

# 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

## 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.

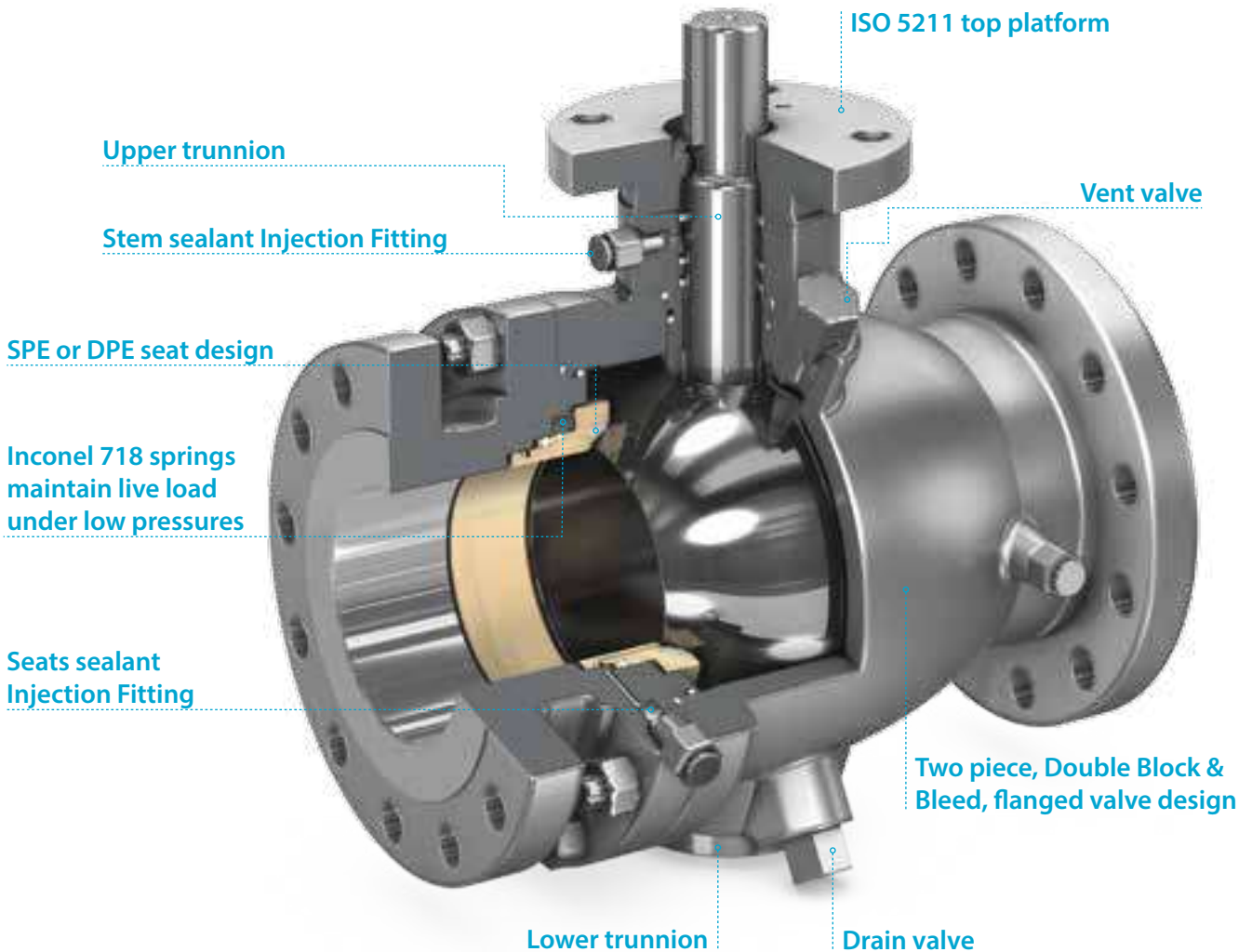
## Technical summary

<b>Size range</b>	2" - 16" (DN50 - DN400)
<b>Series in range</b>	<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>
<b>Pressure range</b>	Vacuum 10 <sup>-6</sup> Tor to 414 bar (6000 psi)
<b>Temperature range</b>	-60 °C (-76 °F) to 260 °C (418 °F).
<b>Materials</b>	Carbon Steel A350 LF2, A105, A216 WCB, Stainless Steel 316/316L and more
<b>End connections</b>	Extended weld end, flanged

## Standards of compliance

<b>Factory certification</b>	ISO 9001-2008	Quality management system
<b>Valve design and tests</b>	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 <sub>2</sub> S
	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
<b>Certifications</b>	PED 2014/68/EU Module H	Pressure equipment directive
	ATEX 2014/34/EU	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)
<b>Documentation</b>	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

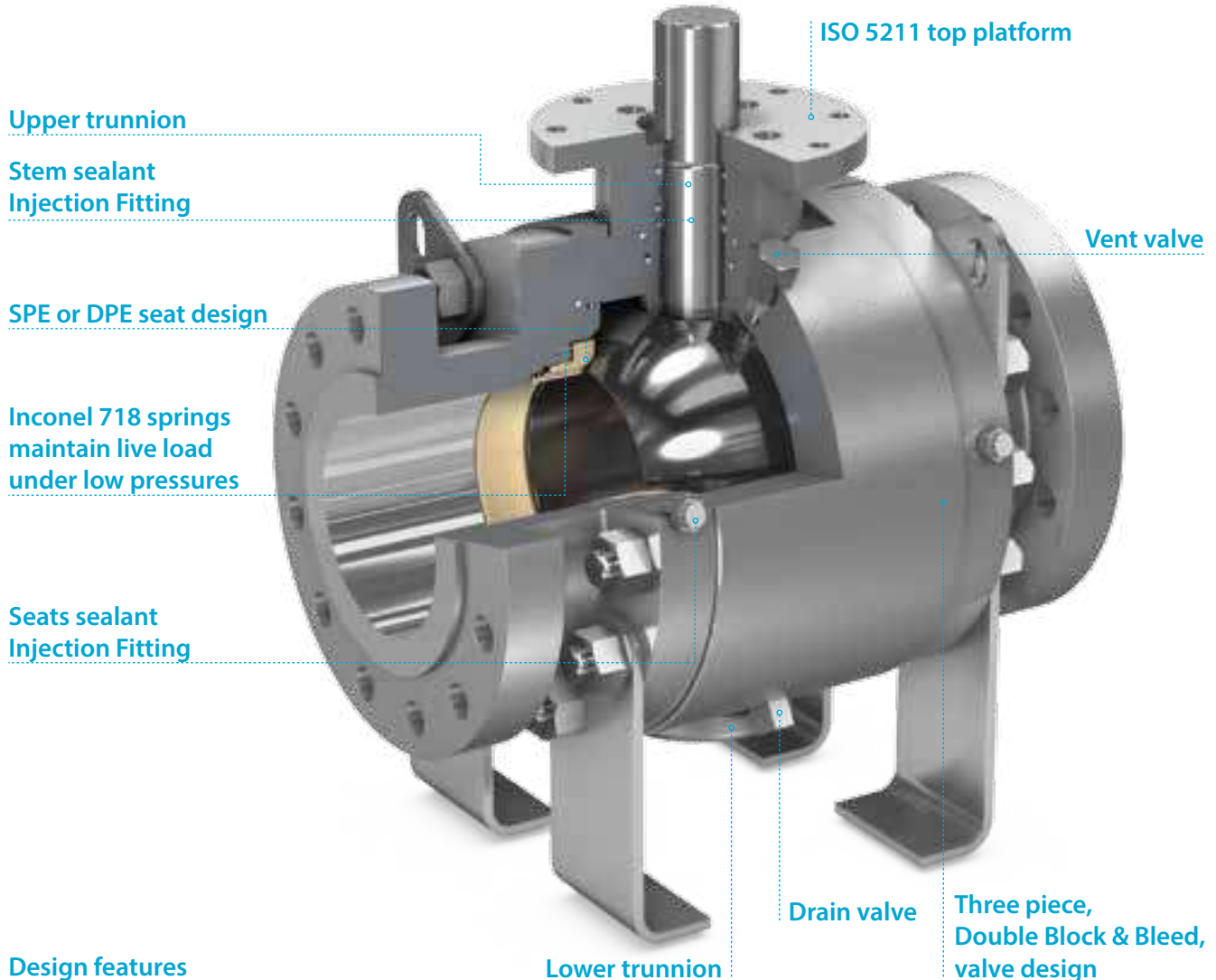
91/92  
Series

93/94  
Series

95/96  
Series

Ordering  
code system

## Three piece



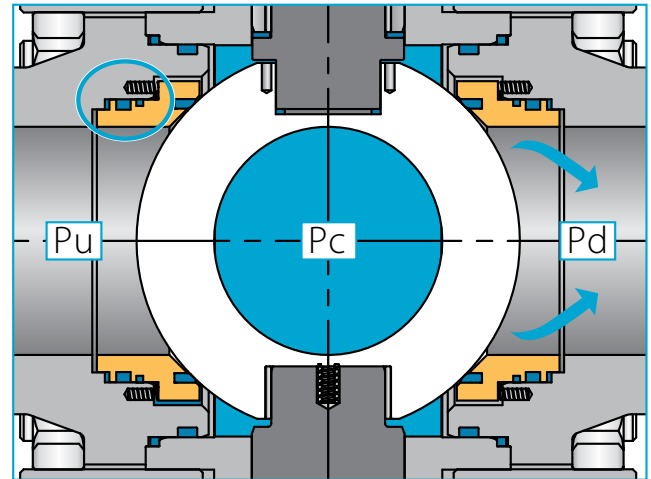
## Design features

- 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)

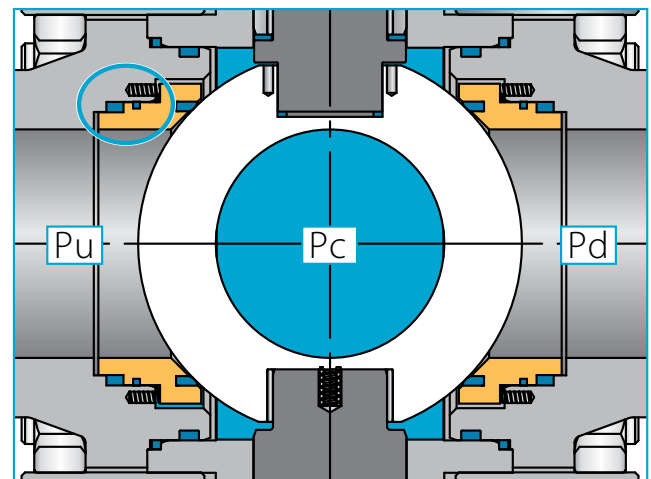
A trunnion valve seat design that allows automatic relief to the pipe line from excessive pressure built up inside the body cavity. With the SPE design the trunnion valve only seals on the upstream side.



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

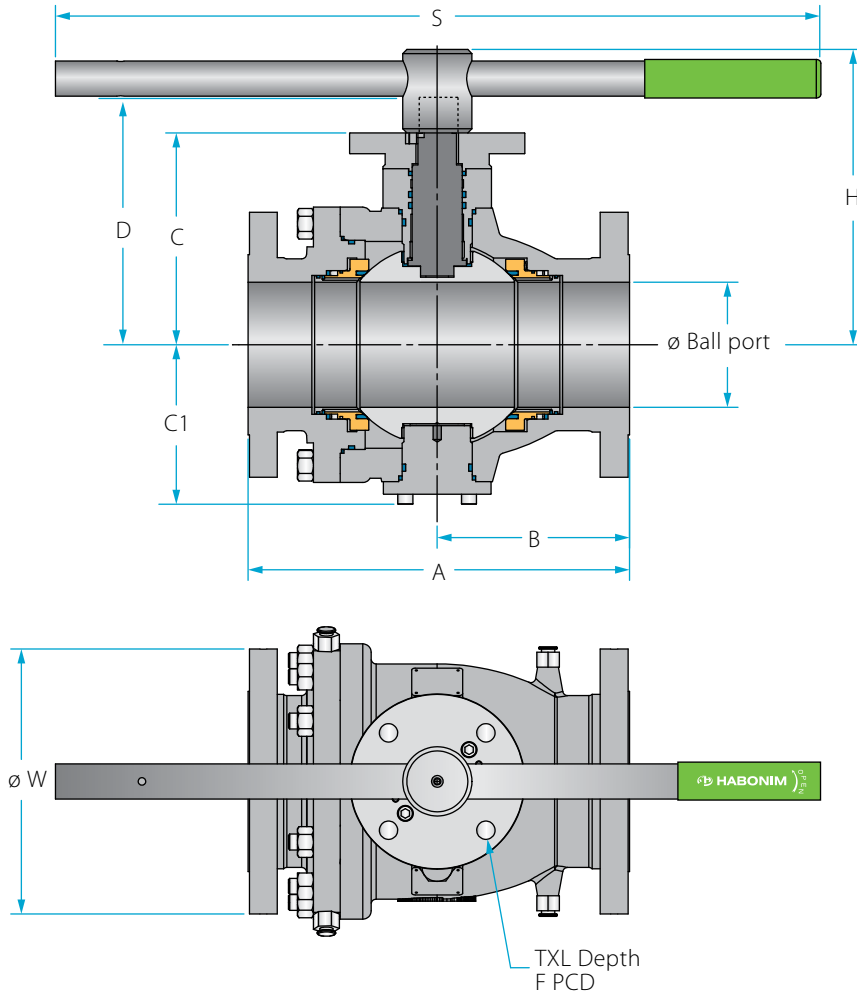
93/94 Series

95/96 Series

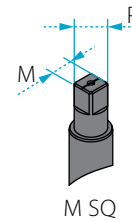
Ordering code system

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

### Valve dimensions



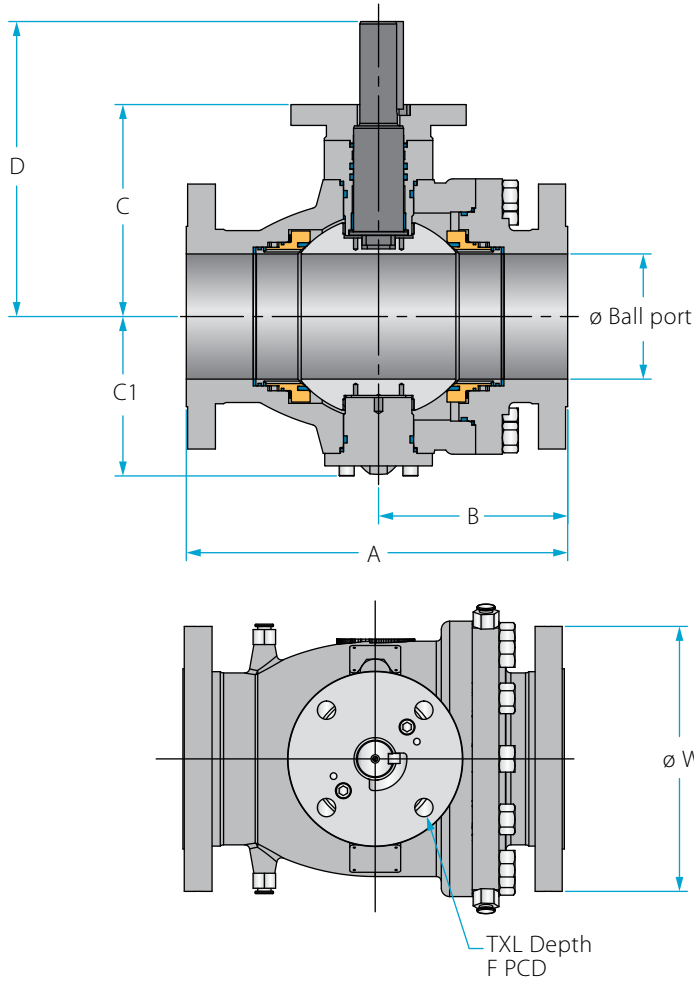
### Preparation for actuation



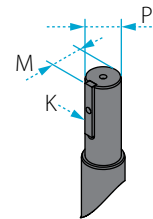
Std. port	Unit	Ball port	A		B		C	C1	D	W		M SQ	P SQ	H	S	F	TxL	Weight kg/ib		Kv / Cv		
			150	300	150	300				150	300							150	300	150	300	
DN50	mm	49.00	178.00	216.00	89.00	108.00	127.00	91.50	144.50	150.00	165.00	17.00	22.00	196.00	401.00	(F10)	102.00	11x15	19	23	400	363
2"	inch	1.93	7.01	8.50	3.50	4.25	5.00	3.60	5.69	5.91	6.50	0.67	0.87	7.72	15.79		4.02	(4 holes)	42	51	463	420
DN80	mm	74.00	203.00	283.00	101.50	128.00	148.00	117.00	172.00	190.00	210.00	22.00	32.00	223.00	610.00	(F12)	125.00	13x15	33	44	1125	952
3"	inch	2.91	7.99	11.14	4.00	5.04	5.83	4.61	6.77	7.48	8.27	0.87	1.26	8.78	24.02		4.92	(4 holes)	73	97	1300	1100
DN100	mm	100.00	229.00	305.00	114.50	140.50	171.00	139.00	198.50	230.00	255.00	27.00	35.00	247.50	610.00	(F14)	140.00	18x15	49	69	2154	1860
4"	inch	3.94	9.02	12.00	4.51	5.53	6.73	5.47	7.81	9.06	10.04	1.06	1.38	9.74	24.02		5.51	(4 holes)	108	152	2490	2150
DN150	mm	150.00	394.00	457.00	185.00	230.40	254.00	191.00	290.50	280.00	320.00	36.00	46.20	356.50	916.00	(F16)	165.00	22x25	133	166	4723	4628
6"	inch	5.91	15.51	17.99	7.28	9.07	10.00	7.52	11.44	11.02	12.60	1.42	1.82	14.04	36.06		6.50	(4 holes)	293	366	5460	5350

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/ib		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	405.50	345.00	380.00	50.00	54.00	14.00	(F16)	165.00	222	262	9273	8737	
8"	inch	7.91	17.99	19.76	9.00	9.88	12.80	9.72	15.96	13.58	14.96	1.97	2.13	0.55		6.50	(4 holes)	489	578	10720	10100
DN250	mm	252.00	533.00	568.00	270.00	287.50	353.00	297.00	430.00	405.00	445.00	50.00	54.00	14.00	(F25)	254.00	358	424	15224	14792	
10"	inch	9.92	20.98	22.36	10.63	11.32	13.90	11.69	16.93	15.94	17.52	1.97	2.13	0.55		10.00	(8 holes)	789	935	17600	17100
DN300	mm	303.00	610.00	648.00	298.00	313.00	388.00	324.00	468.50	485.00	520.00	60.00	63.50	18.00	(F25)	254.00	527	613	23096	22404	
12"	inch	11.93	24.02	25.51	11.73	12.32	15.28	12.76	18.44	19.09	20.47	2.36	2.50	0.71		10.00	(8 holes)	1162	1351	26700	25900
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	794	896	27940	26729	
14"	inch	13.15	27.01	30.00	13.50	15.00	16.73	14.65	21.85	21.06	23.03	2.83	3.07	0.79		11.73	(8 holes)	1750	1975	32300	30900
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	1215	1344	38536	36763	
16"	inch	15.16	30.00	32.99	15.00	16.50	18.13	16.36	23.25	23.43	25.59	2.83	3.07	0.79		11.73	(8 holes)	2679	2963	44550	42500

# Trunnion Mounted Ball Valves

## Trunnion

General

81/82  
Series

**83  
Series**

91/92  
Series

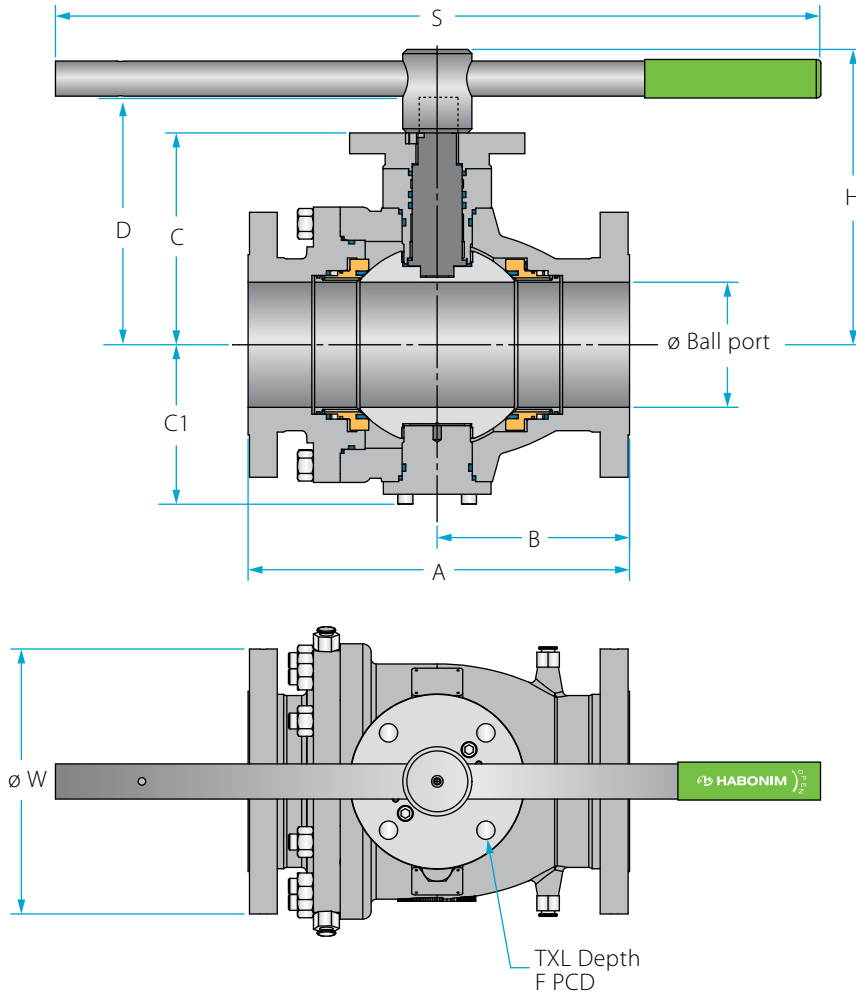
93/94  
Series

95/96  
Series

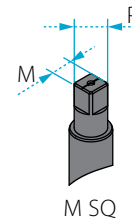
Ordering  
code system

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

### Valve dimensions



### Preparation for actuation

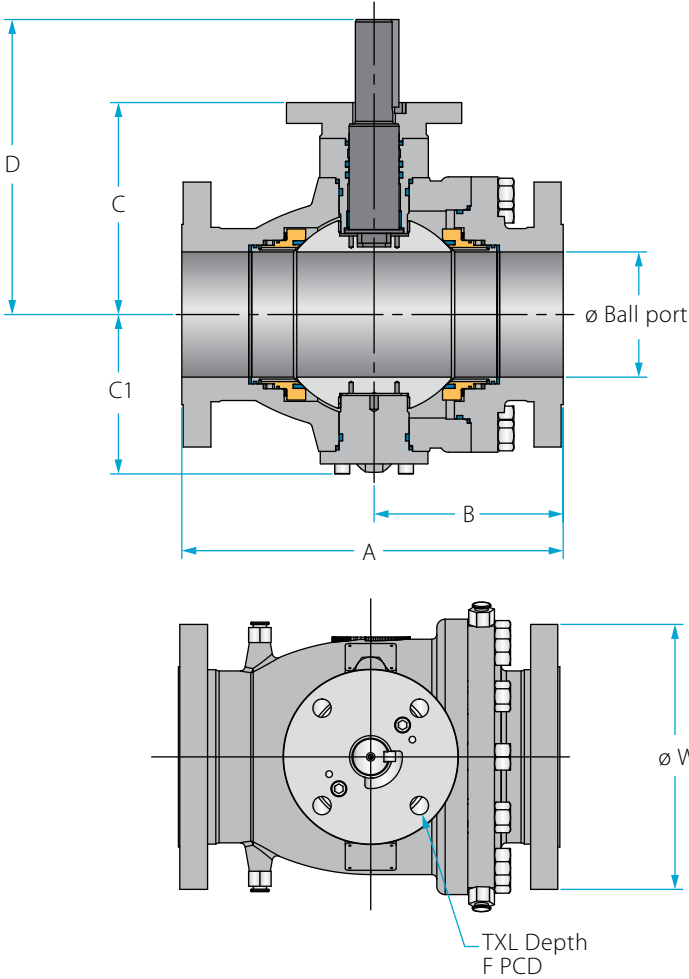


Std. port	Unit	Ball port	A	B	C	C1	D	W	M SQ	P SQ	H	S	F	TxL	Weight kg/ib	Kv Cv	
DN50	mm	49.00	292.00	131.00	144.00	119.00	168.50	165.00	22.00	28.00	219.50	401.00	(F12)	125.00	13X15 (4 holes)	35	329
2"	inch	1.93	11.50	5.16	5.67	4.69	6.63	6.50	0.87	1.10	8.64	15.79	4.92			77	380
DN80	mm	74.00	356.00	161.00	191.00	160.00	215.00	210.00	22.00	28.00	266.00	610.00	(F14)	140.00	18X24 (4 holes)	71	874
3"	inch	2.91	14.02	6.34	7.52	6.30	8.46	8.27	0.87	1.10	10.47	24.02	5.51			157	1010
DN100	mm	100.00	432.00	216.00	217.00	184.00	246.50	275.00	27.00	36.00	316.50	916.00	(F16)	165.00	22X25 (4 holes)	123	1557
4"	inch	3.94	17.01	8.50	8.54	7.24	9.70	10.83	1.06	1.42	12.46	36.06	6.50			271	1800
DN150	mm	150.00	559.00	278.00	282.50	214.50	320.50	355.00	36.00	48.20	385.00	916.00	(F16)	165.00	22X25 (4 holes)	244	3893
6"	inch	5.91	22.01	10.94	11.12	8.44	12.62	13.98	1.42	1.90	15.16	36.06	6.50			538	4500

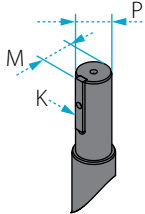


Size 8"-16" | DN200-DN400 | Class 600 | 83 Series

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	
DN200	mm	201.00	660.00	330.00	312.00	263.00	409.00	420.00	72.00	76.50	20.00	(F25)	254.00	18x25	412	7742
8"	inch	7.91	25.98	12.99	12.28	10.35	16.10	16.54	2.83	3.01	0.79		10.00	(8 holes)	908	8950
DN250	mm	252.00	787.00	400.00	374.00	310.00	489.50	510.00	72.00	76.50	20.00	(F25)	254.00	18x25	665	12543
10"	inch	9.92	30.98	15.75	14.72	12.20	19.27	20.08	2.83	3.01	0.79		10.00	(8 holes)	1466	14500
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	804	19809
12"	inch	11.93	32.99	16.50	15.83	13.54	20.35	22.05	2.83	3.01	0.79		10.00	(8 holes)	1772	22900
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	22x35	1170	24739
14"	inch	13.15	35.00	17.50	17.13	16.22	22.24	23.82	3.15	3.43	0.87		11.73	(8 holes)	2579	28600
DN400	mm	385.00	991.00	515.00	500.00	442.00	636.00	686.00	98.00	104.00	28.00	(F30)	298.00	22x35	1613	33735
16"	inch	15.16	39.02	20.28	19.69	17.40	25.04	27.01	3.86	4.10	1.10		11.73	(8 holes)	3556	39000

# Trunnion Mounted Ball Valves

## Trunnion

General

81/82  
Series

83  
Series

91/92  
Series

93/94  
Series

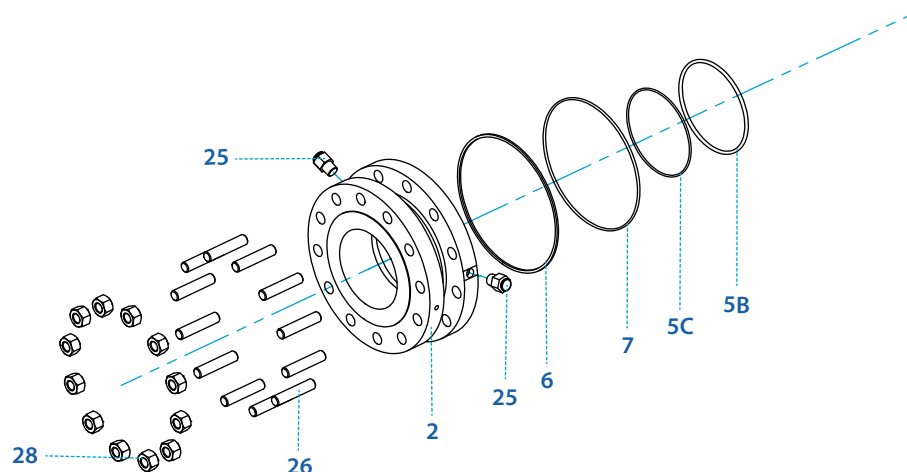
95/96  
Series

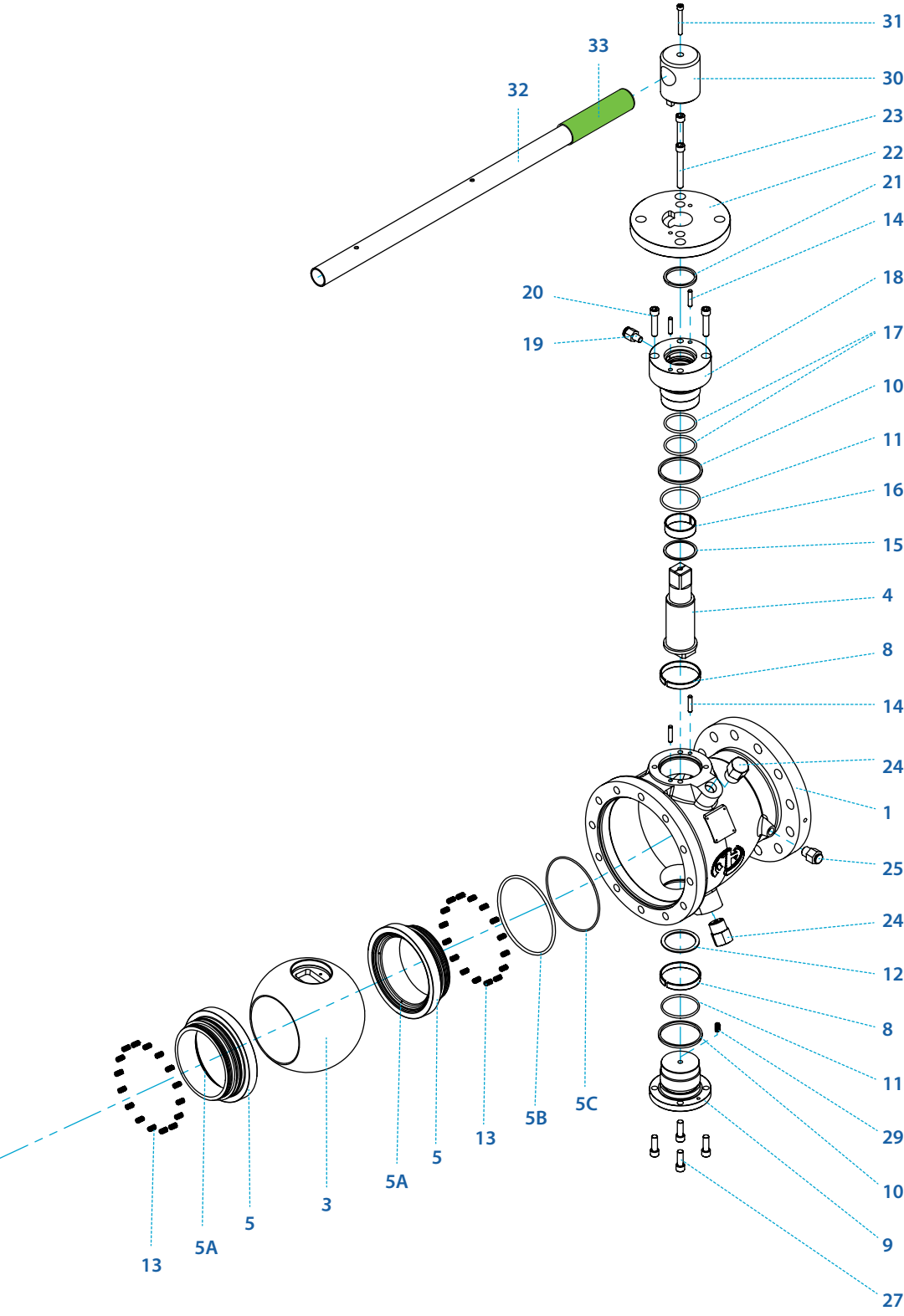
Ordering  
code system

## Components & materials

Item	Description	Material specification	Qty.	Spare	Item	Description	Material specification	Qty.	Spare
1	Body	A182 F316, A105, A350 LF2	1		16	Gland plate bearing	316L+PTFE	1	
2	End	A182 F316, A105, A350 LF2	2		17	Stem o-ring	HNBR, VITON, PTFE	2	
3	Ball	A350 LF2+ENP, A105+ENP, A182 F6A, A182 316N, A351 CF8M	1		18	Gland plate	A350 LF2+ENP, A479 316L	1	
4	Stem	A564 Gr 630, H1150D 17-4PH, A479 316L, A350 LF2+ENP, A182 F6A, A479 XM19, A29 4140+ENP, A276 316	1		19	Stem grease fitting	S.ST	1	
5*	Seat	A350 LF2+ENP, A182 F316N, A182 F6A	2	S	20	Lower gland bolts	A320 L7, A193 B8M, C.St 8.8 ZP	2	
5A	Seat insert	CF PTFE, PEEK, DEVLON, CF PEEK	2		21*	Stem gasket	Graphite	1	S
6*	Body fire safe seal	Graphite	1	S	22	Iso plate	A350 LF2+ENP, A479 316L	1	
7*	Body seal	HNBR, VITON, PTFE	1	S	23	Upper gland bolts	A320 L7, A193 B8M, C.St 8.8 ZP	2	
8	Ball bearing	316L+PTFE	2		24	Plug drain valve	S.ST	2	
9	External trunnion	A350 LF2+ENP, A479 316L	1		25**	Seat grease fitting + check valve	S.ST	2	
10*	Gland plate & external trunnion fire safe seal	Graphite	2	S	26	Body stud	A320 L7, A193 B8M, C.St 8.8 ZP	12	
11*	Gland plate & external trunnion seal	HNBR, VITON, PTFE LIP SEAL	2	S	27	External trunnion bolts	A320 L7, A193 B8M, C.St 8.8 ZP	4	
12	Lower thrust washer	316L+PTFE	1		28	Body nut	A194 GR-7, A193 GR-8M, C.ST 8.8 ZP	12	
13	Seat spring	INCONEL 750	32		29	Antistatic spring	INCONEL 750	1	
14	Gland pin	ST.37	4		30	Wrench head	S.ST 316L	1	
15	Stem thrust seal	316L+PTFE	1		31	Wrench head bolt	A193 B8M, EN3506-1 A8-80		
					32	Pipe handle	C.St Zink plate, A240 316L	1	1
					33	Sleeve	PVC	1	

\* Repair kit components  
\*\* Available from 6" size only





# Trunnion Mounted Ball Valves

## Trunnion

General

81/82  
Series

83  
Series

**91/92  
Series**

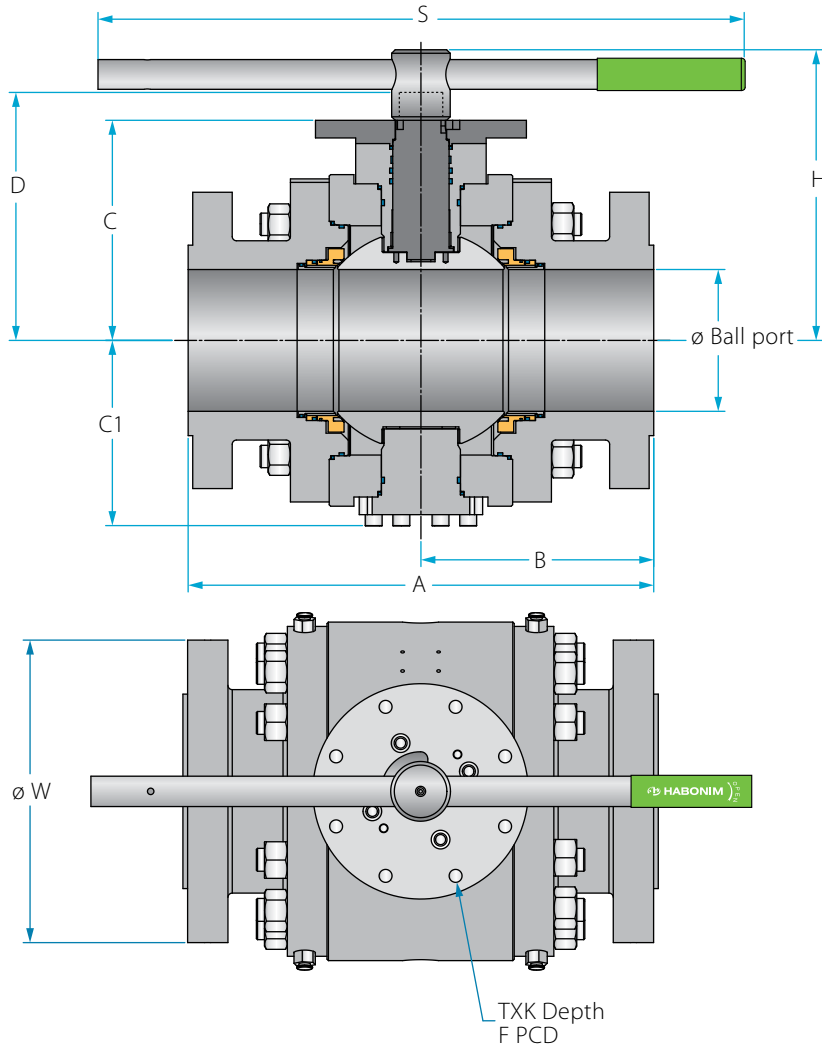
93/94  
Series

95/96  
Series

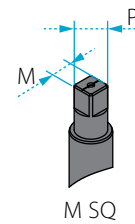
Ordering  
code system

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

### Valve dimensions



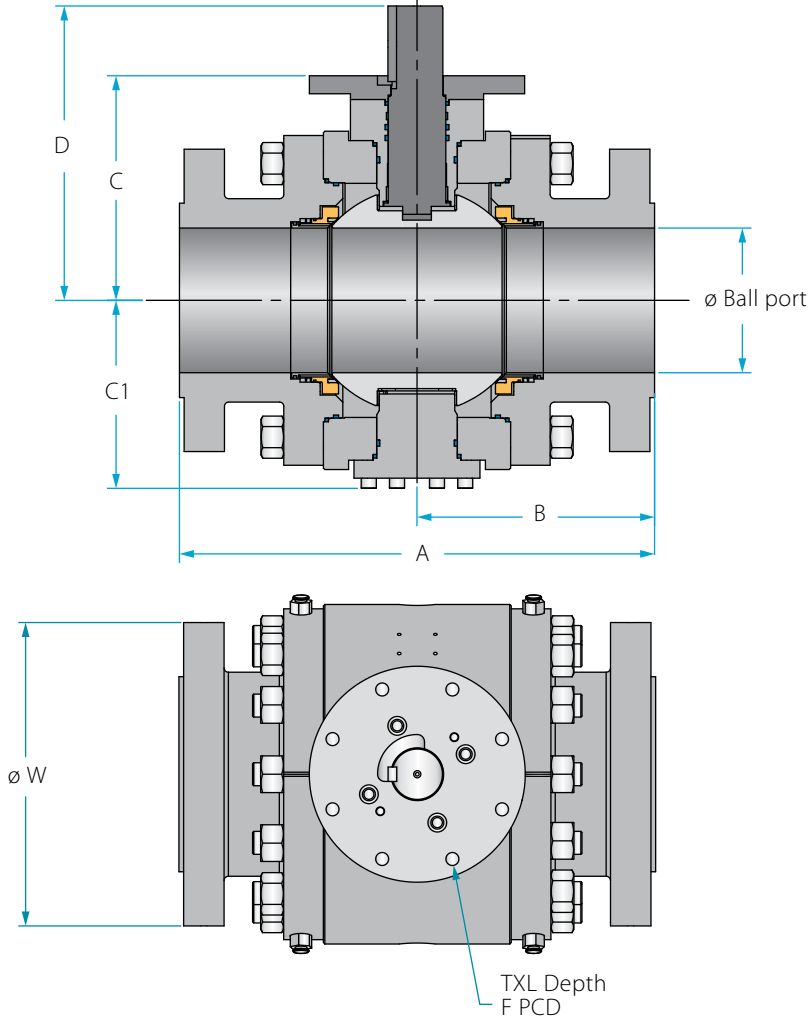
### Preparation for actuation



Std. port	Unit	Ball port	A		B		C	C1	D	W		Msq	Psq	H	S	F	TxL	Weight kg/lb		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	91.50	144.50	150.00	165.00	17.00	22.00	196.00	401.00	(F10)	102.00	11 X15	27	31	400	363
2"	inch	1.93	7.01	8.50	3.50	4.25	5.00	3.60	5.69	5.91	6.50	0.67	0.87	7.72	15.79		4.02	(4 holes)	60	68	463	420
DN80	mm	74.00	203.00	283.00	101.50	128.00	148.00	117.00	172.00	190.00	210.00	22.00	32.00	223.00	610.00	(F12)	125.00	13x15	44	61	1125	952
3"	inch	2.91	7.99	11.14	4.00	5.04	5.83	4.61	6.77	7.48	8.27	0.87	1.26	8.78	24.02		4.92	(4 holes)	97	134	1300	1100
DN100	mm	100.00	229.00	305.00	114.50	140.50	171.00	139.00	198.50	230.00	255.00	27.00	35.00	247.50	610.00	(F14)	140.00	18x15	66	100	2154	1860
4"	inch	3.94	9.02	12.00	4.51	5.53	6.73	5.47	7.81	9.06	10.04	1.06	1.38	9.74	24.02		5.51	(4 holes)	146	220	2490	2150
DN150	mm	150.00	394.00	457.00	185.00	230.40	254.00	191.00	290.50	280.00	320.00	36.00	46.20	356.50	916.00	(F16)	165.00	22x25	180	216	4723	4628
6"	inch	5.91	15.51	17.99	7.28	9.07	10.00	7.52	11.44	11.02	12.60	1.42	1.82	14.04	36.06		6.50	(4 holes)	397	476	5460	5350

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/ib		Kv / Cv		
			150	300	150	300	150	300	150	300	150	300	150	300	150	300	150	300	150	300			150	300			
DN200	mm	201.00	457.00	502.00	228.50	251.00	325.00	305.00	247.00	232.00	405.50	379.50	345.00	380.00	50.00	50.00	54.00	61.00	14.00	14.00	(F16)	165.00	22x25	346	378	9273	8737
8"	inch	7.91	17.99	19.76	9.00	9.88	12.80	12.01	9.72	9.13	15.96	14.94	13.58	14.96	1.97	1.97	2.13	2.40	0.55	0.55		6.50	(4 holes)	763	833	10720	10100
DN250	mm	252.00	533.00	568.00	270.00	287.50	353.00	359.00	297.00	299.00	430.00	454	405.00	445.00	50.00	60.00	54.00	65.50	14.00	18.00	(F25)	254.00	18x25	473	594	15224	14792
10"	inch	9.92	20.98	22.36	10.63	11.32	13.90	14.13	11.69	11.77	16.93	17.87	15.94	17.52	1.97	2.36	2.13	2.58	0.55	0.71		10.00	(8 holes)	1043	1310	17600	17100
DN300	mm	303.00	610.00	648.00	298.00	313.00	388.00	368.00	324.00	305.00	468.50	464	485.00	520.00	60.00	60.00	63.50	65.50	18.00	18.00	(F25)	254.00	18x25	723	833	23096	22404
12"	inch	11.93	24.02	25.51	11.73	12.32	15.28	14.49	12.76	12.01	18.44	18.27	19.09	20.47	2.36	2.36	2.50	2.58	0.71	0.71		10.00	(8 holes)	1594	1836	26700	25900
DN350	mm	334.00	686.00	762.00	343.00	381.00	425.00	400.00	372.00	330.00	555.00	520	535.00	585.00	72.00	72.00	78.00	78.00	20.00	20.00	(F30)	298.00	22x30	1072	1237	27940	26729
14"	inch	13.15	27.01	30.00	13.50	15.00	16.73	15.75	14.65	12.99	21.85	20.47	21.06	23.03	2.83	2.83	3.07	3.07	0.79	0.79		11.73	(8 holes)	2363	2727	32300	30900
DN400	mm	385.00	762.00	838.00	381.00	419.00	460.50	435.00	415.50	363.00	590.50	555	595.00	650.00	72.00	72.00	78.00	78.00	20.00	20.00	(F30)	298.00	22x30	1703	1949	38536	36763
16"	inch	15.16	30.00	32.99	15.00	16.50	18.13	17.13	16.36	14.29	23.25	21.85	23.43	25.59	2.83	2.83	3.07	3.07	0.79	0.79		11.73	(8 holes)	3754	4297	44550	42500

# Trunnion Mounted Ball Valves

## Trunnion

General

81/82  
Series

83  
Series

91/92  
Series

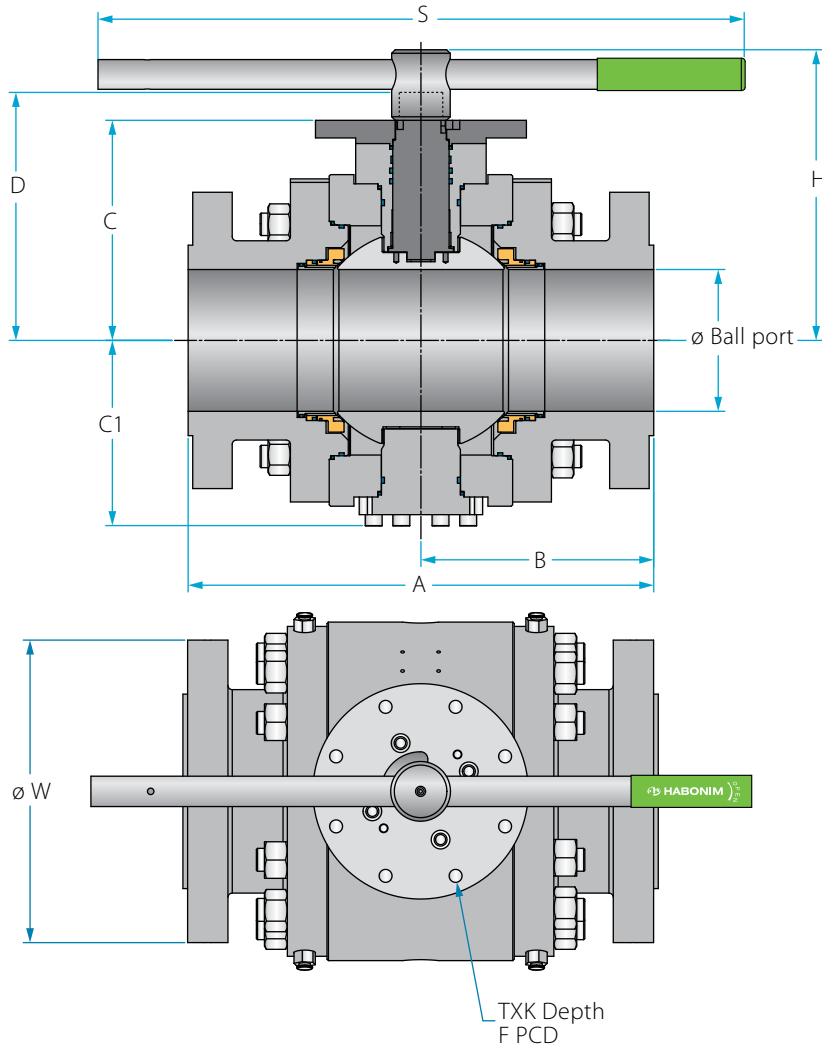
**93/94  
Series**

95/96  
Series

Ordering  
code system

Size 2"-6" | DN50-DN150 | Class 600/900 | [93/94 Series](#)

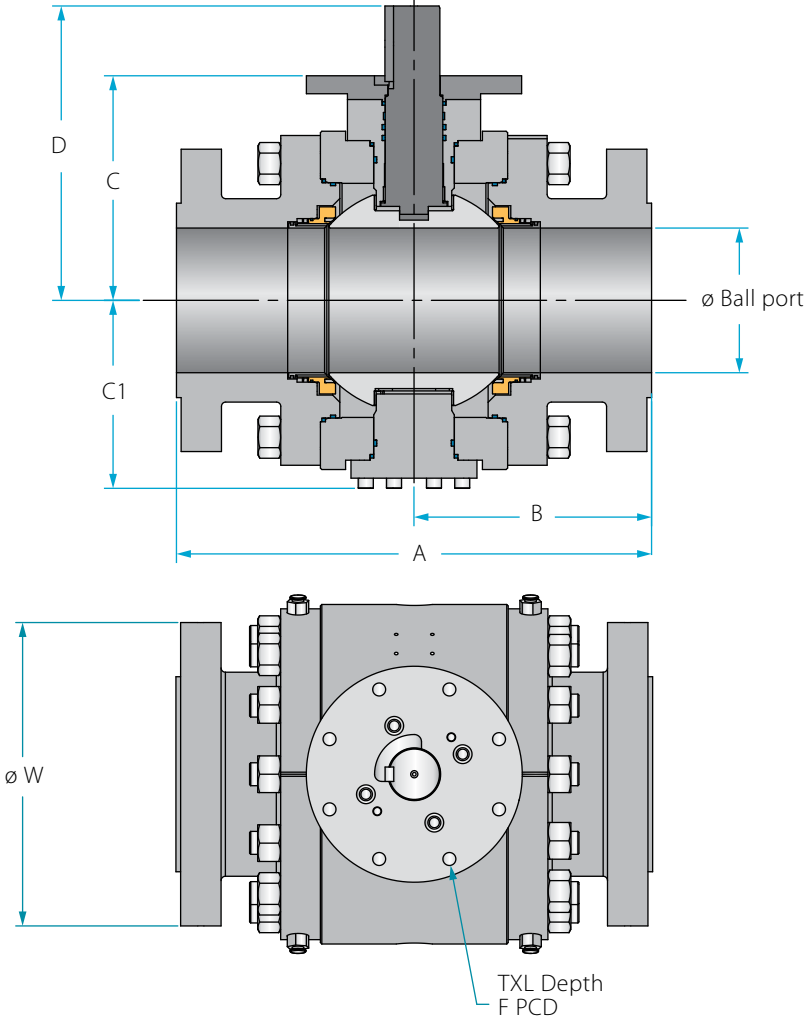
### Valve dimensions



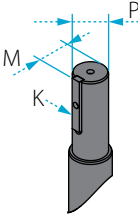
Std. port	Unit	Ball port	A		B		C		C1		D		W		Msq	Psq	H	S	F	TxL	Weight kg/lb		Kv / Cv		
			600	900	600	900	600	900	600	900	600	900	600	900							600	900	600	900	
DN50	mm	49.00	292.00	368.00	131.00	184.00	144.00	148.50	119.00	263.00	168.50	182.50	165.00	215.00	22.00	28.00	219.50	401.00	(F12)	125.00	13X15	49	72	329	294
2"	inch	1.93	11.50	14.49	5.16	7.24	5.67	5.85	4.69	10.35	6.63	7.19	6.50	8.46	0.87	1.10	8.64	15.79		4.92	(4 holes)	108	159	380	340
DN80	mm	74.00	356.00	381.00	161.00	190.50	191.00	214.00	160.00	152.70	215.00	237.50	210.00	240.00	22.00	28.00	266.00	610.00	(F14)	140.00	22x24	103	146	874	822
3"	inch	2.91	14.02	15.00	6.34	7.50	7.52	8.43	6.30	6.01	8.46	9.35	8.27	9.45	0.87	1.10	10.47	24.02		5.51	(4 holes)	227	322	1010	950
DN100	mm	100.00	432.00	457.00	216.00	228.50	217.00	193.00	184.00	184.00	246.50	259.00	275.00	290.00	27.00	36.00	316.50	916.00	(F16)	165.00	22x25	166	232	1557	1471
4"	inch	3.94	17.01	17.99	8.50	9.00	8.54	7.60	7.24	7.24	9.70	10.20	10.83	11.42	1.06	1.42	12.46	36.06		6.50	(4 holes)	366	511	1800	1700
DN150	mm	150.00	559.00	610.00	278.00	305.00	282.50	368.00	214.50	224.00	320.50	463.00	355.00	380.00	36.00	48.20	385.00	916.00	(F16)	165.00	22x25	342	495	3893	3823
6"	inch	5.91	22.01	24.02	10.94	12.01	11.12	14.49	8.44	8.82	12.62	18.23	13.98	14.96	1.42	1.90	15.16	36.06		6.50	(8 holes)	754	1091	4500	4420

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	330.00	368.50	312.00	307.00	263.00	263.00	409.00	403.00	420.00	470.00	72.00	76.50	20.00	(F25)	254.00	18x25	577	836	7742	7344
8"	inch	7.91	25.98	29.02	12.99	14.51	12.28	12.09	10.35	10.35	16.10	15.87	16.54	18.50	2.83	3.01	0.79		10.00	(8 holes)	1272	1843	8950	8490
DN250	mm	252.00	787.00	838.00	400.00	419.00	374.00	384.00	310.00	326.00	489.50	499.00	510.00	545.00	72.00	76.50	20.00	(F25)	254.00	18x25	931	1301	12543	12110
10"	inch	9.92	30.98	32.99	15.75	16.50	14.72	15.12	12.20	12.83	19.27	19.65	20.08	21.46	2.83	3.01	0.79		10.00	(8 holes)	2052	2868	14500	14000
DN300	mm	303.00	838.00	965.00	419.00	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	18x35	1126	1576	19809	18598
12"	inch	11.93	32.99	37.99	16.50	19.00	15.83	16.50	13.54	14.21	20.35	21.42	22.05	24.02	2.83	3.01	0.79		10.00	(8 holes)	2482	3474	22900	21500
DN350	mm	334.00	889.00	1029.00	444.50	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	22x35	1638	2293	24739	23528
14"	inch	13.15	35.00	40.51	17.50	20.26	17.13	19.80	16.22	17.05	22.24	24.92	23.82	25.20	3.15	3.43	0.87		11.73	(8 holes)	3611	5055	28600	27200
DN400	mm	385.00	991.00	1130.00	515.00	565.00	500.00	604.00	442.00	520.00	636.00	734.00	686.00	705.00	98.00	104.00	28.00	(F30)	298.00	22x350	2258	3116	33735	32438
16"	inch	15.16	39.02	44.49	20.28	22.24	19.69	23.78	17.40	20.47	25.04	28.90	27.01	27.76	3.86	11.00	1.10		11.73	(8 holes)	4978	6870	39000	37500

# Trunnion Mounted Ball Valves

## Trunnion

General

81/82  
Series

83  
Series

91/92  
Series

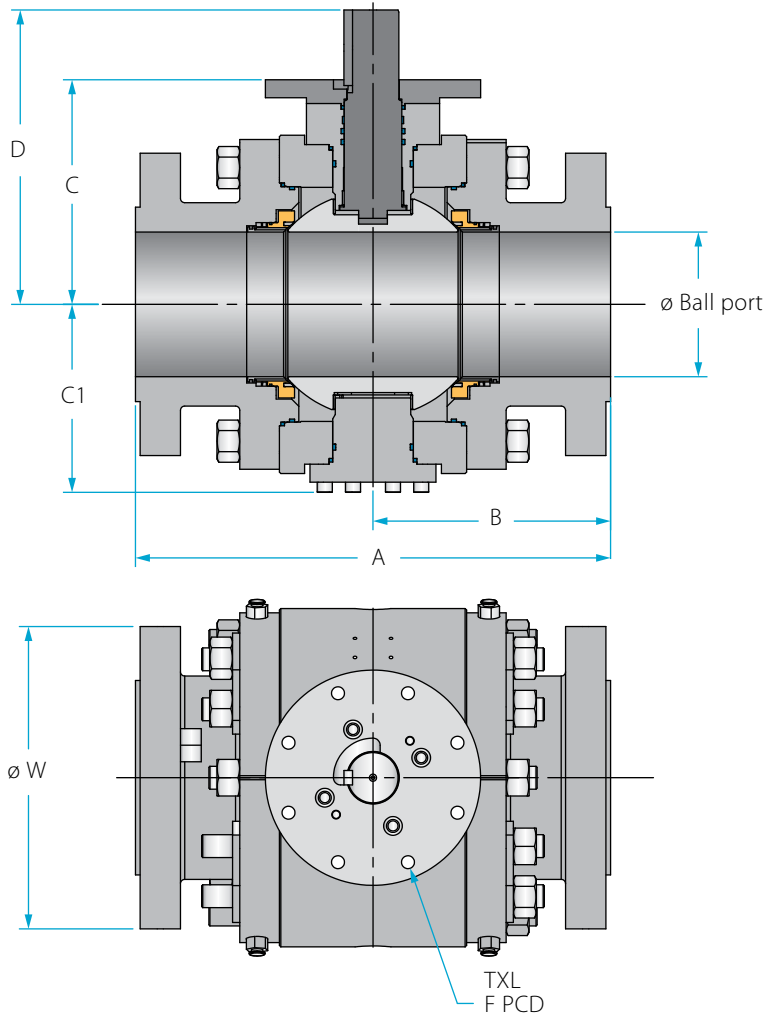
93/94  
Series

**95/96  
Series**

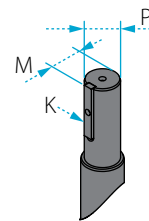
Ordering  
code system

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

### Valve dimensions



#### Preparation for actuation

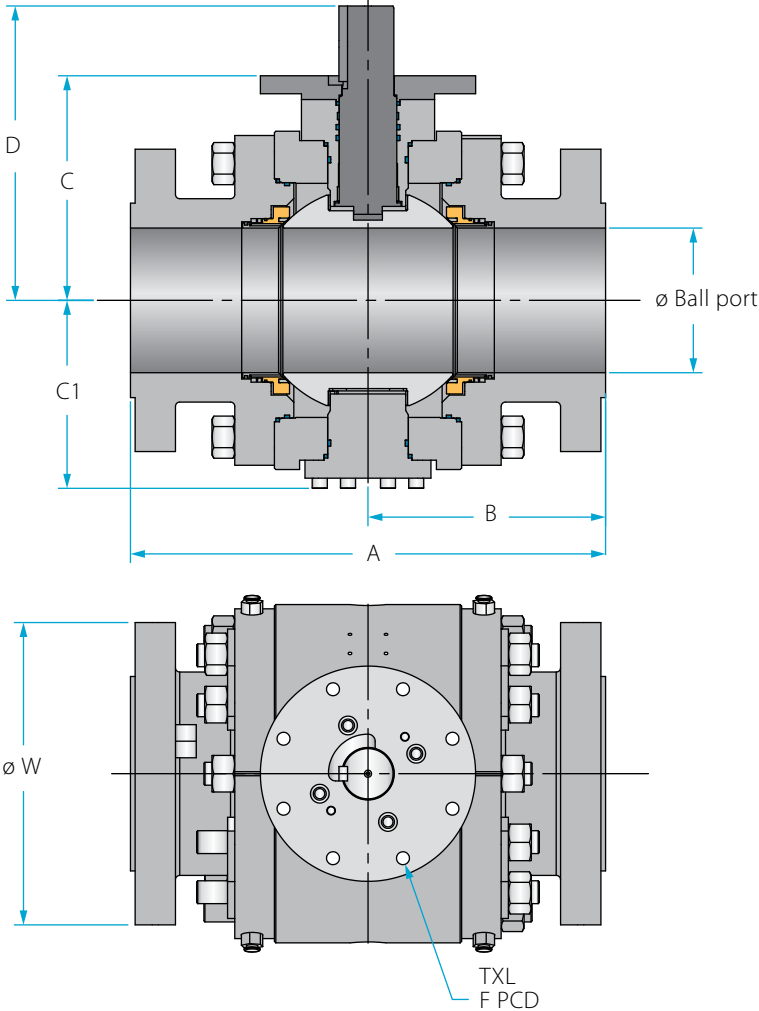


Std. port	Unit	Ball port	A		B		C	C1	D	W		P	M	K	F	TxL	Weight kg/ib		Kv / Cv		
			1500	2500	1500	2500				1500	2500						1500	2500	1500	2500	
DN50	mm	49.00	368.00	451.00	184.00	225.50	204.50	159.00	339.00	215.00	235.00	35.00	41.20	10.00	(F14)	140.00	18X15	90	179	281	260
2"	inch	1.93	14.49	17.76	7.24	8.88	8.05	6.26	13.35	8.46	9.25	1.38	1.62	0.39		5.51	(4 holes)	241	480	325	300
DN80	mm	74.00	470.00	578.00	235.00	289.00	262.00	201.50	342.50	265.00	305.00	50.00	53.50	14.00	(F25)	254.00	22x25	175	340	735	649
3"	inch	2.91	18.50	22.76	9.25	11.38	10.31	7.93	13.48	10.43	12.01	1.97	2.11	0.55		10.00	(4 holes)	469	911	850	750
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	(F25)	254.00	22x25	330	646	1384	1228
4"	inch	3.94	21.50	26.50	10.75	13.25	8.86	7.81	11.79	12.20	13.98	1.97	2.13	0.55		10.00	(4 holes)	884	1731	1600	1420
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	(F30)	298.00	22x30	627	1227	3590	2206
6"	inch	5.91	27.76	35.98	13.88	17.99	12.20	10.71	16.73	15.55	19.09	2.36	2.50	0.71		11.73	(8 holes)	1680	3288	4150	2550



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	6963	4758
8"	inch	7.91	32.76	40.24	16.38	20.12	16.73	10.75	21.26	19.09	21.65	2.83	3.01	0.79		10.00	(8 holes)	2205	5137	8050	5500
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	11418	7526
10"	inch	9.92	39.02	50.00	19.51	25.00	22.91	14.72	28.03	23.03	26.57	3.15	3.43	0.87		11.73	(8 holes)	4189	9760	13200	8700
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	16868	10726
12"	inch	11.93	44.49	55.98	22.24	27.99	31.38	20.16	36.50	26.57	29.92	3.15	3.43	0.87		11.73	(8 holes)	7959	17637	19500	12400

# Trunnion Mounted Ball Valves

## Trunnion

General

81/82  
Series

83  
Series

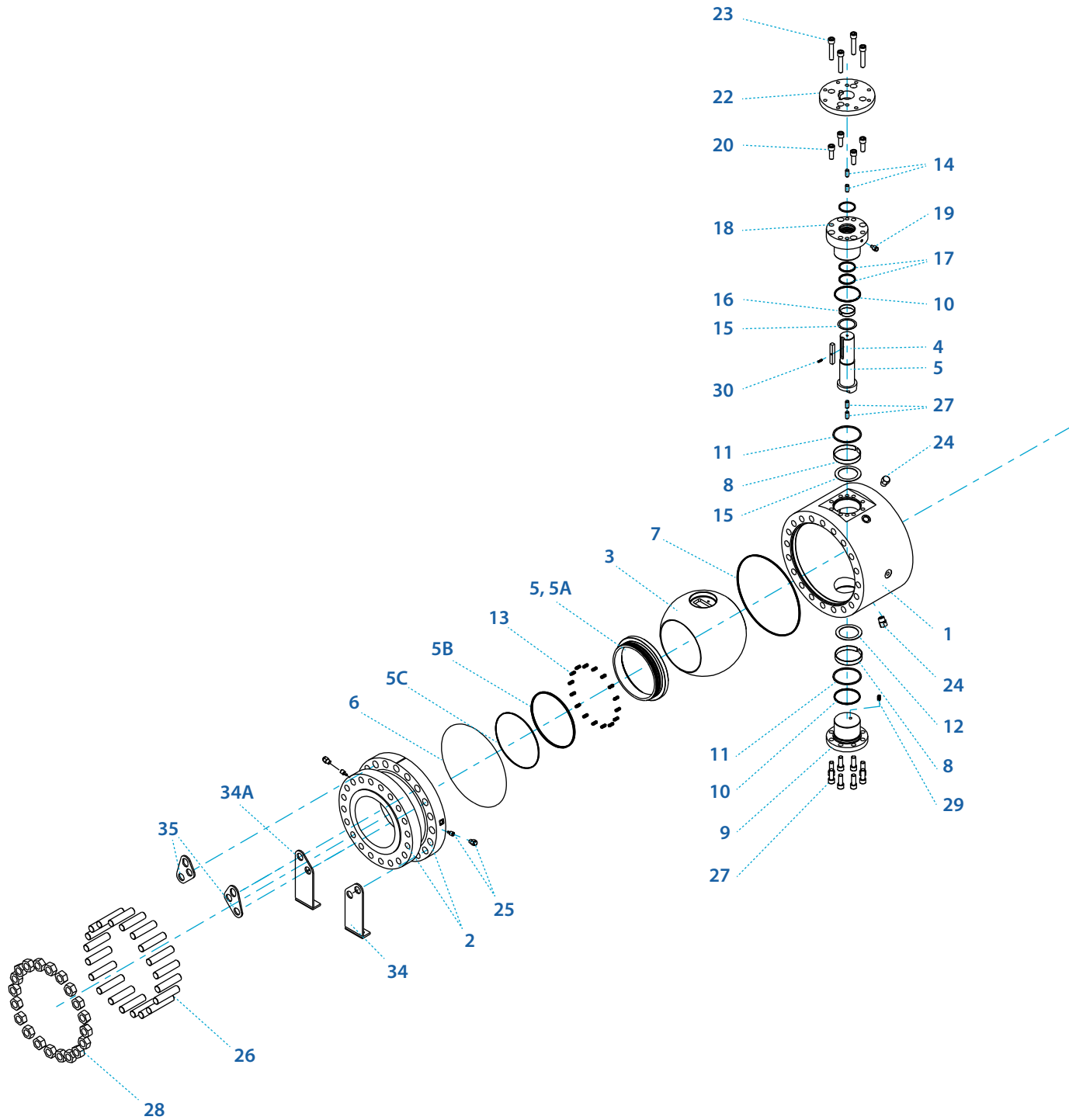
91/92  
Series

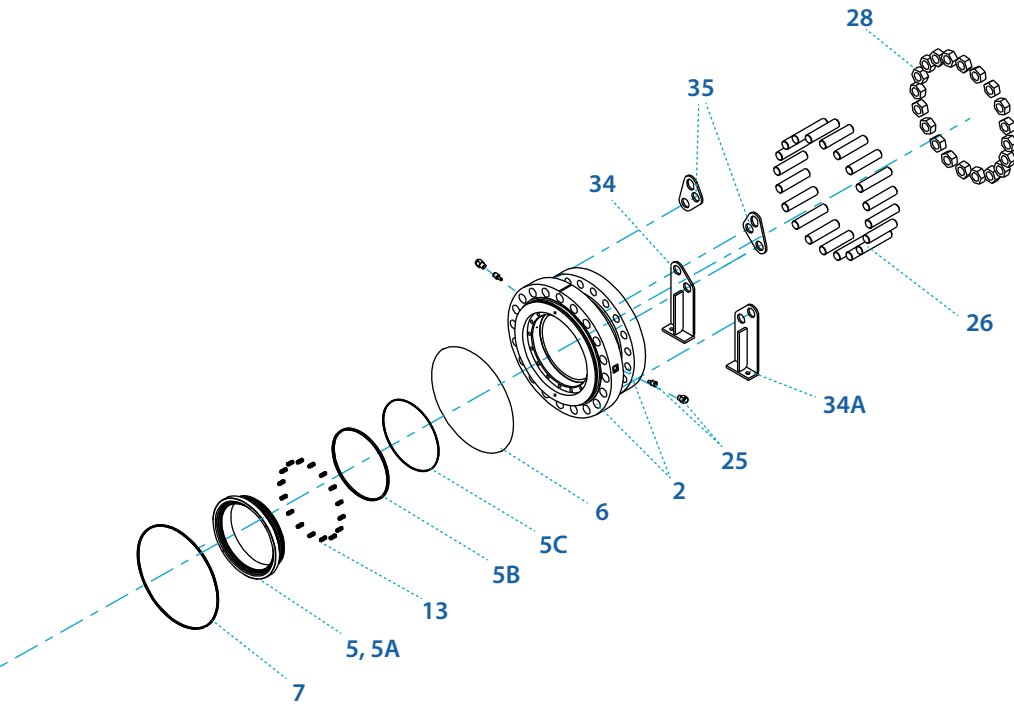
93/94  
Series

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, DEVLON, CF PTFE, CF PEEK	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	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	A194 GR-7, A193 GR-8M, 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

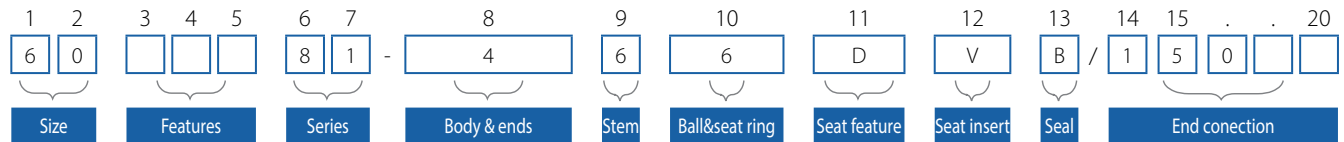
93/94  
Series

95/96  
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 port
2 Piece Series	
81	ANSI #150 Flanged
82	ANSI #300 Flanged
83	ANSI #600 Flanged
3 Piece Series	
91	ANSI #150
92	ANSI #300
93	ANSI #600
94	ANSI #900
95	ANSI #1500
96	ANSI #2500

Body & ends	
4	C. Steel A216 WCB/A105
6	S. Steel A351 CF8M
F	C. Steel A350 LF2
R	C. Steel A352 LC1
9	C. Steel A352 LCB
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

Stem	
4	C. Steel A105+ENP
6	S. Steel A479 316\316L
F	C. Steel A350 LF2+ENP
Q	S. Steel A182 F6A
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

Ball & seat ring	
4	C. Steel A105+ENP
6	S. Steel A479 316\316L
F	C. Steel A350 LF2+ENP
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*	Extended buttweld sch 40
XBW80	Extended buttweld sch 80
XBW160	Extended buttweld sch 160

\* By default XBW calls for XBW 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





[www.habonim.com](http://www.habonim.com)

**Habonim ISRAEL**

Tel: +972-4-6914911

Fax: +972-4-6914935

[sales\\_international@habonim.com](mailto:sales_international@habonim.com)

**Habonim EUROPE**

Tel: +34 640 384 759

[sales\\_eu@habonim.com](mailto:sales_eu@habonim.com)

**Habonim UK**

Tel: +44-1633-484554

Fax: +44-1633-482252

[sales\\_uk@habonim.com](mailto:sales_uk@habonim.com)

**Habonim USA**

Toll Free Phone: 1-866-261-8400

Toll Free Fax: 1-866-243-9959

[sales\\_usa@habonim.com](mailto:sales_usa@habonim.com)

**Habonim CHINA**

Tel: + 86 21 64453190 \*146

[sales\\_china@habonim.com](mailto:sales_china@habonim.com)

**Habonim AUSTRALIA**

Tel: +61 3 9556 5428

[sales\\_au@habonimau.com](mailto:sales_au@habonimau.com)



[www.habonim.com](http://www.habonim.com)

MAXMARK Trunnion mounted ball valves 04/17 REV2.04

MAXMARK

