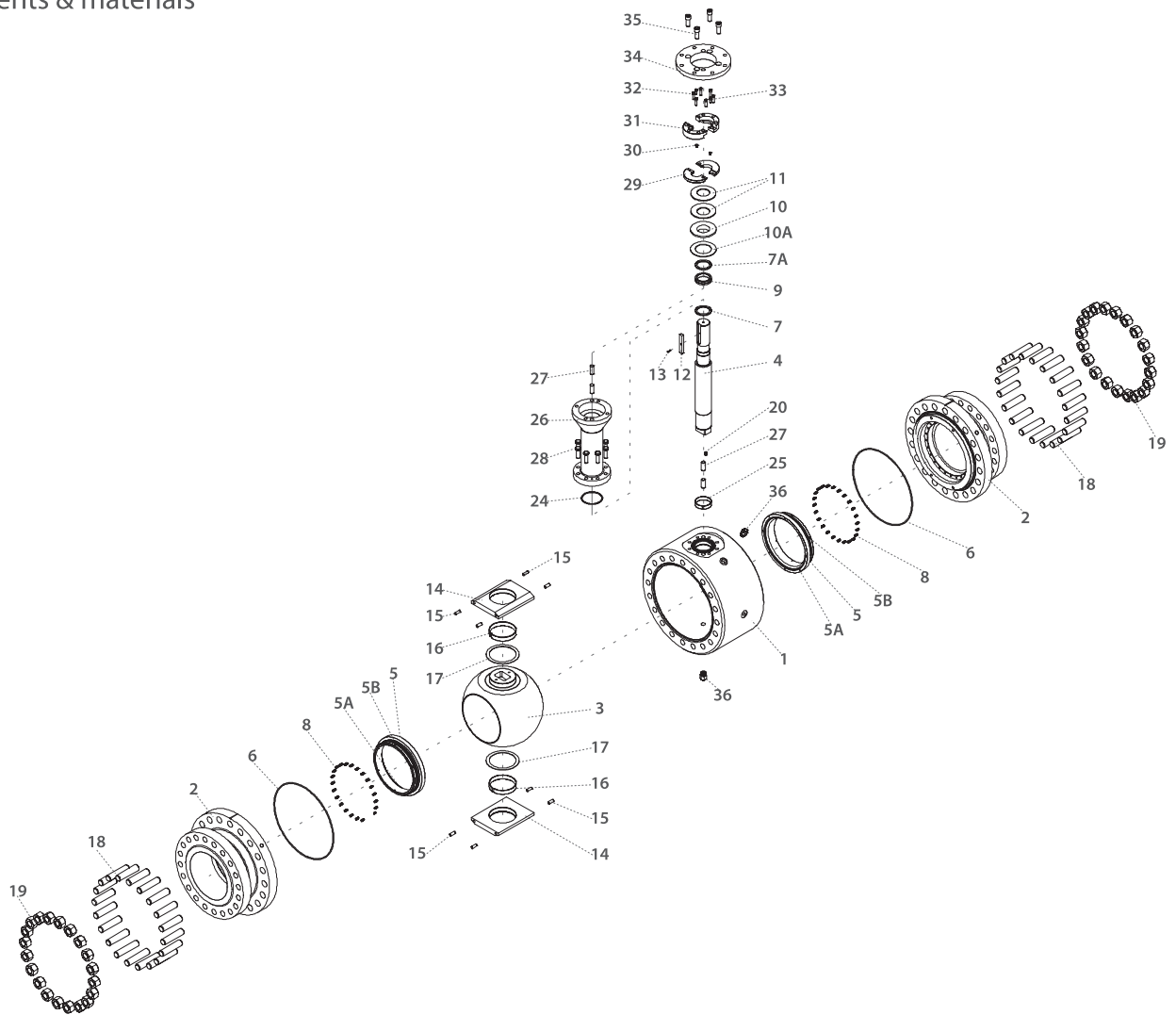
C96

8"-12"



Cryogenic Trunnion Mounted Ball 3 Piece

Components & materials



Item	Description	Material Spec. ASTM	Qty.
1	Body	Acc. Ordering Code	1
2	End	Acc. Ordering Code	2
3	Ball	Acc. Ordering Code	1
4	Stem	Acc. Ordering Code	1
5*	Seat	Acc. Ordering Code	2
5A*	Seat insert	Acc. Ordering Code	2
5B*	Seat seal	PTFE+Elgiloy, Graphite	2
6*	Body seal	Graphite	2
7*	Stem thrust seal	PCTFE	1
7A*	Anti-abrasion ring	PCTFE	1
8	Seat spring	Inconel 750	20-44
9*	Stem seal	HermetiX TFM	1
10	Follower	S. Steel	1
10A*	Slide bearing	S. Steel	1
11	Disc spring	S. Steel	2
12	Stem key	S. Steel	1
13	Stem key bolt	S. Steel	1
14	Trunnion plate	A479 316	2
15	Trunnion plate Pin	S. Steel	8

Item	Description	Material Spec. ASTM	Qty.
16	Ball Bearing	PMT 316	2
17	Ball Thrust Washer	PMT 316	2
18	Body Stud	ASTM A320-B8M	16-40
19	Body Nut	A194 8M	16-40
20	Anti-static spring	S. Steel	1
24*	Bonnet seal	Graphite	1
25	Stem bearing	PMT 316	1
26	Bonnet	S. Steel	1
27	Bonnet Pins	S. Steel	4-6
28	Bonnet Bolts	ASTM A320-B8M	4-8
29	Bot Follower	A479 316	2
30	Bot Follower bolt	ASTM A320-B8M	2
31	Top Follower	A479 316	2
32	Top Follower drive bolt	ASTM A320-B8M	6-8
33	Top Follower bolt	ASTM A320-B8M	2
34	Iso Plate	A479 316	1
35	Iso Plate bolt	ASTM A320-B8M	4-8
36	Plug drain/ vent valve	S. Steel	2
37	Tag (not shown)	S.Steel	2

C91

C92

C93

C94

C95

C96



Cryogenic Trunnion Mounted Ball 3 Piece - Ordering Code System

"Mandatory option" options are marked with **green background** | "Standard offer" options are marked with **light green background**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6	0		F	C	B	9	3	W	-	6	M	6	5	C	A	G	/	6	0	0									
Size		Features				Series		Design		Body & ends		Stem	Ball & seat ring		Seat feature	Seat insert	Inner Seal	Outer Seal	End connection				Special features						

Size (1-2)		
Code	inch	mm
20	2"	50
30	3"	80
40	4"	100
60	6"	150
80	8"	200
A0	10"	250
A2	12"	300
A4	14"	350

for C91, C92, C93, C94 series only

Features (3-6)	
F	Fire safe
C	Cryogenic design
B	Full port

Series (7-8)	
91	3 Piece design #150 (PN20)
92	3 Piece design #300 (PN50)
93	3 Piece design #600 (PN100)
94	3 Piece design #900 (PN150)
95	3 Piece High pressure #1500 (PN250)
96	3 Piece High pressure #2500 (PN420)

Design (9)	
W	Total HermetiX Integrity package

Body & ends material (11)	
6	S. Steel

Stem material (12)	
M	High Strength S. Steel

Ball & seat ring material (13)	
6	S. Steel

Seat feature (14)	
S	Single Piston Effect (SPE) (API 6D DBB)

Seat insert (15)	
C	PCTFE

Inner Seal (16)	
A	TFM

Outer Seal (17)	
G	Graphite

End Connection (19-22)	
Flanged Raised face	
150	ASME B16.5 #150 RF
300	ASME B16.5 #300 RF
600	ASME B16.5 #600 RF
900	ASME B16.5 #900 RF
1500	ASME B16.5 #1500 RF
2500	ASME B16.5 #2500 RF
PN16	DIN EN 1092-1 PN16
PN40	DIN EN 1092-1 PN40
PN63	DIN EN 1092-1 PN63
PN100	DIN EN 1092-1 PN100
PN160	DIN EN 1092-1 PN160
PN250	DIN EN 1092-1 PN250
PN320	DIN EN 1092-1 PN320
PN400	DIN EN 1092-1 PN400
Flanged RTJ	
600RTJ	ASME B16.5 #600 RTJ
900RTJ	ASME B16.5 #900 RTJ
1500RTJ	ASME B16.5 #1500 RTJ
2500RTJ	ASME B16.5 #2500 RTJ
Welded ends	
XBW*	Extended butt weld sch 40
XBW80	Extended butt weld sch 80
XBW160	Extended butt weld sch 160