

Trunnion mounted ball valves



Trunnion Mounted Ball Valves

Trunnion	General	81/82 Series	83 Series	91/92 Series	93/94 Series	95/96 Series	Ordering code system
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Introduction

The Habonim trunnion mounted valve series is specially designed to endure the harsh conditions of the oil & gas and petrochemical industries, including both underground and above ground installation. The robust design tolerates the heavy loads applied to the valve trim that result from of large sizes, high pressures and dynamic temperature cycles.

The trunnion valve series is certified to API 6D (Habonim monogram #6D-1278) with a valve wall thickness that is in full compliance with ANSI B16.34.

The complete line is fire safe, designed according to API 607, ISO10497 and API 6FA.

Up to class 600 Habonim offers a cost-effective solution consisting of a 2-piece solid cast full-port valve. With classes 900 (94 series), 1500 (95 series) and 2500 (96 series), Habonim uses a robust 3-piece forged design for body and ends.

The trunnion valve line is operable under the full differential ANSI class pressure rating, by manually applying a maximum operating force of 360N (80 lbf). A variety of end connectors ensures design flexibility according to customer needs.

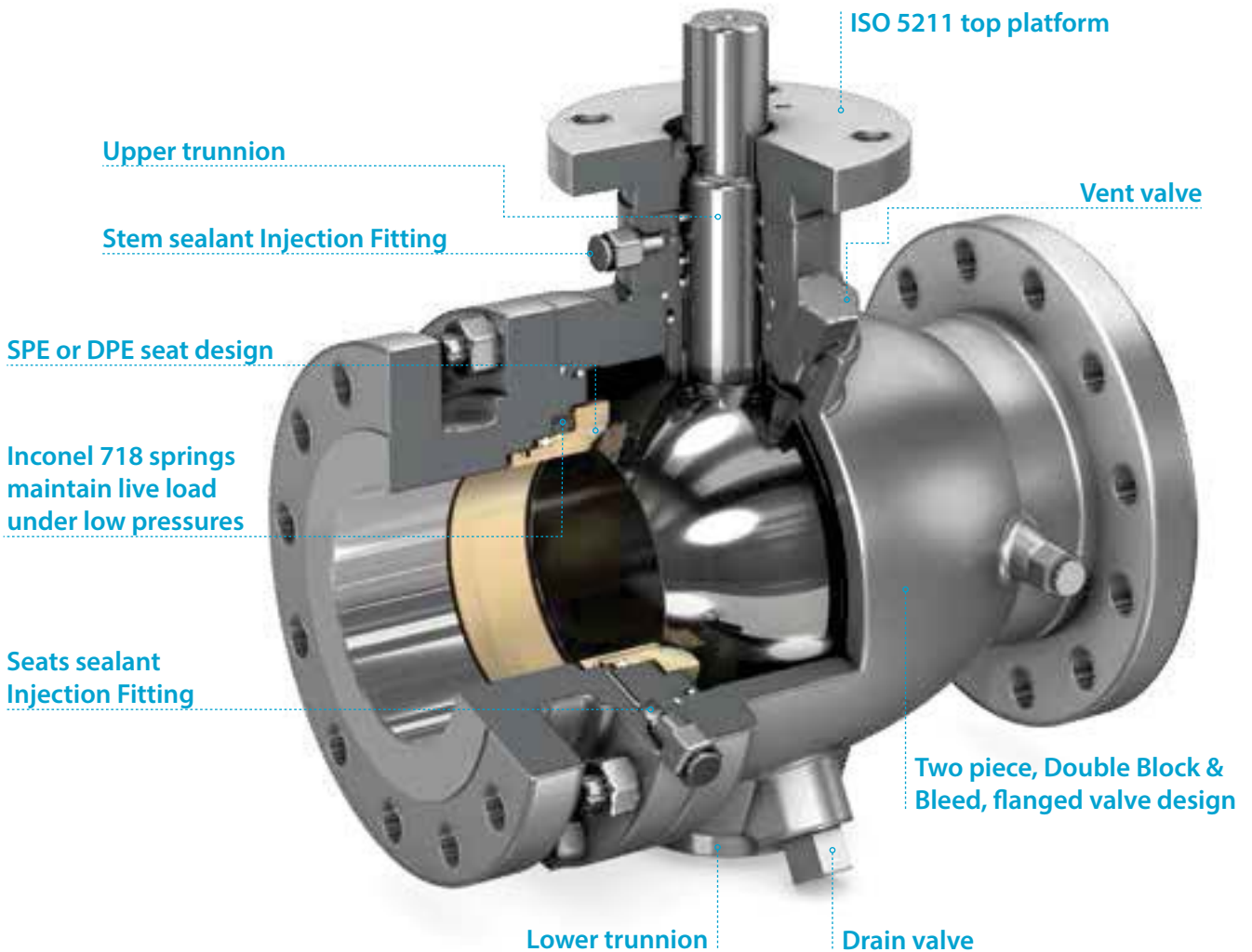
Technical summary

Size range	2" - 16" (DN50 - DN400)
Series in range	<p><u>Two piece design</u></p> <p>81 series - Class 150/PN20</p> <p>82 series - Class 300/PN50</p> <p>83 series - Class 600/PN100</p> <p><u>Three piece design</u></p> <p>91 series - Class 150/PN20</p> <p>92 series - Class 300/PN50</p> <p>93 series - Class 600/PN100</p> <p>94 series - Class 900/PN160</p> <p>95 series - Class 1500/PN250 (up to 12")</p> <p>96 series - Class 2500/PN400 (up to 8")</p>
Pressure range	Vacuum 10 ⁻⁶ Tor to 414 bar (6000 psi)
Temperature range	-60 °C (-76 °F) to 260 °C (418 °F).
Materials	Carbon Steel A350 LF2, A105, A216 WCB, Stainless Steel 316/316L and more
End connections	Extended weld end, flanged

Standards of compliance

Factory certification	ISO 9001-2008	Quality management system
Valve design and tests	ANSI B16.34, API 6D / ISO 14313 , ISO 17292	Valve design
	ANSI B16.25 , EN12627-4	Buttweld end connection (Schedule 5, 10, 40, 80)
	ANSI B16.5, EN 1092 Pt 1&2	Flange dimensions
	ANSI B16.10 , EN 558	Face-to-Face dimensions
	NACE MR-0175, ISO 15156-1/2/3	Materials for use in oil and gas production environments containing H ₂ S
Certifications	EN 12266-1, API 598	Testing of metallic valves - Pressure tests, test procedures and acceptance criteria.
	API 607, ISO 10497, API 6FA	Testing of valves - Fire type-testing requirements
	ISO 15848-1	Industrial valves - measurement, test and qualification procedures for fugitive emissions
	PED 97/23/EC Module H	Pressure equipment directive
	ATEX 94/9/EC	Equipment and protective systems intended for use in potentially explosive atmospheres (optional for actuated unit only)
	IEC 61508-2 SIL 2/3	Safety integrity level - Functional safety of electrical/electronic/programmable electronic safety-related systems (optional for actuated unit only)
Documentation	EN 10204 2.2 / 3.1 / 3.2	Metallic materials - types of inspection documents

Two piece



Design features

- 2-piece cast flanged valve
- Double block & bleed
- Blowout-proof robust stem design
- Bi-directional as standard
- API 6D certified (API monogram #6D-1278)
- Fire safe designed to API 6FA, API 607, ISO 10497
- Comply with NACE MR0175/ISO 15156
- Corrosion resistant low friction bearings
- Double Piston Effect or Single Piston Effect seat design
- Mixed SPE and DPE seats design also available
- Inconel springs, assist in low pressure sealing
- Stainless steel injection fittings for emergency stem or seat sealant & lubrication maintenance
- Integral top-works direct mounting pad to ISO 5211
- 8" and larger valves are equipped with lifting lugs
- 8" and above are equipped with vent and drain valves (Optional)
- Antistatic grounding between ball, stem & body

Sealant Injection Fitting

This feature is standard except in sizes 2"–4" for pressure classes 150, 300 and 600. In the case of seat ring damage, sealant injection provides a fast, reliable way to restore tight sealing.

This injection system can also be used for routine flushing of the seat ring area while in service.

Double Block & Bleed

All Habonim trunnion mounted ball valves are designed and manufactured to facilitate block and bleed applications in the closed or fully open position. With the valve under pressure, in the closed position, the valve cavity can be flushed by utilizing the drain valve and vent hole in tandem.

Trunnion Mounted Ball Valves

Trunnion

General

81/82
Series

83
Series

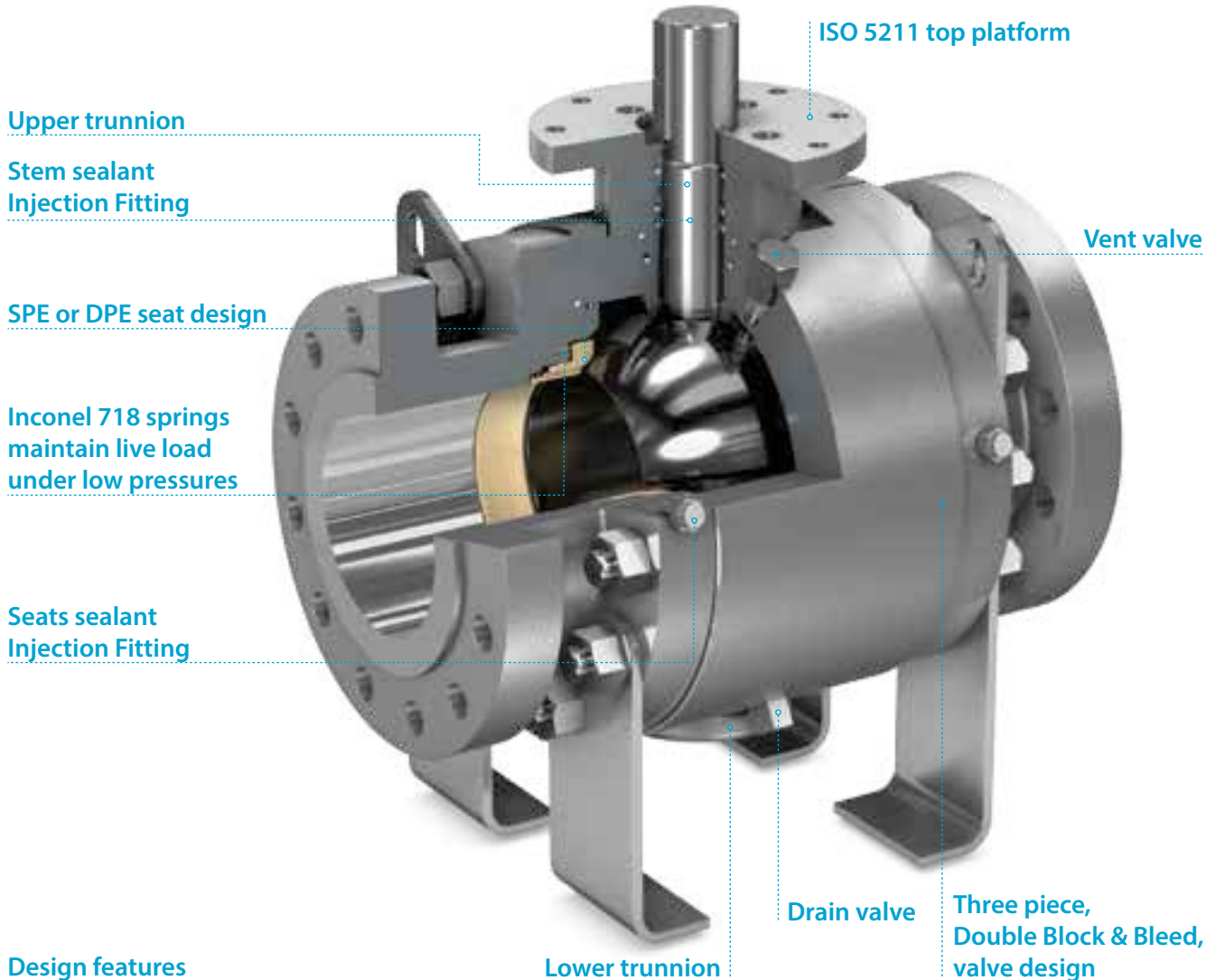
91/92
Series

93/94
Series

95/96
Series

Ordering
code system

Three piece



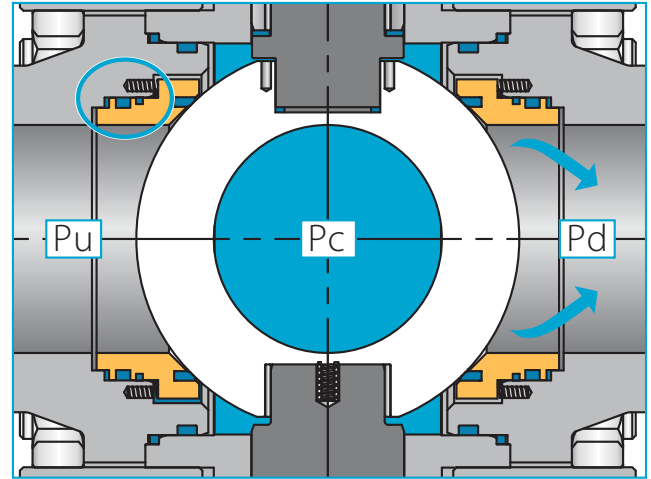
Design features

- 3-piece robust, forged valve
- Double block & bleed
- Blowout-proof robust stem design
- Bi-directional as standard
- API 6D certified (API monogram #6D-1278)
- Fire safe designed to API 6FA, API 607, ISO 10497
- Comply with NACE MR0175/ISO 15156
- Corrosion resistant low friction bearings
- Double Piston Effect or Single Piston Effect seat design
- Mixed SPE and DPE seats design also available
- Inconel springs, assist in low pressure sealing
- Stainless steel injection fittings for emergency stem or seat sealant & lubrication maintenance
- Integral top-works direct mounting pad to ISO 5211
- 6" and larger valves are equipped with lifting lugs
- 8" and above are equipped with vent and drain valves (Optional)
- Antistatic grounding between ball, stem & body

Seats design

Single Piston Effect (SPE)

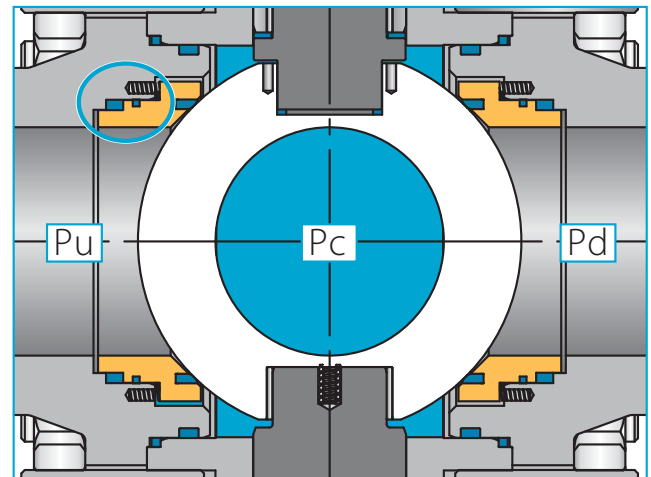
A trunnion valve seat design that allows automatic relief to the pipe line from excessive pressure built up inside the body cavity. With the SPE design the trunnion valve only seals on the upstream side.



SPE design

Double Piston Effect (DPE) (API 6D DIB-1)

A trunnion valve seat design that allows both seats to seal with pressure acting from the same side of the valve. This double barrier, provides better sealing capability and extends mean time between maintenance. On the downside, the DPE doesn't allow self relief of over pressure from the valve cavity. Body cavity over-pressurization can be released through a relief valve on the body.



DPE design

Mixed design of DPE and SPE (API 6D DIB-2)

A combination of double sealing features on the downstream side and single sealing on the upstream seat is available upon request. This configuration maintains the sealing capacity of the valve in case of failure of the upstream seat and release of the body cavity over pressure through the upstream seat. Valves with a mixed DPE and SPE seat design will be Uni-directional and equipped with highly visible arrow flow plate.

Trunnion Mounted Ball Valves

Trunnion

General

81/82 Series

83 Series

91/92 Series

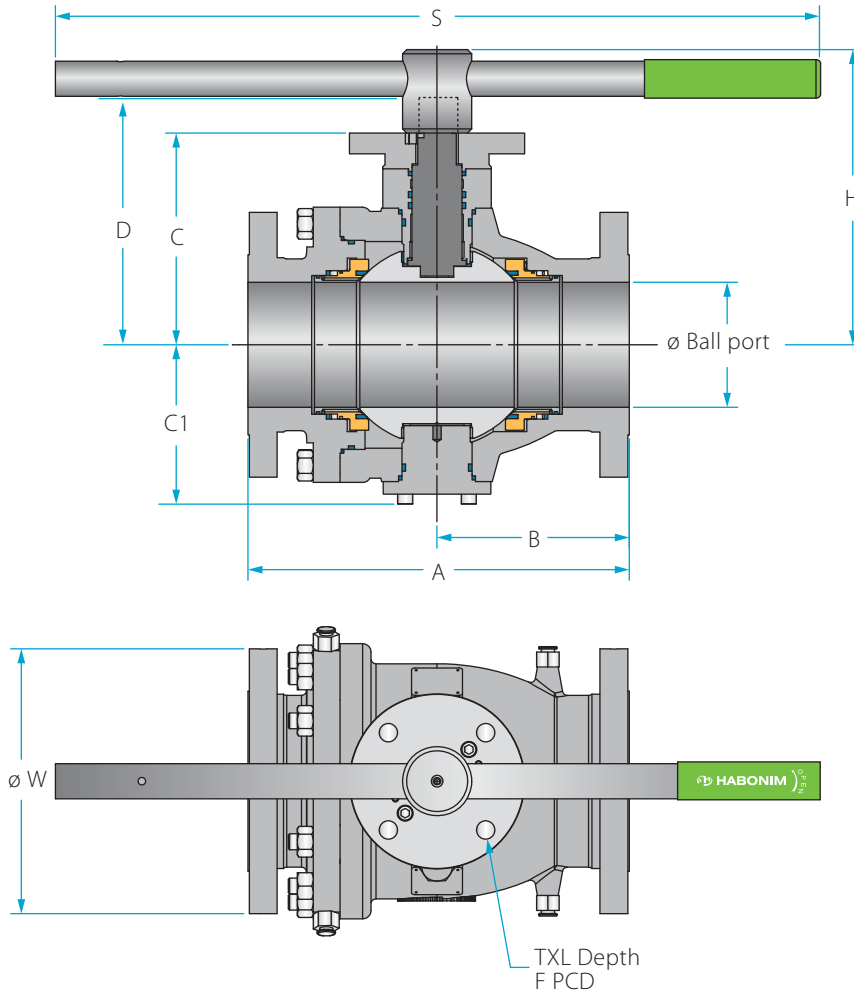
93/94 Series

95/96 Series

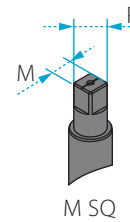
Ordering code system

Size 2"-6" | DN50-DN150 | Class 150/300 | 81/82 Series

Valve dimensions



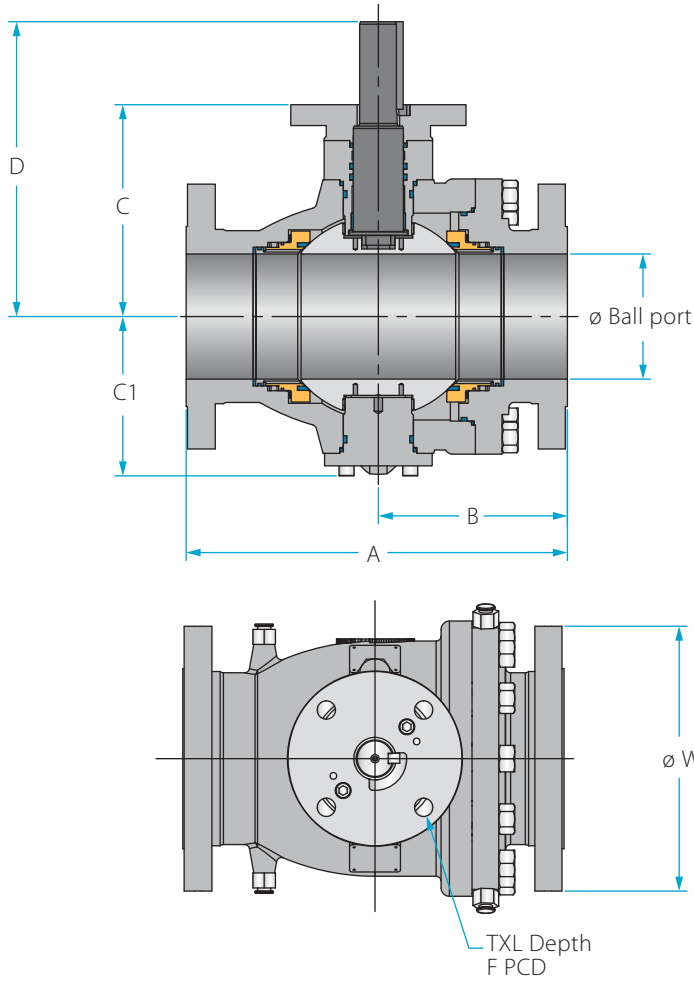
Preparation for actuation



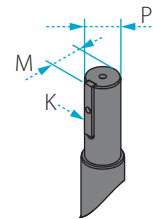
Std. port	Unit	Ball port	A		B		C	C1	D	W		M SQ	P SQ	H	S	F	TxL	Weight kg/ib		Kv / Cv		
			150	300	150	300				150	300							150	300	150	300	
DN50	mm	49.00	178.00	216.00	89.00	108.00	127.00	89.00	200.50	150.00	165.00	22.00	32.00	200.50	400.00	(F10)	102.00	11x15	12	14	399	362
2"	inch	1.93	7.00	8.50	3.50	4.25	5.00	3.50	7.90	5.90	6.50	0.86	1.26	7.90	15.75		4.02	(4 holes)	26	30	463	420
DN80	mm	74.00	203.00	282.00	101.50	141.50	148.00	117.00	226.50	190.00	210.00	22.00	32.00	226.50	610.00	(F12)	125.00	13x15	22	28	1075	911
3"	inch	2.91	8.00	11.12	4.00	5.57	5.83	4.60	8.91	7.48	8.26	0.86	1.26	8.91	24.02		4.92	(4 holes)	48	61	1247	1057
DN100	mm	100.00	229.00	305.00	114.50	152.50	171.00	139.00	305.50	230.00	255.00	27.00	35.00	305.50	916.00	(F14)	140.00	18x15	42	62	2146	1858
4"	inch	3.94	9.00	12.00	4.50	6.00	6.73	5.47	12.02	9.05	10.04	1.06	1.37	12.02	36.06		5.51	(4 holes)	93	138	2489	2156
DN150	mm	150.00	394.00	403.00	198.90	230.40	254.00	191.00	356.50	280.00	320.00	36.00	46.20	356.50	916.00	(F16)	165.00	22x25	119	148	4705	4649
6"	inch	5.90	15.50	15.88	7.83	9.07	10.00	7.52	14.03	11.02	12.60	1.41	1.81	14.03	36.06		6.50	(4 holes)	262	325	5458	5393

Size 8"-16" | DN200-DN400 | Class 150/300 | 81/82 Series

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	201.00	457.00	502.00	228.50	251.00	325.00	247.00	400.00	345.00	380.00	50.00	54.00	14.00	(F16)	165.00	22x25	167	248	9242	8823
8"	inch	7.91	18.00	19.75	9.00	9.88	12.79	9.72	15.75	13.58	14.96	1.96	2.12	0.55		6.50	(4 holes)	369	546	10721	10235
DN250	mm	252.00	533.00	502.00	263.00	280.50	353.00	297.00	448.00	405.00	445.00	50.00	54.00	14.00	(F25)	254.00	18x25	339	398	15306	14828
10"	inch	9.92	18.00	19.75	10.35	11.04	13.90	11.70	17.63	15.94	17.52	1.96	2.12	0.55		10.00	(8 holes)	747	878	17756	17202
DN300	mm	303.00	610.00	648.00	312.00	335.00	388.00	324.00	484.00	485.00	520.00	60.00	63.50	18.00	(F25)	254.00	18x25	519	597	23027	22340
12"	inch	11.93	24.00	25.50	12.28	13.18	15.27	12.75	19.05	19.10	20.47	2.36	2.50	0.70		10.00	(8 holes)	1145	1315	26714	25917
DN350	mm	334.00	686.00	762.00	343.00	381.00	425.00	372.00	555.00	535.00	585.00	72.00	78.00	20.00	(F30)	298.00	22x30	794	896	23027	22340
14"	inch	13.15	27.00	30.00	13.50	15.00	16.70	14.65	21.85	21.06	23.03	2.83	3.07	0.78		11.73	(8 holes)	1752	2012	32609	30936
DN400	mm	385.00	762.00	838.00	381.00	419.00	460.50	415.50	590.50	595.00	650.00	72.00	78.00	20.00	(F30)	298.00	22x30	1215	1344	38468	36678
16"	inch	15.15	30.00	33.00	15.00	16.50	18.13	16.36	23.25	23.42	25.60	2.83	2.50	0.78		11.73	(8 holes)	2681	3078	44627	42550

Trunnion Mounted Ball Valves

Trunnion

General

81/82
Series

**83
Series**

91/92
Series

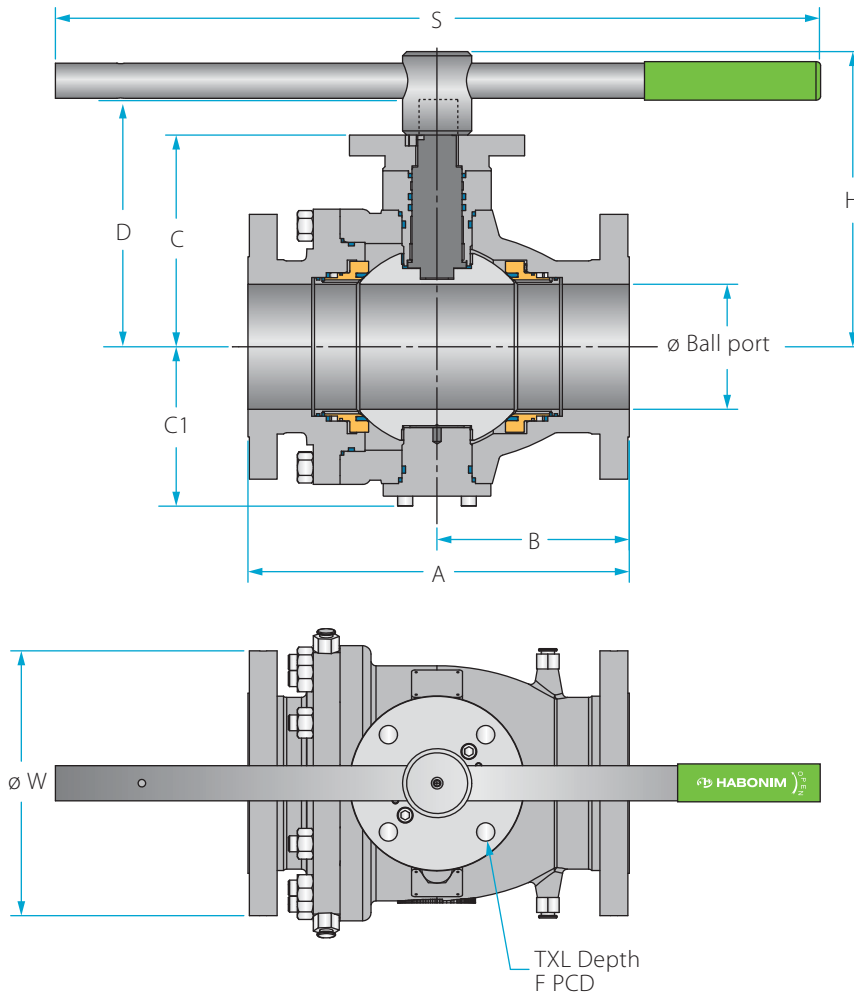
93/94
Series

95/96
Series

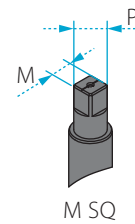
Ordering
code system

Size 2"-6" | DN50-DN150 | Class 600 | 83 Series

Valve dimensions



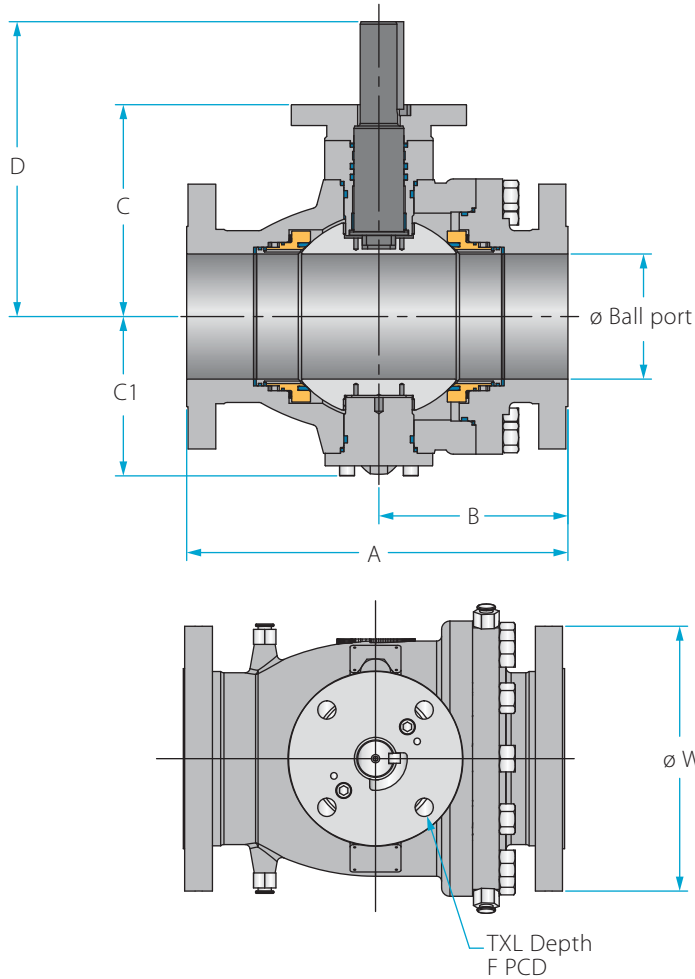
Preparation for actuation



Std. port	Unit	Ball port	A	B	C	C1	D	W	M SQ	P SQ	H	S	F	TxL	Weight kg/ib	Kv Cv
DN50	mm	49.00	292.00	146.00	148.50	123.50	182.50	165.00	27.00	35.00	200.50	400.00	(F12)	125.00	83	399
2"	inch	1.93	11.50	5.25	5.84	4.86	7.18	6.50	1.06	1.37	7.90	15.75		4.92	222	463
DN80	mm	74.00	356.00	178.00	198.50	152.70	253.00	210.00	36.00	48.20	247.00	610.00	(F16)	165.00	103	1075
3"	inch	2.91	14.00	7.00	7.81	6.00	9.96	8.26	1.41	1.81	9.70	24.02		6.50	276	1247
DN100	mm	100.00	432.00	216.00	220.00	177.00	259.00	275.00	46.00	60.20	310.00	916.00	(F16)	165.00	128	2146
4"	inch	3.94	17.00	8.50	8.66	6.96	10.20	10.82	1.81	2.37	12.20	36.06		6.50	343	2489
DN150	mm	150.00	559.00	279.50	282.50	214.50	428.00	355.00	46.00	60.20	385.00	916.00	(F16)	165.00	159	4705
6"	inch	5.90	22.00	11.00	11.10	8.45	16.85	13.97	1.81	2.37	15.15	36.06		6.50	350	5458

Size 8"-16" | DN200-DN400 | Class 600 | 83 Series

Valve dimensions



Std. port	Unit	Ball port	A	B	C	C1	D	W	P	M	K	F	TxL	Weight kg/ib	Kv Cv	
DN200	mm	201.00	660.00	330.00	312.00	263.00	417.00	420.00	72.00	76.50	20.00	(F25)	254.00	18x25	395	7733
8"	inch	7.91	25.98	13.00	12.28	10.35	16.42	16.53	2.83	3.01	0.78		10.00	(8 holes)	871	8971
DN250	mm	252.00	787.00	393.50	374.00	314.00	489.00	510.00	72.00	76.50	20.00	(F25)	254.00	18x25	490	15306
10"	inch	9.92	31.00	15.50	11.70	12.35	19.25	20.00	2.83	3.01	0.78		10.00	(8 holes)	1312	17756
DN300	mm	303.00	838.00	419.00	402.00	344.00	517.00	560.00	72.00	76.50	20.00	(F25)	254.00	18x25	608	23027
12"	inch	11.93	33.00	16.50	15.83	13.54	20.35	22.00	2.83	3.01	0.78		10.00	(8 holes)	1627	26714
DN350	mm	334.00	889.00	444.50	435.00	412.00	565.00	605.00	80.00	87.00	22.00	(F30)	298.00	22x30	754	23027
14"	inch	13.15	35.00	17.50	17.13	16.22	22.24	23.80	3.14	3.42	0.86		11.73	(8 holes)	2018	32609
DN400	mm	385.00	991.00	495.50	500.00	453.00	630.00	685.00	80.00	87.00	22.00	(F30)	298.00	22x30	935	38468
16"	inch	15.15	39.00	19.50	19.70	17.80	24.80	26.96	3.14	3.42	0.86		11.73	(8 holes)	2502	44627

Trunnion Mounted Ball Valves

Trunnion

General

81/82
Series

83
Series

91/92
Series

93/94
Series

95/96
Series

Ordering
code system

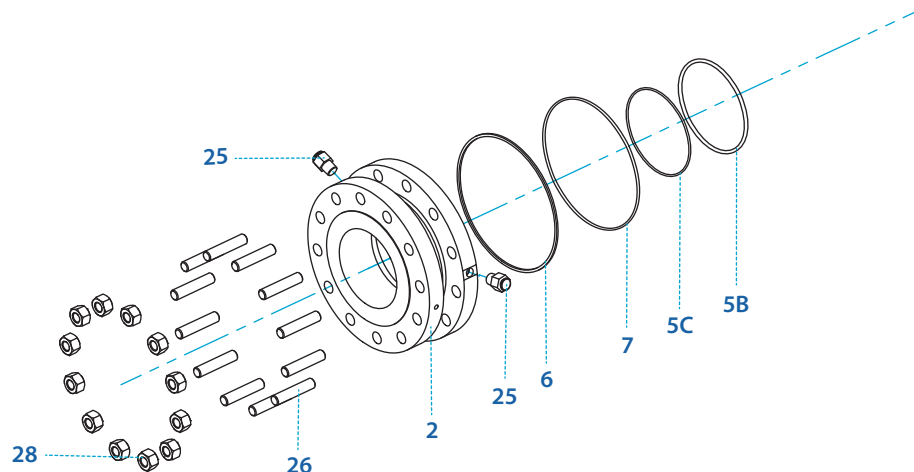
Components & materials

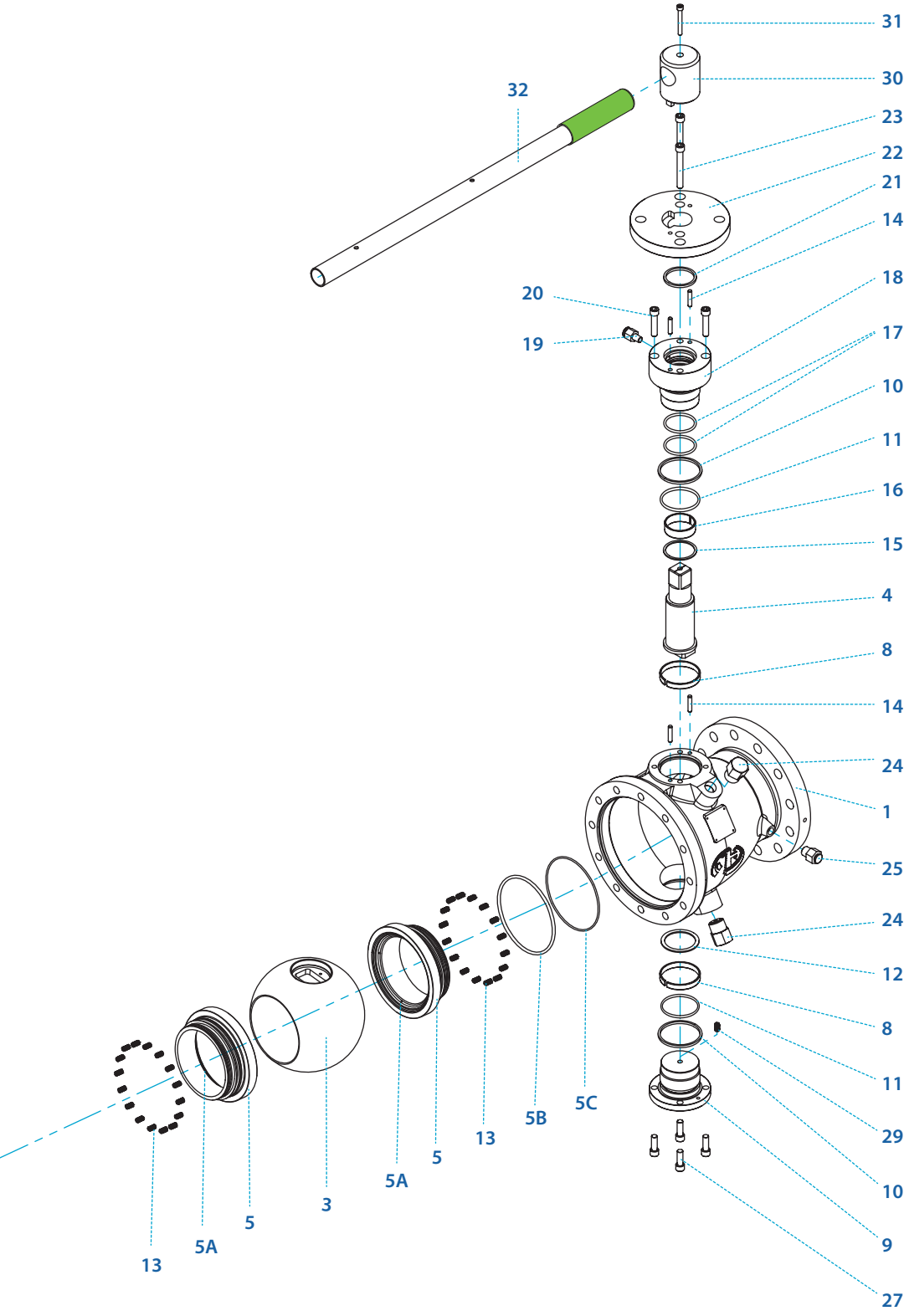
Item	Description	Material specification	Qty.
1	Body	A351 CF8M; A216 WCB; A351 CN7M; A494 M-35-1; A494 CW-12MW; A494 CX-2MW; A351 CK3MCuN; A995 CD3MN 4A; A995 CE3MN 5A	1
2	End	A351 CF8M; A216 WCB; A351 CN7M; A494 M-35-1; A494 CW-12MW; A494 CX-2MW; A351 CK3MCuN; A995 CD3MN 4A; A995 CE3MN 5A	1
3	Ball	A351 CF8M; B473 N08020; B164 N04400; B574 N06022; B574 N10276; B574 N06022; A479 S31254; A479 S31600; A479 S32750	1
4	Stem	A479 316L, A564 Gr 630 H1150D 17-4PH, B473 N08020, B164 N04400, B574 N06022, B574 N10276, A479 S31254, A479 S31803, A479 S32750	1
5*	Seat	A350 LF2+ENP, A182 F316N, A182 F6A	2
5A	Seat insert	PTFE, RPTFE, CF PTFE, PEEK, TFM, UHMWPE, VESPEL, PVDF,DEVLON, PCTFE (KEL-F)	2
5B	Seat O-ring	HNBR, VITON, PTFE	4
5C	Seat fire safe seal	Graphite	2
6*	Body seal	PTFE, RPTFE, TFM, UHMWPE, Graphite	1
7*	Stem thrust seal	PEEK, CF PEEK, PCTFE (KEL-F), TFM, CF PTFE	1
7a**	Anti-abrasion ring	PEEK, CF PEEK, PCTFE (KEL-F), TFM, CF PTFE	1
8	Stop pin	A582 303	1
9*	Stem seal	CF PTFE, TFM, Graphite	1
10	Follower	B783 316L	1
11	Disc spring	A693 631 17-7PH	2

Item	Description	Material specification	Qty.
12	Stem nut	A194 8M, EN3506-2 A4-80	1
13	Tab lock washer	A240 304	1
14	Wrench handle	A240 316L	1
14A	Stop plate	A240 430	1
14B	Wrench head	A351 CF8M	1
16	Wrench bolt	EN3506-1 A2-70/A4-80, A193 Gr B8/B8M	1
17	Sleeve	PVC	1
18	Bolt	A193 B8, DIN 912 A2-70	8-12
20	Anti static spring	A313 302	2
21	Anti static plunger	A479 304	2
23	Tag (not shown)	A167 304	1
24	Plug drain valve	316	2
25**	Seat grease fitting + check valve	316	2
26	Body stud	A320 L7, A193 B8M	12
27	External trunnion bolts	A320 L7, A193 B8M	4
28	Body nut	A320 L7, A193 B8M	12
29	Antistatic spring	INCONEL 750	1
30	Wrench head	S.ST 316	1
31	Wrench head bolt	A193 B8M, EN3506-1 A8-80	
32	Pipe handle	C.St Zink plate, A240 316L	1

* Repair kit components

** available from 6" size only





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Trunnion

General

81/82
Series

83
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**91/92
Series**

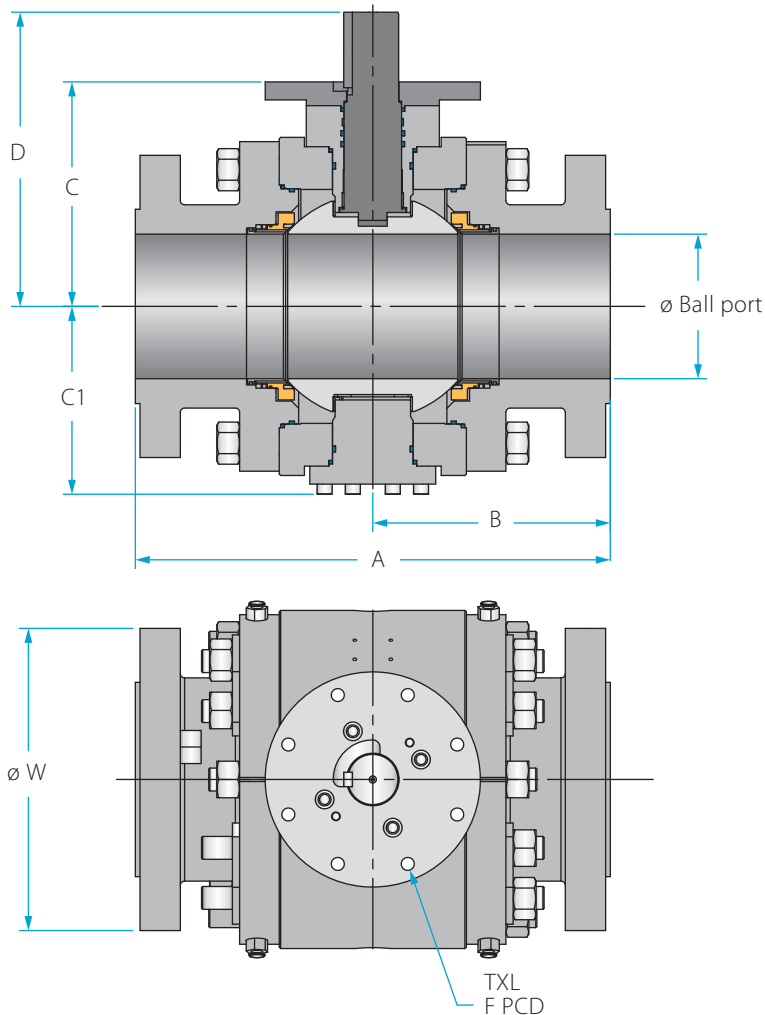
93/94
Series

95/96
Series

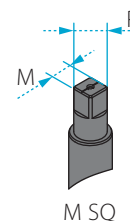
Ordering
code system

Size 2"-6" | DN50-DN150 | Class 150/300 | **91/92 Series**

Valve dimensions



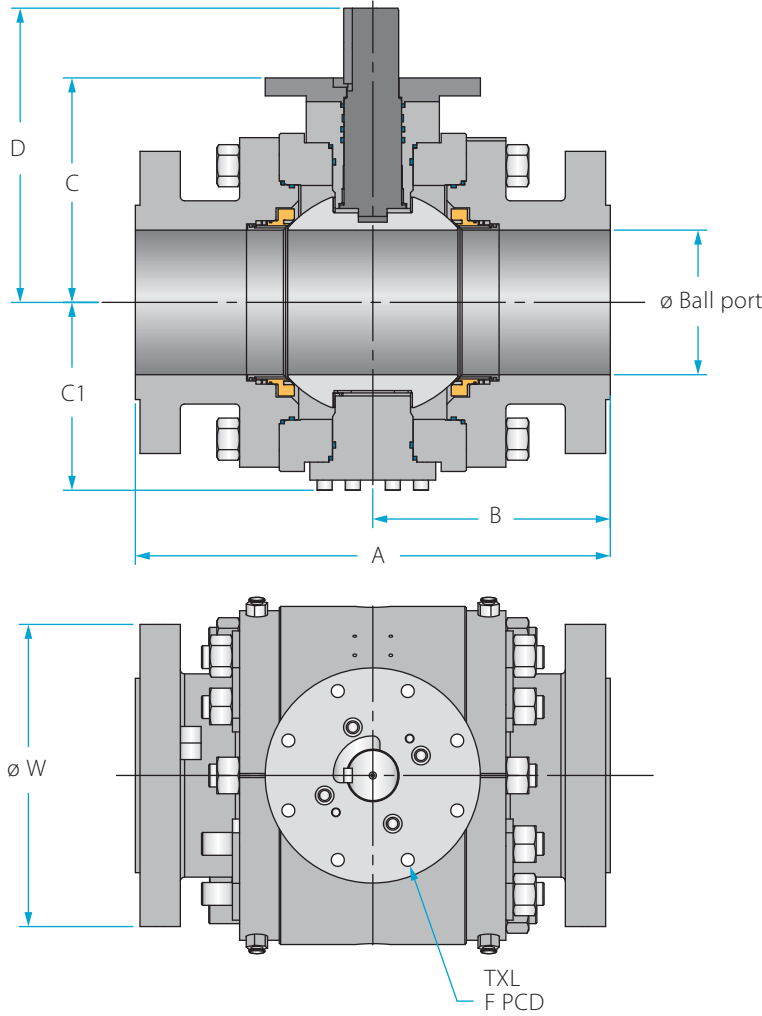
Preparation for actuation



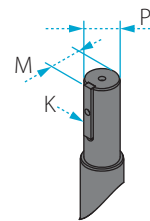
Std. port	Unit	Ball port	A		B		C	C1	D	W		P	M	K	F	TxL	Weight kg/ib		Kv / Cv		
			600	900	600	900				600	900						600	900	600	900	
DN50	mm	49.00	178.00	216.00	89.00	108.00	127.00	89.00	200.50	150.00	165.00	32.00	22.00	8.00	(F10)	125.00	11 X15	12	14	399	362
2"	inch	1.93	7.00	8.50	3.50	4.25	5.00	3.50	7.90	5.90	6.50	1.26	0.86	0.31		4.92	(4 holes)	26	30	463	420
DN80	mm	74.00	203.00	282.00	101.50	141.50	148.00	117.00	226.50	190.00	210.00	32.00	22.00	10.00	(F12)	165.00	13x25	22	28	1075	911
3"	inch	2.91	8.00	11.12	4.00	5.57	5.83	4.60	8.91	7.48	8.26	1.26	0.86	0.39		6.50	(4 holes)	48	61	1247	1057
DN100	mm	100.00	229.00	305.00	114.50	152.50	171.00	139.00	305.50	230.00	255.00	35.00	27.00	12.00	(F14)	165.00	18x25	42	62	2146	1858
4"	inch	3.94	9.00	12.00	4.50	6.00	6.73	5.47	12.02	9.05	10.04	1.37	1.06	0.47		6.50	(4 holes)	93	138	2489	2156
DN150	mm	150.00	394.00	403.00	198.90	230.40	254.00	191.00	356.50	280.00	320.00	46.20	36.00	18.00	(F16)	254.00	22x25	119	148	4705	4649
6"	inch	5.90	15.50	15.88	7.83	9.07	10.00	7.52	14.03	11.02	12.60	1.81	1.41	0.70		10.00	(8 holes)	262	325	5458	5393

Components & materials

Size 8"-16" | DN200-DN400 | Class 150/300 | 91/92 Series



Preparation for actuation



Std. port	Unit	Ball port	A		B		C		C1		D		W		P		M		K		F	TxL	Weight kg/lb		Kv / Cv		
			600	900	600	900	600	900	600	900	600	900	600	900	600	900	600	900	600	900			600	900	600	900	
DN200	mm	201.00	457.00	502.00	228.50	251.00	305.00	305.00	232.00	232.00	379.50	379.50	345.00	380.00	50.00	50.00	54.50	61.00	14.00	14.00	(F16)	165.00	22x25 (8 holes)	167	248	9242	8823
8"	inch	7.91	18.00	19.75	9.00	9.88	12.00	12.00	9.15	9.15	14.95	14.95	13.58	14.96	1.96	1.96	2.15	2.40	0.55	0.55		6.50		369	546	10721	10235
DN250	mm	252.00	533.00	502.00	263.00	280.50	338.00	359.00	289.00	299.00	433	454	405.00	445.00	55.00	60.00	60.10	65.50	14.00	18.00	(F25)	254.00	18x25 (8 holes)	339	398	15306	14828
10"	inch	9.92	18.00	19.75	10.35	11.04	13.30	14.10	11.37	11.77	17.05	17.9	15.94	17.52	2.16	2.36	2.40	2.57	0.55	0.70		10.00		747	878	17756	17202
DN300	mm	303.00	610.00	648.00	312.00	335.00	368.00	368.00	305.00	305.00	464	464	485.00	520.00	60.00	60.00	65.50	65.50	18.00	18.00	(F25)	254.00	18x25 (8 holes)	519	597	23027	22340
12"	inch	11.93	24.00	25.50	12.28	13.18	14.50	14.50	12.00	12.00	18.25	18.25	19.10	20.47	2.36	2.36	2.57	2.57	0.70	0.70		10.00		1145	1315	26714	25917
DN350	mm	334.00	686.00	762.00	343.00	381.00	400.00	400.00	330.00	330.00	520	520	535.00	585.00	72.00	72.00	78.00	78.00	20.00	20.00	(F30)	298.00	22x30 (8 holes)	794	896	23027	22340
14"	inch	13.15	27.00	30.00	13.50	15.00	15.75	15.75	13.00	13.00	20.5	20.5	21.06	23.03	2.83	2.83	3.07	3.07	0.78	0.78		11.73		1752	2012	32609	30936
DN400	mm	385.00	762.00	838.00	381.00	419.00	435.00	435.00	363.00	363.00	555	555	595.00	650.00	72.00	72.00	78.00	78.00	20.00	20.00	(F30)	298.00	22x30 (8 holes)	1215	1344	38468	36678
16"	inch	15.15	30.00	33.00	15.00	16.50	17.00	17.00	14.30	14.30	21.85	21.85	23.42	25.60	2.83	2.83	2.50	2.50	0.78	0.78		11.73		2681	3078	44627	42550

Trunnion Mounted Ball Valves

Trunnion

General

81/82
Series

83
Series

91/92
Series

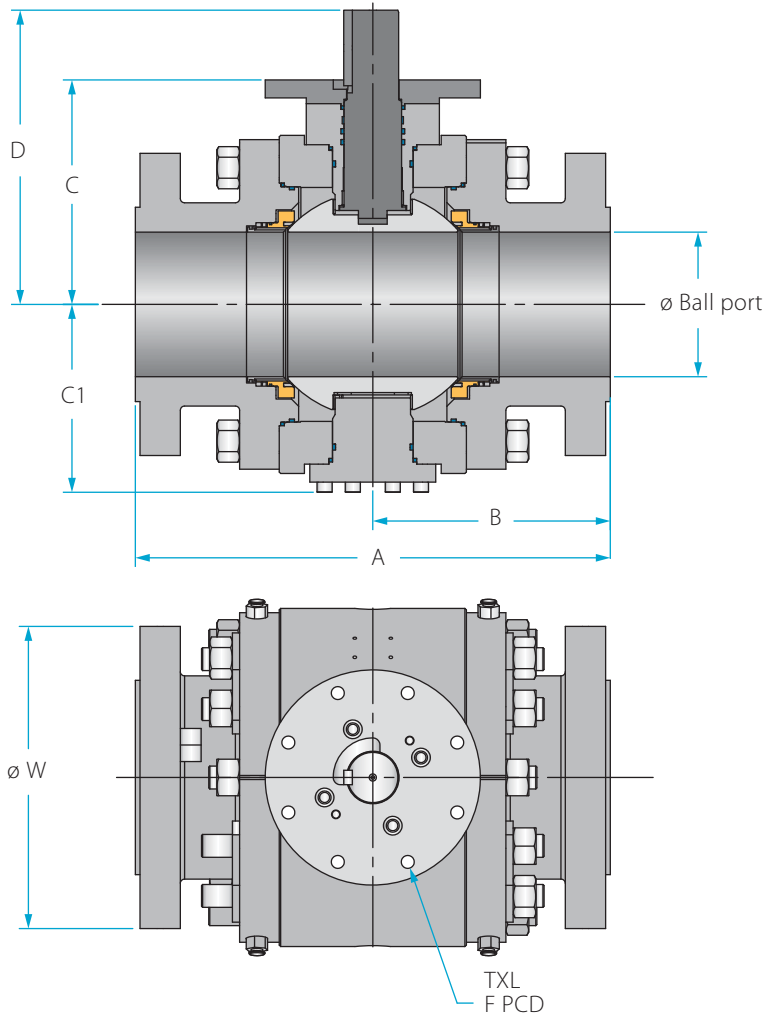
**93/94
Series**

95/96
Series

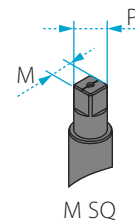
Ordering
code system

Size 2"-6" | DN50-DN150 | Class 600/900 | **93/94 Series**

Valve dimensions



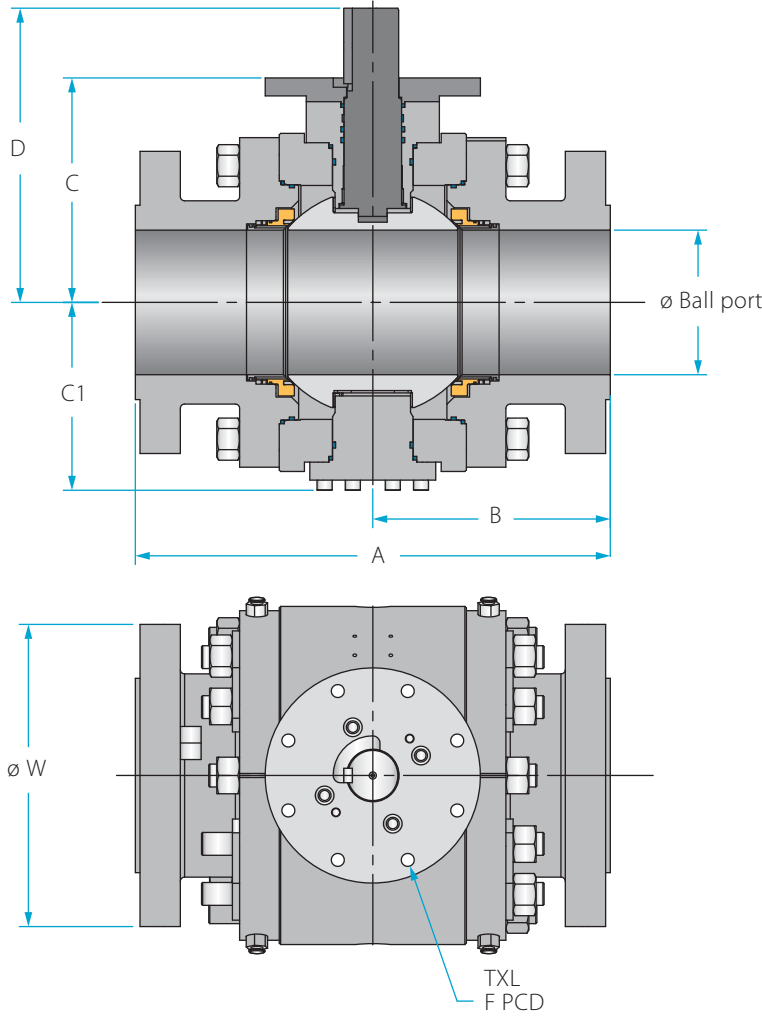
Preparation for actuation



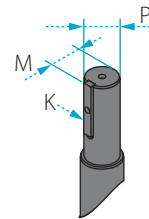
Std. port	Unit	Ball port	A		B		C		C1		D		W		P	M	K	F	TxL	Weight kg/lb			Kv / Cv	
			600	900	600	900	600	900	600	900	600	900	600	900						600	900			
DN50	mm	49.00	292.00	368.00	146.00	184.00	148.50	148.50	123.50	263.00	182.50	182.50	165.00	215.00	28.00	31.00	8.00	(F12)	125.00	13X15 (4 holes)	83	72	399	7322
2"	inch	1.93	11.50	14.50	5.25	7.25	5.84	5.85	4.86	4.86	7.18	7.18	6.50	8.46	1.10	1.22	0.31		4.92		222	193	463	8494
DN80	mm	74.00	356.00	381.00	178.00	190.50	214.00	214.00	152.70	152.70	253.00	237.50	210.00	240.00	35.00	37.20	10.00	(F16)	165.00	22x25 (4 holes)	103	102	1075	15306
3"	inch	2.91	14.00	15.00	7.00	7.50	8.42	8.42	6.00	6.01	9.96	9.35	8.26	9.45	1.38	1.46	0.39		6.50		276	273	1247	17756
DN100	mm	100.00	432.00	457.00	216.00	228.50	193.00	193.00	177.00	184.00	259.00	259.00	275.00	290.00	42.00	45.00	12.00	(F16)	165.00	22x25 (4 holes)	128	165	2146	23027
4"	inch	3.94	17.00	18.00	8.50	9.00	8.00	8.00	6.96	7.24	10.20	10.20	10.82	11.40	1.65	1.77	0.47		6.50		343	442	2489	26714
DN150	mm	150.00	559.00	610.00	279.50	305.00	353.00	368.00	214.50	224.00	428.00	463.00	355.00	380.00	60.00	63.50	18.00	(F25)	254.00	18x25 (8 holes)	159	270	4705	23027
6"	inch	5.90	22.00	24.00	11.00	12.00	13.90	14.50	8.45	8.82	16.85	18.23	13.97	14.96	2.36	2.50	0.70		10.00		350	724	5458	32609

Size 8"-16" | DN200-DN400 | Class 600/900 | 93/94 Series

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		
			600	900	600	900	600	900	600	900	600	900	600	900						600	900	600	900	
DN200	mm	201.00	660.00	737.00	660.00	368.50	312.00	307.00	263.00	263.00	417.00	403.00	420.00	470.00	72.00	76.50	20.00	(F25)	254.00	18x25	395	600	7733	7322
8"	inch	7.91	25.98	29.00	25.98	14.50	12.28	12.08	10.35	10.35	16.42	15.86	16.53	18.50	2.83	3.01	0.78		10.00	(8 holes)	871	1608	8971	8494
DN250	mm	252.00	787.00	838.00	787.00	419.00	374.00	384.00	314.00	326.00	489.00	499.00	510.00	545.00	72.00	76.50	20.00	(F25)	254.00	18x25	490	1000	15306	15306
10"	inch	9.92	31.00	33.00	31.00	16.50	11.70	15.12	12.35	12.83	19.25	19.65	20.00	21.46	2.83	3.01	0.78		10.00	(8 holes)	1312	2679	17756	17756
DN300	mm	303.00	838.00	965.00	838.00	482.50	402.00	419.00	344.00	361.00	517.00	544.00	560.00	610.00	72.00	76.50	20.00	(F25)	254.00	18x25	608	1450	23027	23027
12"	inch	11.93	33.00	38.00	33.00	19.00	15.83	16.50	13.54	14.21	20.35	21.40	22.00	24.00	2.83	3.01	0.78		10.00	(8 holes)	1627	3885	26714	26714
DN350	mm	334.00	889.00	1029.00	889.00	514.50	435.00	503.00	412.00	433.00	565.00	633.00	605.00	640.00	80.00	87.00	22.00	(F30)	298.00	22x30	754	2103	23027	23027
14"	inch	13.15	35.00	40.50	35.00	20.26	17.13	19.80	16.22	17.04	22.25	25.00	23.80	25.20	3.14	3.42	0.86		11.73	(8 holes)	2018	5635	32609	32609
DN400	mm	385.00	991.00	1130.00	991.00	565.00	500.00	604.00	453.00	520.00	630.00	734.00	685.00	705.00	80.00	87.00	22.00	(F30)	298.00	22x30	935	3050	38468	38468
16"	inch	15.15	39.00	44.50	39.00	22.24	19.70	23.78	17.80	20.47	24.80	28.90	26.96	27.76	3.14	3.42	0.86		11.73	(8 holes)	2502	8172	44627	44627

Trunnion Mounted Ball Valves

Trunnion

General

81/82
Series

83
Series

91/92
Series

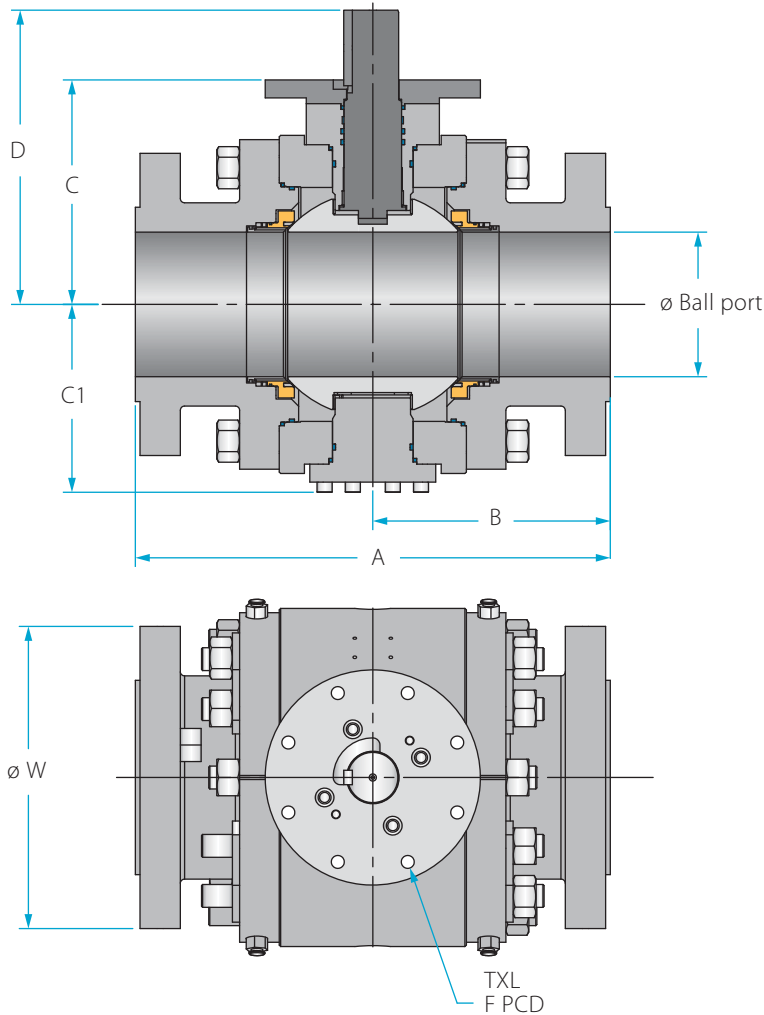
93/94
Series

**95/96
Series**

Ordering
code system

Size 2"-6" | DN50-DN150 | Class 1500/2500 | **95/96 Series**

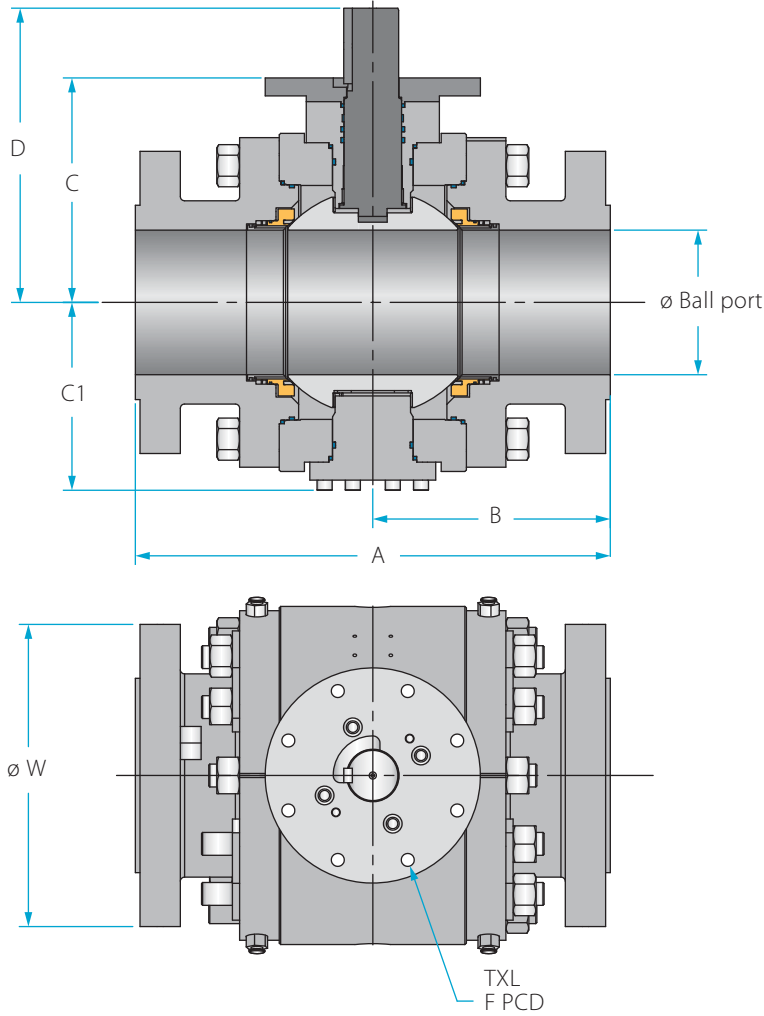
Valve dimensions



Std. port	Unit	Ball port	A		B		C	C1	D	W		P	M	K	F	TxL	Weight kg/ib		Kv / Cv		
			1500	2500	1500	2500				1500	2500						1500	2500	1500	2500	
DN50	mm	49.00	368.00	451.00	184.00	225.50	204.50	159.00	339.00	215.00	235.00	35.00	41.20	10.00	(F14)	140.00	18X15	90	179	9242	8823
2"	inch	1.93	14.50	17.75	7.24	8.87	8.05	6.26	13.35	8.46	9.25	1.38	1.62	0.39		5.51	(4 holes)	241	480	10721	10235
DN80	mm	74.00	470.00	578.00	235.00	289.00	214.00	189.00	288.50	265.00	305.00	42.00	45.00	12.00	(F16)	165.00	22x25	175	340	15306	14828
3"	inch	2.91	18.50	22.75	9.25	11.37	8.43	7.44	11.35	10.43	12.00	1.65	1.77	0.47		6.50	(4 holes)	469	911	17756	17202
DN100	mm	100.00	546.00	673.00	273.00	336.50	225.00	198.50	299.50	310.00	355.00	50.00	54.00	14.00	(F16)	165.00	22x25	330	646	23027	22340
4"	inch	3.94	21.50	26.50	10.75	13.24	8.86	7.81	11.80	12.20	13.97	1.96	2.12	0.55		6.50	(4 holes)	884	1731	26714	25917
DN150	mm	150.00	705.00	914.00	352.50	457.00	310.00	272.00	425.00	395.00	485.00	60.00	63.50	18.00	(F25)	254.00	18x25	627	1227	23027	22340
6"	inch	5.90	27.75	36.00	13.87	18.00	12.20	10.70	16.73	15.55	19.10	2.36	2.50	0.70		10.00	(8 holes)	1680	3288	32609	30936

Size 8"-12" | DN200-DN300 | Class 1500/2500 | 95/96 Series

Valve dimensions



Std. port	Unit	Ball port	A		B		C	C1	D	W		P	M	K	F	TxL	Weight kg/ib		Kv / Cv		
			1500	2500	1500	2500				1500	2500						1500	2500	1500	2500	
DN200	mm	201.00	832.00	1022.00	416.00	511.00	425.00	273.00	540.00	485.00	550.00	72.00	76.50	20.00	(F25)	254.00	18x25	1000	2330	9242	8823
8"	inch	7.91	32.75	40.25	16.37	20.12	16.73	10.75	21.25	19.10	21.65	2.83	3.01	0.78		10.00	(8 holes)	268	6242	10721	10235
DN250	mm	252.00	991.00	1270.00	495.50	635.00	582.00	374.00	712.00	585.00	675.00	80.00	87.00	22.00	(F30)	298.00	22x30	1900	4427	15306	14828
10"	inch	9.92	39.00	50.00	19.50	25.00	22.91	14.72	28.00	23.03	26.57	3.14	3.42	0.86		11.73	(8 holes)	5090	11860	17756	17202
DN300	mm	303.00	1130.00	1422.00	565.00	711.00	797.00	512.00	927.00	675.00	760.00	80.00	87.00	22.00	(F30)	298.00	22x30	3610	8000	23027	22340
12"	inch	11.93	44.50	56.00	22.24	28.00	31.37	20.16	36.50	26.57	29.92	3.14	3.42	0.86		11.73	(8 holes)	9670	21434	26714	25917

Trunnion Mounted Ball Valves

Trunnion

General

81/82
Series

83
Series

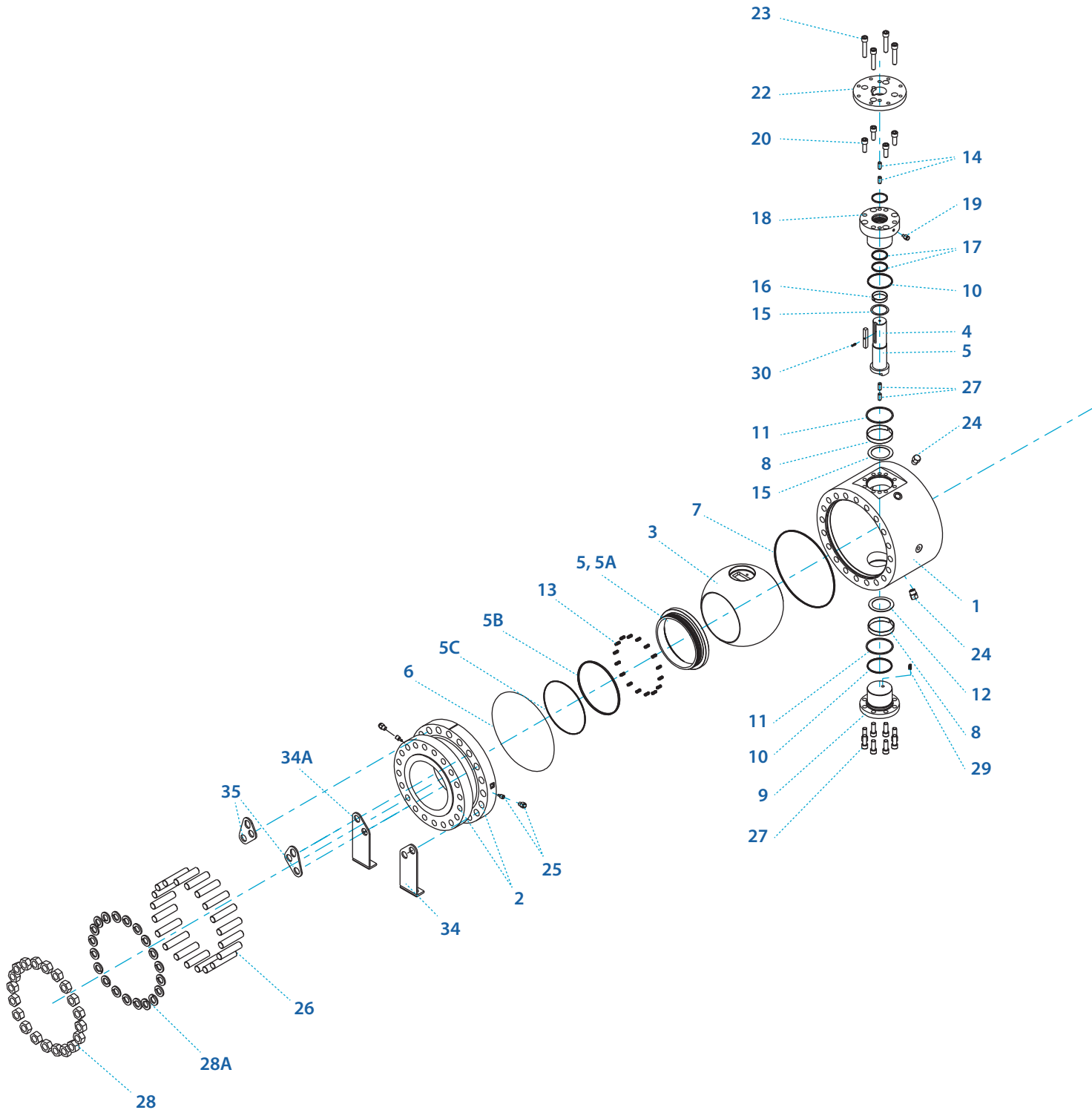
91/92
Series

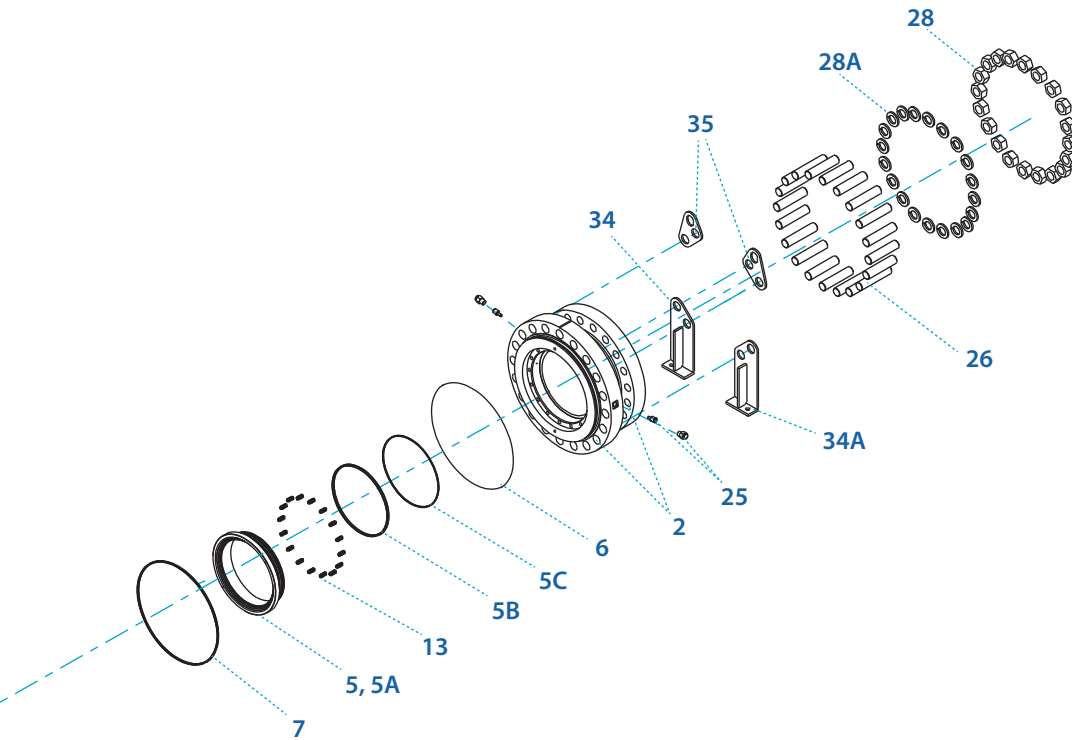
93/94
Series

95/96
Series

Ordering
code system

Components & materials





Item	Description	Material specification	Qty.
1	Body	A182 F316, A105 , A350 LF2	1
2	End	A182 F316, A105 , A350 LF2	2
3	Ball	A350 LF2+ENP, A105+ENP, A182 F6A, A182 316N, A351 CF8M	1
4	Stem	A564 Gr 630, H1150D 17-4PH, A479 316L, A350 LF2+ENP, A182 F6A, A479 XM19, A29 4140+ENP, A276 316	1
5*	Seat	A350 LF2+ENP, A182 F316N, A182 F6A	2
5A	Seat insert	PEEK, VESPEL, PVDF, DEVLON, PCTFE (KEL-F)	2
5B	Seat O-ring	HNBR, VITON, PTFE	4
5C	Seat fire safe seal	Graphite	2
6*	Body fire safe seal	Graphite	1
7*	Body seal	HNBR, VITON, PTFE	1
8	Ball bearing	316L+PTFE	2
9	External trunnion	A350 LF2+ENP, A479 316L	1
10*	Gland plate & external trunnion fire safe seal	Graphite	2
11*	Gland plate & external trunnion seal	HNBR, VITON, PTFE LIP SEAL	2
12	Lower thrust washer	316L+PTFE	1
13	Seat spring	INCONEL 750	32

Item	Description	Material specification	Qty.
14	Gland pin	ST.37	4
15	Stem thrust seal	316L+PTFE	1
16	Gland plate bearing	316L+PTFE	1
17	Stem o-ring	HNBR, VITON, PTFE	2
18	Gland plate	A350 LF2+ENP, A479 316L, A105 +ENP	1
19	Stem grease fitting	316	1
20	Lower gland bolts	A320 L7, A193 B8M, C.St 8.8 ZP	2
21*	Stem gasket	Graphite	1
22	Iso plate	A350 LF2, A479 316L, A105	1
23	Upper gland bolts	A320 L7, A193 B8M, C.St 8.8 ZP	2
24	Plug drain valve	316	2
25**	Seat grease fitting + check valve	316	2
26	Body stud	A320 L7, A193 B8M, C.St 8.8 ZP	12
27	External trunnion bolts	A320 L7, A193 B8M, C.St 8.8 ZP	4
28	Body nut	A320 L7, A193 B8M, C.St 8.8 ZP	12
29	Antistatic spring	INCONEL 750	1
30	stem key	A29 4140+ENP, ST.37	1

* Repair kit components

** available from 6" size only

Trunnion Mounted Ball Valves

Trunnion

General

81/82
Series

83
Series

91/92
Series

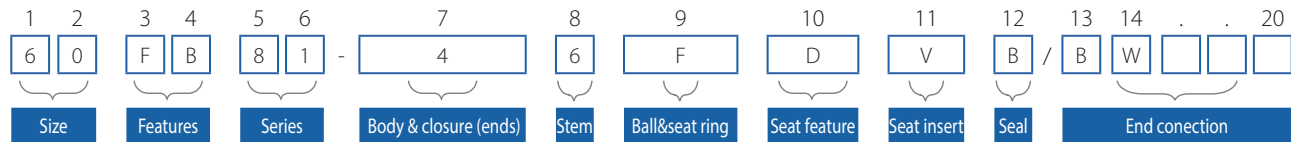
93/94
Series

94/95
Series

Ordering
code system

Ordering code system

The HABONIM Trunnion mounted ball valves identification code



Size		
Code	inch	mm
20	2"	50
30	3"	80
40	4"	100
50	5"	125
60	6"	150
80	8"	200
A0	10"	250
A2	12"	300
A4	14"	350
A6	16"	400

Design	
F	Fire safe
B	Full bore
2 Piece Series	
81	ANSI #150
82	ANSI #300
83	ANSI #600
3 Piece Series	
91	ANSI #150
92	ANSI #300
93	ANSI #600
94	ANSI #900
95	ANSI #1500
96	ANSI #2500

Body & closure (ends)	
4	C. Steel A216 WCB
R	C. Steel A352 LC1
9	C. Steel A352 LCB
6	S. Steel A351 CF8M
7	Monel A494 M-35-1
A	Alloy-20 A351 CN7M
C	Alloy-C276 A494 CW-12MW
W	Alloy-C22 A494 CX-2MW
D	Duplex A995 CD3MN 4A
K	Super Duplex A995 CE3MN 5A
S	254SMO A351 CK3MCuN
F	C. Steel A350 LF2+ENP

Stem	
6	S. Steel A479 316\316L
M	17-4PH A564 Gr 630 H1150D
Z	Inconel 718 B637 N07718
7	Monel B164 N04400
A	Alloy-20 B473 N08020
C	Alloy-C276 B574 N10276
W	Alloy-C22 B574 N06022
D	Duplex A479 S31803
K	Super Duplex A479 S32750
S	254SMO A479 S31254
F	C. Steel A350 LF2+ENP
Q	S. Steel A182 F6A

Ball & seat ring	
F	C. Steel A350 LF2+ENP
6	S. Steel A479 316\316L
Q	S. Steel A182 F6A
Z	Inconel 718 B637 N07718
7	Monel B164 N04400
A	Alloy-20 B473 N08020
C	Alloy-C276 B574 N10276
W	Alloy-C22 B574 N06022
D	Duplex A479 S31803
K	Super Duplex A479 S32750
S	254SMO A479 S31254

Seat feature	
D	Double Piston Effect (DPE)
S	Single Piston Effect (SPE)
C	DPE & SPE Combination

Seat insert	
K	CF PEEK
L	Virgin PEEK
P	CF PTFE
V	Devlon

Seal	
B	HNBR
V	Viton

End Connection	
Flanged	
150	Flanged ANSI #150
300	Flanged ANSI #300
600	Flanged ANSI #600
900	Flanged ANSI #900
PN...	Flanged DIN PN 16, 40, 64, 100...
Flanged RTJ	
600RTJ	Flanged ANSI B16.5 class 600 RTJ
900RTJ	Flanged ANSI B16.5 class 900 RTJ
Welded ends	
XBW*	Buttweld sch 40
XBW80	Buttweld sch 80
XBW160	Buttweld sch 160

* By default BW calls for BW schedule 40 Other end connections are available upon request

In some applications the available options above are limited to specific sizes please consult with Habonim for details



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MAXMARK Trunnion mounted ball valves 01/16

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