

SERIES 7 & 8

Trunnion Mounted Soft Seated/Metal Seated Ball Valves

API 6D / API 608 / ISO 17292

Two-Piece/ Three-Piece

Bolted / Fully welded design



www.delvalflow.com

1-833-DELVAL1



STANDARD FEATURES

Quality & Performance

DelVal Flow Controls provides a wide range of quality products with the reliability you can count on. Our designs are based on industry requirements and our customers' feedback. DelVal® Series 7 & 8 trunnion mounted side entry ball valves are manufactured in ISO 9001 certified facilities with a robust quality management system and according to ASME B16.34 and API 6D, API 608, ISO 17292 standards.

Design Construction and Features

1. Valve Body

Heavy duty two-piece (Series 7) or three-piece (Series 8) bolted body construction designed to meet or exceed the requirements of the most demanding applications.

2. ISO Top Flange

The top flange is drilled as per ISO 5211 to accommodate direct mounting of a wide range of actuators.

3. Blowout Proof Stem

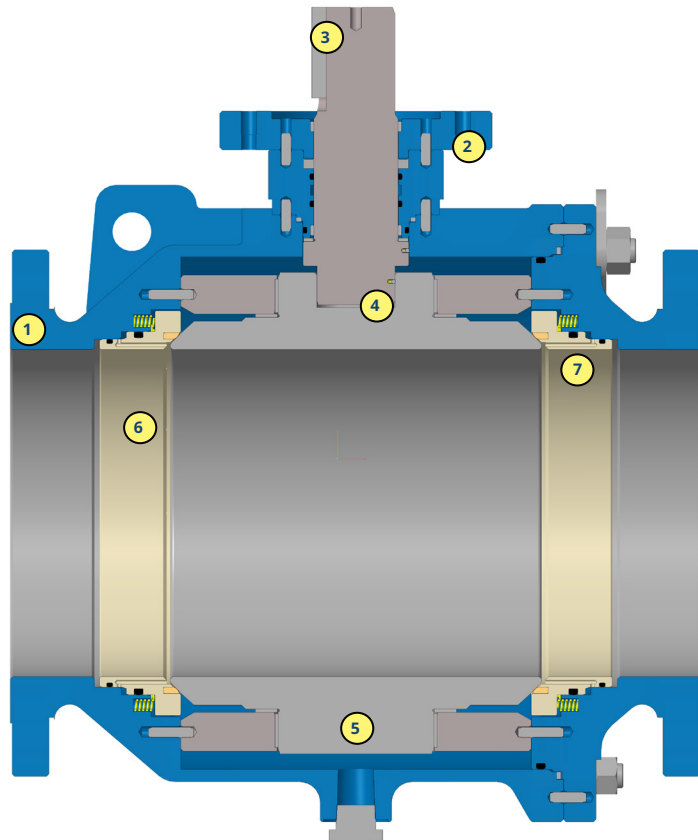
Anti-blowout proof stem provides positive stem retention and permits the replacement of stem packing with the valve in either a fully closed or open position.

4. Anti-static Stem Design

All stems feature antistatic grounding device as standard. This device ensures electrical continuity between the valve ball, stem and body, thus eliminating the possibility of static electrical charges creating sparks within the valve.

5. Trunnion Mounted Ball

The ball is held in a fixed axial position by upper and lower trunnions and can move only in a rotational mode.



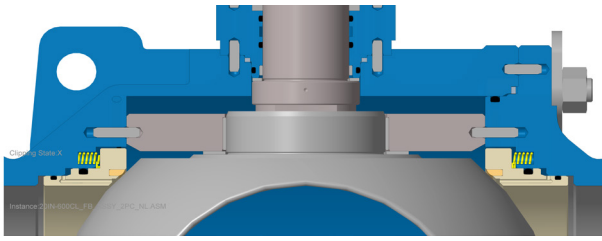
6. Floating Seat Ring

The seats are contained in metal carriers which are spring loaded against the ball. Line pressure applied to a close valve increases the load on the upstream seat to effect a tight seal. Two independent floating seat rings ensure bi-directional tightness of the valve from zero differential pressure to the maximum rated pressure.

7. Self-relieving Seat Design

When the valve is in the closed position, media will get trapped in the body cavity. Unless this media is drained, it will be subject to thermal expansion and contraction. As the temperature rises, the trapped media desires to expand and the pressure increases in the body cavity. In order to avoid excessive pressure build-up, the valve seats are designed to self-relieve, allowing the media in the body to escape into the pipeline.

DESIGN CONSTRUCTION AND FEATURES



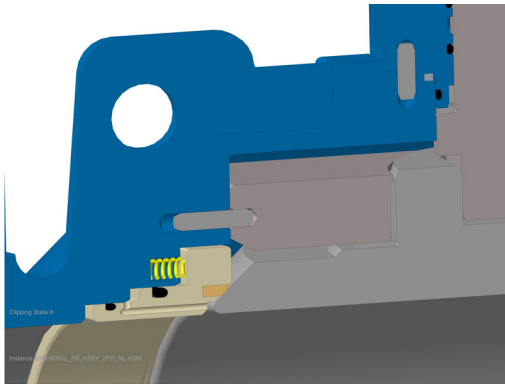
Double Block And Bleed

Spring loaded floating seats maintain contact with the ball and provide a tight shut off even at low pressure differential. Independent sealing of upstream and downstream sides facilitates the draining of fluid from body cavity, thus ensuring double block and bleed operation.



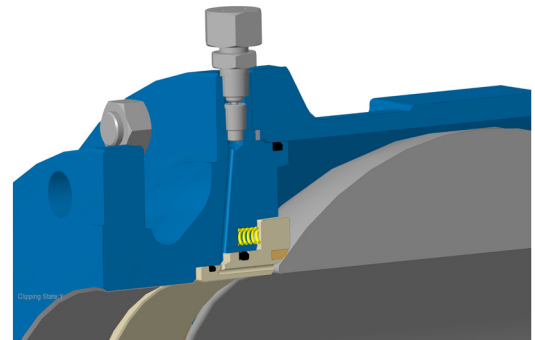
Body Joints

A double seal combination of O-ring and fire safe spiral wound gasket ensures perfect body joint sealing. DelVal® Trunnion Ball Valves meet or exceed the fugitive emission requirements across a wide range of pressure and temperature applications. Valves are suitable for both above and underground installations.



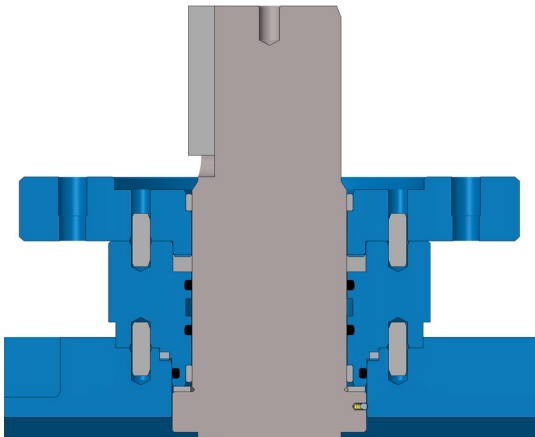
Fire Safe Design

Fire safe design comprises of a primary soft sealing and a secondary metal seat. A resilient material is inserted into the metal seat holder to provide a soft action in addition to the metal sealing between the ball and the seat rings. In case of fire the soft seat insert burns out and allows the spring loaded seat to ensure metal to metal sealing against the ball.



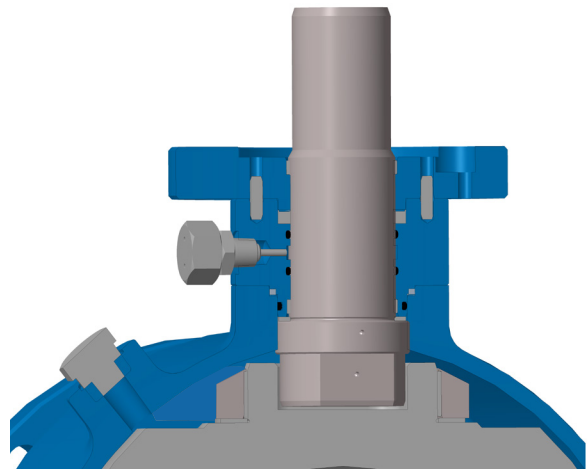
Emergency Seat Sealant Injection

An emergency sealant injection system is available on request. Each Trunnion Ball Valve has a port for sealant injection feature.



Stem Sealing

A multiple stem sealing arrangement prevents leakage into the atmosphere. The unique arrangement consists of a double sealing arrangement with O-rings around the stem, and one pre-energized graphite seal ring is also provided.



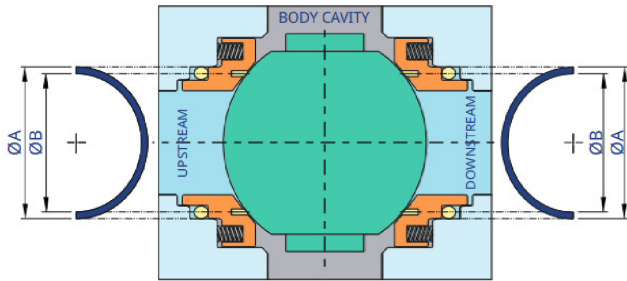
Emergency Stem Sealant Injection

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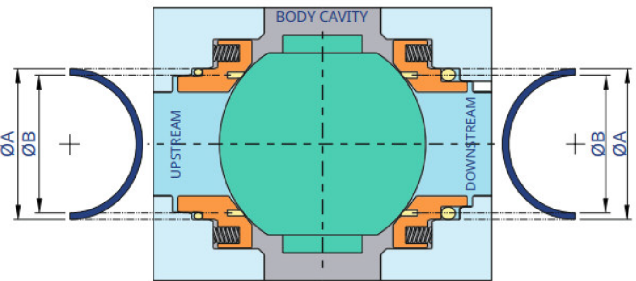
DESIGN CONSTRUCTION AND FEATURES

Double Piston Effect Seats (DIB-1)

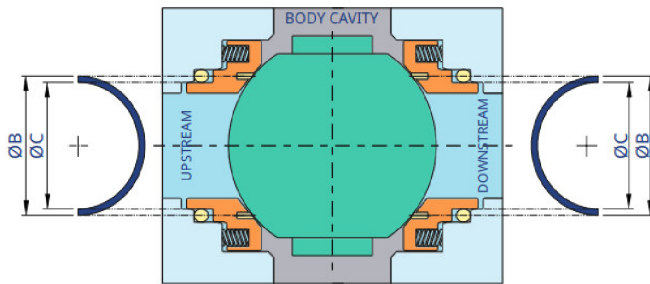
Double piston effect seats are pressure energized in both directions. So the seat rings are always pushed against the ball by the pressure from upstream/ downstream or from the cavity. If the upstream seat fails, the downstream seat can still ensure a tight seal. DPE seats are used in specific application (high integrity required) or for pipe pressure testing. Since double piston effect valves do not have the self relieving function, the automatic cavity-pressure relief valve shall be provided, unless otherwise specified.



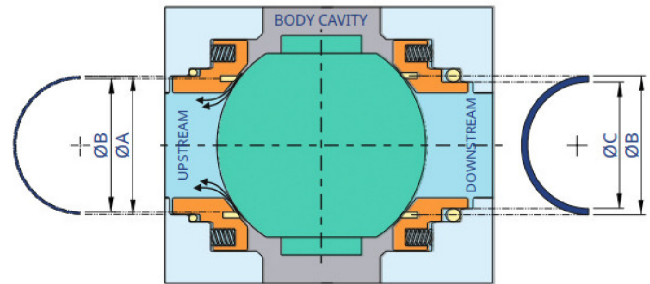
Pressure acting on upstream and downstream seat



Pressure acting on upstream and downstream seat



Pressure acting on body cavity

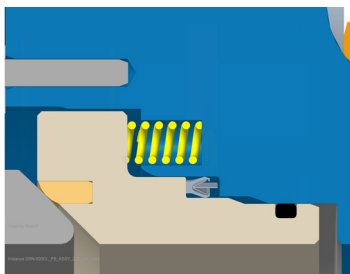


Pressure acting on the body cavity

Other Options Available

Lip seal Design

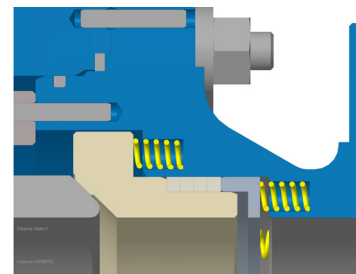
Lip seal is the spring-energized seal utilizing Elgiloy or Inconel spring and PTFE jacket. It is effective in a wide range of applications when increased corrosion resistance is required such as sour gas service, or for low temperature or cryogenic services.



Lip Seal Design

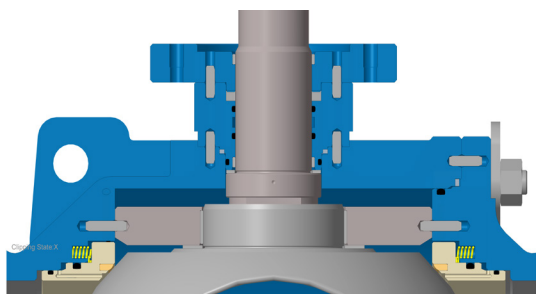
Metal Seat Design

Metal seat is ideal for a severe service application, high abrasive or high temperature service. The scraper type seat design prevents the build-up of particulate matter on the ball surface ensuring maximum leak tightness.



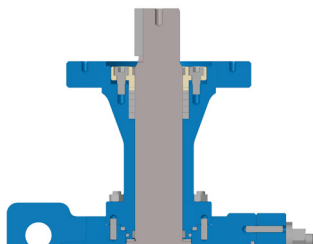
Metal Seat Design

O-Ring Stem Sealing For API 6D Design



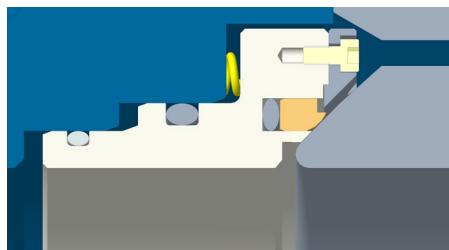
The O-ring seal arrangement features a triple stem seal with two O-rings and a fire safe gasket. Rigorous fugitive emissions testing requirements are reliably met by utilizing this O-ring stem seal.

Adjustable Packing Stem Seal For API 608 Design



For applications that benefit from the flexibility of a fully adjustable packing gland, this multi stem seal consists of a layered graphite packing gland set. The adjustable seal permits constant adherence to stringent fugitive emissions testing requirements.

Fire safe, Primary Metal Secondary Soft



The primary metal secondary soft seat has a soft insert (secondary seal) seat which gets compressed fully due to line pressure and the metal seat does the primary sealing. The secondary soft seat gives a bubble tight seat sealing, which is not possible in metal seating. These valves are mostly for gas applications.

Standards and Specifications

Delval® Series 7 & 8 Side Entry Ball Valves are designed and manufactured to meet the requirements of the following industry standards:

Design: API 6D, ASME B16.34, API 608***, ISO 17292

Face to Face: API 6D, ASME B16.10

Testing: API 6D, API 598, ISO 5208

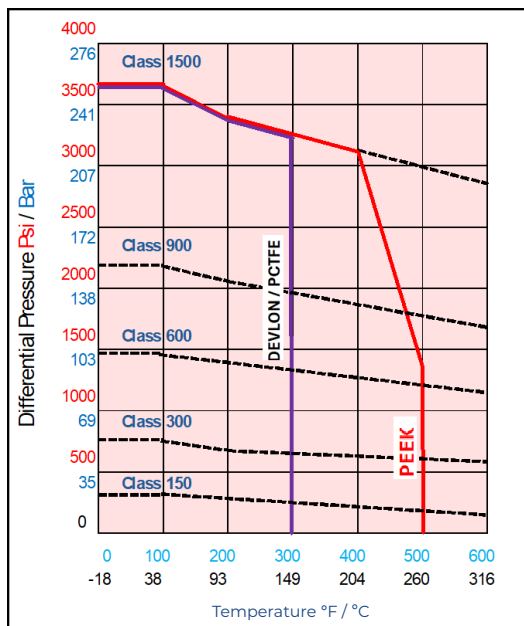
Pressure Temperature: ASME B16.34

Flange Accommodation: ASME B16.5, ASME B16.47

Butt Weld Ends: ASME B16.25

NACE: ANSI / ASME MR 0175 / ISO 15156-1, NACE MR 0103

Pressure-Temperature Ratings



Pressure - temperature seat ratings of valves are as given in the graph for body material ASTM A 216 - Gr. WCB with the exception of body seat rings and primary soft seals, all valve components are capable of withstanding the pressure-temperature ratings as specified in ASME B 16.34.

Temperature Limits* :

	Material	Lower Limit		Upper Limit	
		°F	°C	°F	°C
Body	WCB	-20	-29	800	425
	LCB	-50	-46	650	345
	CF8	-320	-196	1000	538
	CF8M	-320	-196	1000	538
Seat	DEVILON®	-58	-50	302	150
	PEEK	-58	-50	500	260
	PCTFE	-320	-196	302	150
Seal	HNBR AED	-50	-46	302	150
	VITON® AED	5	-15	392	200

Coating	Service Temperature °C	Coating Thickness	Application
TCC (Tungsten carbide coating)	-196 °C to 280 °C	150-300 micron	Widely used for valves in cryogenic applications, oxygen service and non-lubricative dry gas services.
CRC (Chromium carbide coating)	-100 °C to 800 °C	150-300 micron	Use in very high temperature gas or liquid applications, sour (H ₂ S) hydrocarbon services and have excellent resistance to wear, erosion and corrosive media.

Note: These ratings are a guide for general service. Please consult DelVal® for specific recommendations.

*Pressure temperature rating shall be the lesser of the shell rating or the seat rating or the seal rating.

Fire Safe Certified: API 6FA / API 607

Fugitive Emission: ISO 15848 - 1 & 2, API 641

Compliance: PED 2014 / 68 / EU

Body Style: Flanged end / Butt weld end / Bolted body / Fully welded body

Rating: Class 150 to Class 2500

Temperature Range*: -46°C to 200°C } For Soft Seat -46°C to 450°C } For Metal seat
-50°F to 392°F } -50°F to 842°F }

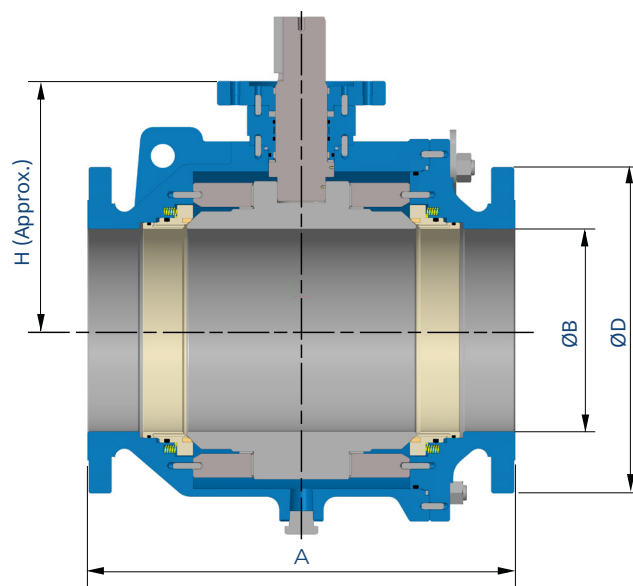
Size Range:** 2" to 48"

* Pressure temperature rating shall be the lesser of the shell rating or the seat rating or the seal rating.

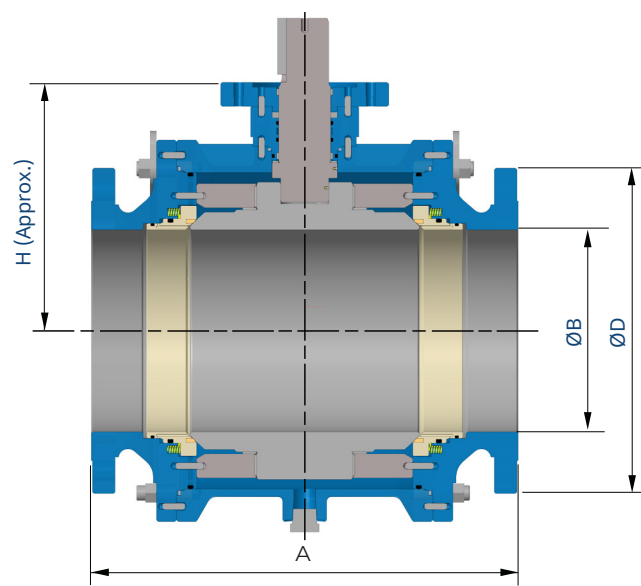
** Consult DelVal® for sizes not available in the bulletin.

*** Sizes upto 24" CL 600.

DIMENSIONS AND WEIGHTS (FULL PORT)



Two-Piece Body



Three-Piece Body

ASME Class 150 (mm)

Size	Two - Piece							Three- Piece						
	ØB	A			H	ØD	WT(kg)*	ØB	A			H	ØD	WT(kg)*
NPS		RF	RTJ	BWE			FL		RF	RTJ	BWE			FL
2	49	178	191	216	114	152	20	-	-	-	-	-	-	-
3	74	203	216	283	148	190	27	-	-	-	-	-	-	-
4	100	229	241	305	173	229	42	-	-	-	-	-	-	-
6	150	394	406	457	222	279	108	-	-	-	-	-	-	-
8	201	457	470	521	270	343	208	-	-	-	-	-	-	-
10	252	533	546	559	310	406	400	-	-	-	-	-	-	-
12	303	610	622	635	360	483	449	-	-	-	-	-	-	-
14	334	686	699	762	385	533	616	-	-	-	-	-	-	-
16	385	762	775	838	420	597	815	385	762	775	838	420	597	980
18	436	864	876	914	460	635	1200	436	864	876	914	460	635	1428
20	487	914	927	991	513	698	1425	487	914	927	991	513	698	1700
24	589	1067	1080	1143	610	813	2225	589	1067	1080	1143	610	813	2750
26	-	-	-	-	-	-	-	633	1143	-	1245	654	870	3723
28	-	-	-	-	-	-	-	684	1245	-	1346	676	927	4736
30	-	-	-	-	-	-	-	735	1295	-	1397	707	984	5527
32	-	-	-	-	-	-	-	779	1372	-	1524	744	1060	6463
34	-	-	-	-	-	-	-	830	1473	-	1626	806	1111	7645
36	-	-	-	-	-	-	-	874	1524	-	1727	838	1168	8884
40	-	-	-	-	-	-	-	976	1727	-	1780	950	1289	12655
42	-	-	-	-	-	-	-	1020	1829	-	1829	930	1346	13797
48	-	-	-	-	-	-	-	1166	1995	-	1995	1079	1511	21245

ASME Class 150 (Inch)

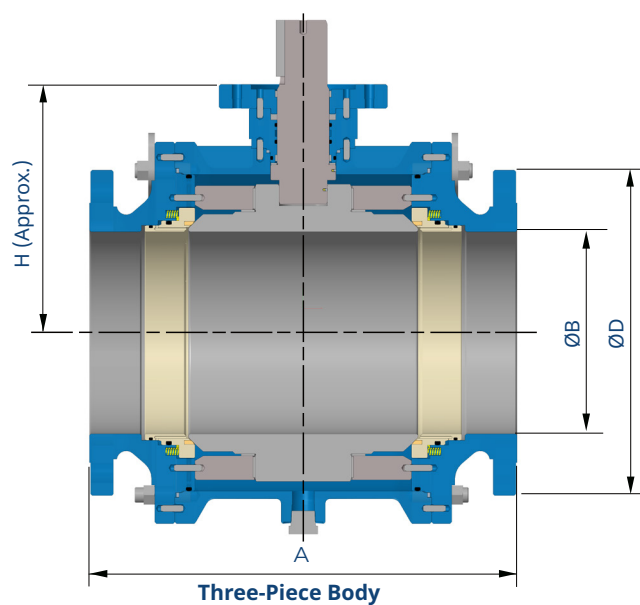
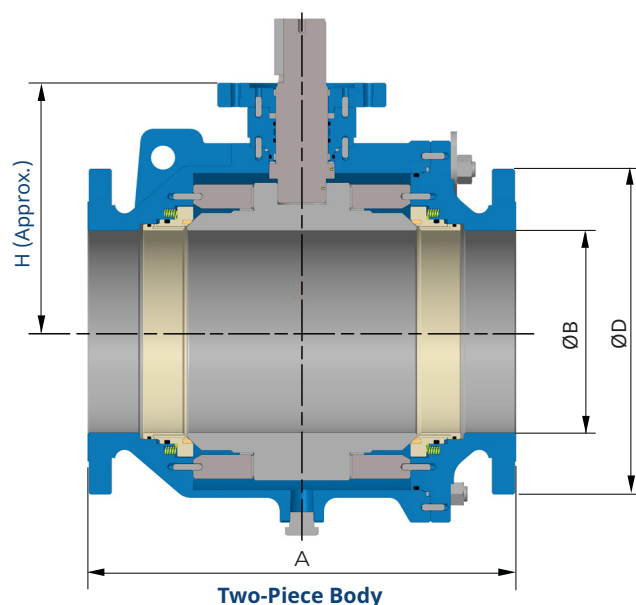
Size	Two - Piece							Three- Piece						
	ØB	A			H	ØD	WT(lbs)*	ØB	A			H	ØD	WT(lbs)*
NPS		RF	RTJ	BWE			FL		RF	RTJ	BWE			FL
2	1.93	7.00	7.50	8.50	4.49	6.00	44	-	-	-	-	-	-	-
3	2.91	8.00	8.50	11.13	5.83	7.50	59	-	-	-	-	-	-	-
4	3.94	9.00	9.50	12.00	6.82	9.00	92	-	-	-	-	-	-	-
6	5.91	15.50	16.00	18.00	8.75	11.00	238	-	-	-	-	-	-	-
8	7.91	18.00	18.50	20.50	10.63	13.50	458	-	-	-	-	-	-	-
10	9.92	21.00	21.50	22.00	12.21	16.00	880	-	-	-	-	-	-	-
12	11.93	24.00	24.50	25.00	14.18	19.00	988	-	-	-	-	-	-	-
14	13.15	27.00	27.50	30.00	15.16	21.00	1355	-	-	-	-	-	-	-
16	15.16	30.00	30.50	33.00	16.54	23.50	1793	15.16	30.00	30.50	33.00	16.54	23.50	2156
18	17.16	34.00	34.50	36.00	18.11	25.00	2640	17.16	34.00	34.50	36.00	18.11	25.00	3142
20	19.17	36.00	36.50	39.00	20.20	27.50	3135	19.17	36.00	36.50	39.00	20.20	27.50	3740
24	23.19	42.00	42.50	45.00	24.02	32.00	4895	23.19	42.00	42.50	45.00	24.02	32.00	6050
26	-	-	-	-	-	-	-	24.92	45	-	49	25.75	34.25	8208
28	-	-	-	-	-	-	-	26.93	49	-	53	26.61	36.5	10441
30	-	-	-	-	-	-	-	28.94	51	-	55	27.83	38.75	12185
32	-	-	-	-	-	-	-	30.66	54	-	60	29.29	41.75	14248
34	-	-	-	-	-	-	-	32.68	58	-	64	31.73	43.75	16854
36	-	-	-	-	-	-	-	34.41	60	-	68	32.99	46	19586
40	-	-	-	-	-	-	-	38.43	68	-	70.08	37.4	50.75	27899
42	-	-	-	-	-	-	-	40.16	72	-	72	36.61	53	30417
48	-	-	-	-	-	-	-	45.9	78.54	-	78.54	42.48	59.5	46837

*Approximate Value.

Please consult DelVal® for actuator mounting details.

DelVal® reserves the right to change the content without notice. Please consult DelVal® for other sizes and dimensions.

DIMENSIONS AND WEIGHTS (FULL PORT)



ASME Class 300 (mm)

Size	Two - Piece							Three- Piece						
	ØB	A			H	ØD	WT(kg)*	ØB	A			H	ØD	WT(kg)*
NPS		RF	RTJ	BWE			FL		RF	RTJ	BWE			FL
2	49	216	232	216	115	165	23	-	-	-	-	-	-	-
3	74	283	298	283	152	210	39	-	-	-	-	-	-	-
4	100	305	321	305	180	254	65	-	-	-	-	-	-	-
6	150	403	419	457	236	318	188	-	-	-	-	-	-	-
8	201	502	518	521	270	381	244	-	-	-	-	-	-	-
10	252	568	584	559	307	444	452	-	-	-	-	-	-	-
12	303	648	664	635	366	521	573	-	-	-	-	-	-	-
14	334	762	778	762	390	584	766	-	-	-	-	-	-	-
16	385	838	854	838	420	648	965	385	838	854	838	420.0	648	1187
18	436	914	930	914	470	711	1433	436	914	930	914	470.0	711	1560
20	487	991	1010	991	536	775	1740	487	991	1010	991	536.0	775	2200
24	589	1143	1165	1143	625	914	2600	589	1143	1165	1143	625.0	914	3500
26	-	-	-	-	-	-	-	633	1245	1270	1245	656.0	972	4488
28	-	-	-	-	-	-	-	684	1346	1372	1346	693.0	1035	5497
30	-	-	-	-	-	-	-	735	1397	1422	1397	741.0	1092	6894
32	-	-	-	-	-	-	-	779	1524	1553	1524	755.0	1149	7606
34	-	-	-	-	-	-	-	830	1626	1654	1626	783.0	1206	8934
36	-	-	-	-	-	-	-	874	1727	1756	1727	829.0	1270	10068
40	-	-	-	-	-	-	-	976	1930	-	1930	940.0	1238	13380
42	-	-	-	-	-	-	-	1020	2083	-	2083	981.0	1289	16006
48	-	-	-	-	-	-	-	1166	2170	-	2170	1084.0	1467	23220

ASME Class 300 (Inch)

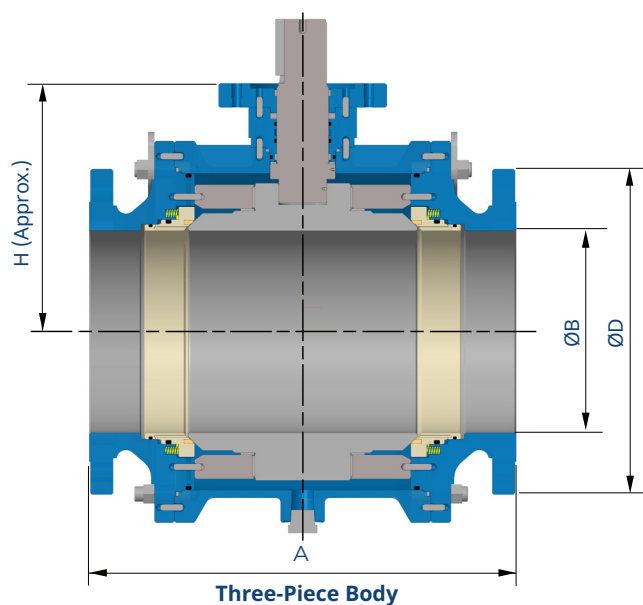
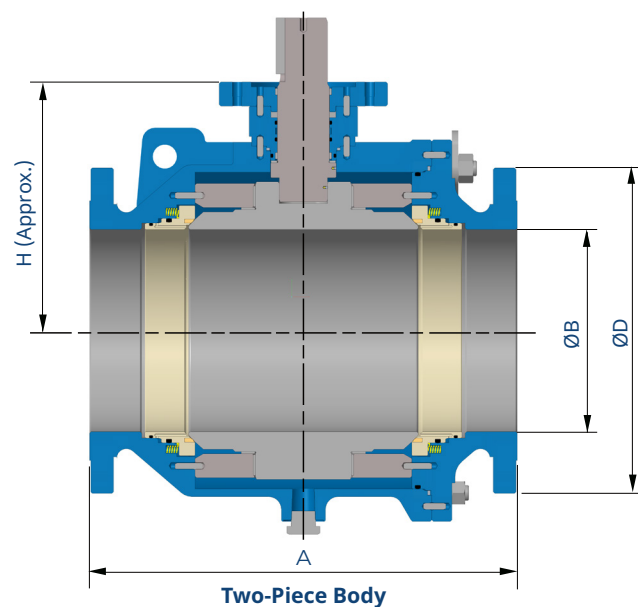
Size	Two - Piece							Three- Piece						
	ØB	A			H	ØD	WT(lbs)*	ØB	A			H	ØD	WT(lbs)*
NPS		RF	RTJ	BWE			FL		RF	RTJ	BWE			FL
2	1.93	8.50	9.13	8.50	4.53	6.50	51	-	-	-	-	-	-	-
3	2.91	11.13	11.75	11.13	6.00	8.25	86	-	-	-	-	-	-	-
4	3.94	12.00	12.63	12.00	7.10	10.00	143	-	-	-	-	-	-	-
6	5.91	15.88	16.50	18.00	9.30	12.50	414	-	-	-	-	-	-	-
8	7.91	19.75	20.38	20.50	10.63	15.00	537	-	-	-	-	-	-	-
10	9.92	22.38	23.00	22.00	12.09	17.50	994	-	-	-	-	-	-	-
12	11.93	25.50	26.13	25.00	14.40	20.50	1261	-	-	-	-	-	-	-
14	13.15	30.00	30.63	30.00	15.35	23.00	1685	-	-	-	-	-	-	-
16	15.16	33.00	33.63	33.00	16.54	25.50	2123	15.16	33.00	33.63	33.00	16.54	25.50	2611
18	17.16	36.00	36.63	36.00	18.50	28.00	3152	17.16	36.00	36.63	36.00	18.50	28.00	3432
20	19.17	39.00	39.75	39.00	21.10	30.50	3828	19.17	39.00	39.75	39.00	21.10	30.50	4840
24	23.19	45.00	45.88	45.00	24.60	36.00	5720	23.19	45.00	45.88	45.00	24.60	36.00	7700
26	-	-	-	-	-	-	-	24.92	49.00	50.00	49.00	25.83	38.25	9894
28	-	-	-	-	-	-	-	26.93	53.00	54.00	53.00	27.28	40.75	12119
30	-	-	-	-	-	-	-	28.94	55.00	56.00	55.00	29.17	43.00	15199
32	-	-	-	-	-	-	-	30.66	60.00	61.13	60.00	29.72	45.25	16768
34	-	-	-	-	-	-	-	32.68	64.00	65.13	64.00	30.83	47.50	19696
36	-	-	-	-	-	-	-	34.41	68.00	69.13	68.00	32.64	50.00	22196
40	-	-	-	-	-	-	-	38.43	76.00	-	76.00	37.01	48.75	29498
42	-	-	-	-	-	-	-	40.16	82.00	-	82.00	38.62	50.75	35287
48	-	-	-	-	-	-	-	45.90	85.43	-	85.43	42.68	57.75	51191

*Approximate Value.

Please consult DelVal® for actuator mounting details.

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DIMENSIONS AND WEIGHTS (FULL PORT)



ASME Class 600 (mm)

Size	Two - Piece							Three- Piece						
	ØB	A			H	ØD	WT(kg)*	ØB	A			H	ØD	WT(kg)*
NPS		RF	RTJ	BWE			FL		RF	RTJ	BWE			FL
2	49	292	295	292	136	165	28	-	-	-	-	-	-	-
3	74	356	359	356	165	210	51	-	-	-	-	-	-	-
4	100	432	435	432	185	273	85	-	-	-	-	-	-	-
6	150	559	562	559	240	356	193	-	-	-	-	-	-	-
8	201	660	664	660	270	419	325	-	-	-	-	-	-	-
10	252	787	791	787	310	508	560	-	-	-	-	-	-	-
12	303	838	841	838	375	559	810	-	-	-	-	-	-	-
14	334	889	892	889	398	603	972	-	-	-	-	-	-	-
16	385	991	994	991	450	686	1334	385	991	994	991	450.0	686	1821
18	436	1092	1095	1092	480	743	1866	436	1092	1095	1092	480.0	743	2730
20	487	1194	1200	1194	551	813	2415	487	1194	1200	1194	551.0	813	3270
24	589	1397	1407	1397	650	940	3840	589	1397	1407	1397	650.0	940	5975
26	-	-	-	-	-	-	-	633	1448	1461	1448	675.0	1016	6678
28	-	-	-	-	-	-	-	684	1549	1562	1549	715.0	1073	7541
30	-	-	-	-	-	-	-	735	1651	1664	1651	771.0	1130	8355
32	-	-	-	-	-	-	-	779	1778	1794	1778	815.0	1194	9580
34	-	-	-	-	-	-	-	830	1930	1946	1930	857.0	1245	10622
36	-	-	-	-	-	-	-	874	2083	2099	2083	899.0	1314	13026
40	-	-	-	-	-	-	-	976	2159	2172	2159	976.0	1321	18243
42	-	-	-	-	-	-	-	1020	2175	2188	2175	1031.0	1403	20254
48	-	-	-	-	-	-	-	1166	2435	2448	2435	1182.0	1594	29435

ASME Class 600 (Inch)

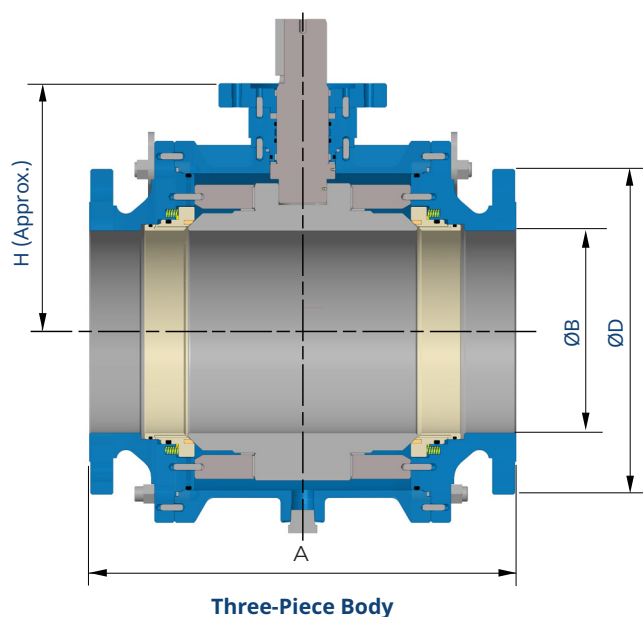
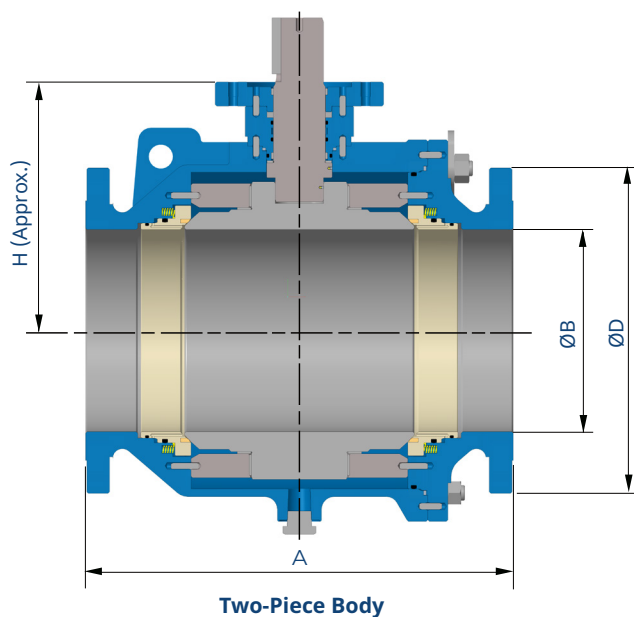
Size	Two - Piece							Three- Piece						
	ØB	A			H	ØD	WT(lbs)*	ØB	A			H	ØD	WT(lbs)*
NPS		RF	RTJ	BWE			FL		RF	RTJ	BWE			FL
2	1.93	11.50	11.63	11.50	5.36	6.50	62	-	-	-	-	-	-	-
3	2.91	14.00	14.13	14.00	6.50	8.25	112	-	-	-	-	-	-	-
4	3.94	17.00	17.13	17.00	7.29	10.75	187	-	-	-	-	-	-	-
6	5.91	22.00	22.13	22.00	9.45	14.00	425	-	-	-	-	-	-	-
8	7.91	26.00	26.13	26.00	10.63	16.50	715	-	-	-	-	-	-	-
10	9.92	31.00	31.13	31.00	12.21	20.00	1232	-	-	-	-	-	-	-
12	11.93	33.00	33.13	33.00	14.77	22.00	1782	-	-	-	-	-	-	-
14	13.15	35.00	35.13	35.00	15.67	23.75	2138	-	-	-	-	-	-	-
16	15.16	39.00	39.13	39.00	17.72	27.00	2934	15.16	39.00	39.13	39.00	17.72	27.00	4006
18	17.16	43.00	43.13	43.00	18.90	29.25	4105	17.16	43.00	43.13	43.00	18.90	29.25	6006
20	19.17	47.00	47.25	47.00	21.69	32.00	5313	19.17	47.00	47.25	47.00	21.69	32.00	7194
24	23.19	55.00	55.38	55.00	25.59	37.00	8448	23.19	55.00	55.38	55.00	25.59	37.00	13145
26	-	-	-	-	-	-	-	24.92	57.00	57.50	57.00	26.57	40.00	14722
28	-	-	-	-	-	-	-	26.93	61.00	61.50	61.00	28.15	42.25	16625
30	-	-	-	-	-	-	-	28.94	65.00	65.50	65.00	30.35	44.50	18419
32	-	-	-	-	-	-	-	30.66	70.00	70.63	70.00	32.09	47.00	21120
34	-	-	-	-	-	-	-	32.68	76.00	76.63	76.00	33.74	49.00	23417
36	-	-	-	-	-	-	-	34.41	82.00	82.63	82.00	35.39	51.75	28717
40	-	-	-	-	-	-	-	38.43	85.00	85.50	85.00	38.43	52.00	40219
42	-	-	-	-	-	-	-	40.16	85.63	86.13	85.63	40.59	55.25	44652
48	-	-	-	-	-	-	-	45.90	95.87	96.37	95.87	46.54	62.75	64892

*Approximate Value.

Please consult DelVal® for actuator mounting details.

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DIMENSIONS AND WEIGHTS (FULL PORT)



ASME Class 900 (mm)

Size	Two-Piece							Three-Piece						
	ØB	A			H	ØD	WT(kg)*	ØB	A			H	ØD	WT(kg)*
		RF	RTJ	BWE			FL		RF	RTJ	BWE			FL
2	49	368	371	368	152	216	60	-	-	-	-	-	-	-
3	74	381	384	381	165	241	70	-	-	-	-	-	-	-
4	100	457	460	457	210	292	114	-	-	-	-	-	-	-
6	150	610	613	610	250	381	257	-	-	-	-	-	-	-
8	201	737	740	737	310	470	421	-	-	-	-	-	-	-
10	252	838	841	838	336	546	635	-	-	-	-	-	-	-
12	303	965	968	965	388	610	1115	-	-	-	-	-	-	-
14	322	1029	1038	1029	425	641	1545	322	1029	1038	1029	425.0	641	2074
16	373	1130	1140	1130	475	705	2554	373	1130	1140	1130	475.0	705	2738
18	-	-	-	-	-	-	-	423	1219	1232	1219	560.0	787	3713
20	-	-	-	-	-	-	-	471	1321	1334	1321	578.0	857	4510
24	-	-	-	-	-	-	-	570	1549	1568	1549	730.0	1041	7343

ASME Class 900 (Inch)

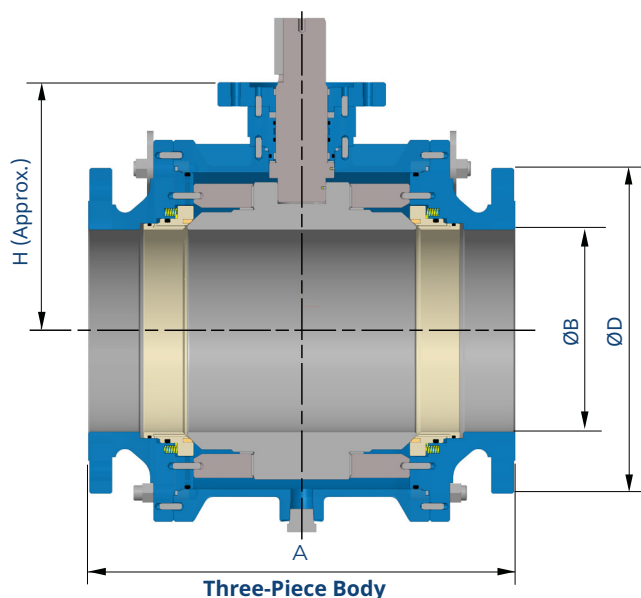
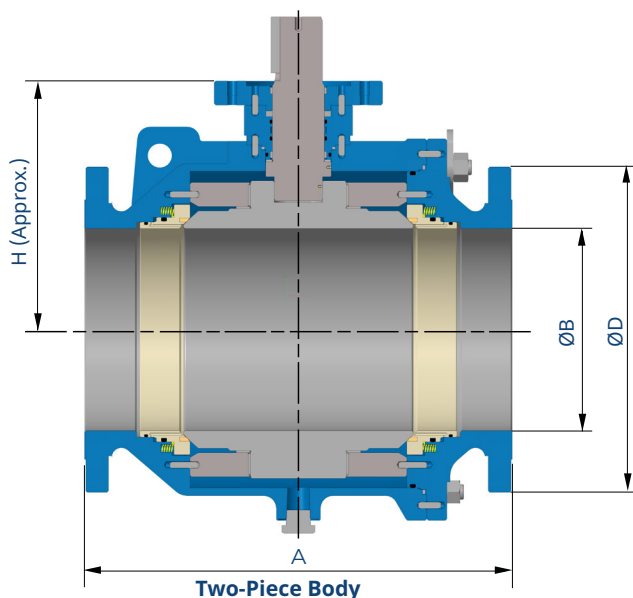
Size	Two-Piece							Three-Piece						
	ØB	A			H	ØD	WT(lbs)*	ØB	A			H	ØD	WT(lbs)*
		RF	RTJ	BWE			FL		RF	RTJ	BWE			FL
2	1.93	14.50	14.63	14.50	6.00	8.50	132	-	-	-	-	-	-	-
3	2.91	15.00	15.13	15.00	6.50	9.50	154	-	-	-	-	-	-	-
4	3.94	18.00	18.13	18.00	8.27	11.50	251	-	-	-	-	-	-	-
6	5.91	24.00	24.13	24.00	9.85	15.00	565	-	-	-	-	-	-	-
8	7.91	29.00	29.13	29.00	12.21	18.50	926	-	-	-	-	-	-	-
10	9.92	33.00	33.13	33.00	13.23	21.50	1397	-	-	-	-	-	-	-
12	11.93	38.00	38.13	38.00	15.28	24.00	2453	-	-	-	-	-	-	-
14	12.67	40.50	40.88	40.50	16.74	25.25	3400	12.67	40.50	40.88	40.50	16.74	25.25	4563
16	14.69	44.50	44.88	44.50	18.71	27.75	5619	14.69	44.50	44.88	44.50	18.71	27.75	6025
18	-	-	-	-	-	-	-	16.65	48.00	48.50	48.00	22.05	31.00	8186
20	-	-	-	-	-	-	-	18.54	52.00	52.50	52.00	22.76	33.75	9943
24	-	-	-	-	-	-	-	22.44	61.00	61.75	61.00	28.74	41.00	16188

*Approximate Value.

Please consult DelVal® for actuator mounting details.

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DIMENSIONS AND WEIGHTS (FULL PORT)



ASME Class 1500 (mm)

Size NPS	Two-Piece							Three-Piece						
	ØB	A			H	ØD	WT(kg)* FL	ØB	A			H	ØD	WT(kg)* FL
		RF	RTJ	BWE					RF	RTJ	BWE			
2	49	368	371	368	152	216	82	-	-	-	-	-	-	-
3	74	470	473	470	180	267	102	-	-	-	-	-	-	-
4	100	546	549	546	210	311	165	-	-	-	-	-	-	-
6	144	705	711	705	270	394	405	-	-	-	-	-	-	-
8	192	832	841	832	370	483	865	-	-	-	-	-	-	-
10	239	991	1000	991	470	584	1818	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	287	1130	1146	1130	480	673	2485
14	-	-	-	-	-	-	-	315	1257	1276	1257	491.0	749	3100
16	-	-	-	-	-	-	-	360	1384	1407	1384	514.0	826	3667
18	-	-	-	-	-	-	-	406	1537	1559	1537	587.0	914	4916
20	-	-	-	-	-	-	-	454	1664	1686	1664	670.0	984	6156
24	-	-	-	-	-	-	-	546	1943	1972	1943	720.0	1168	9684

ASME Class 1500 (Inch)

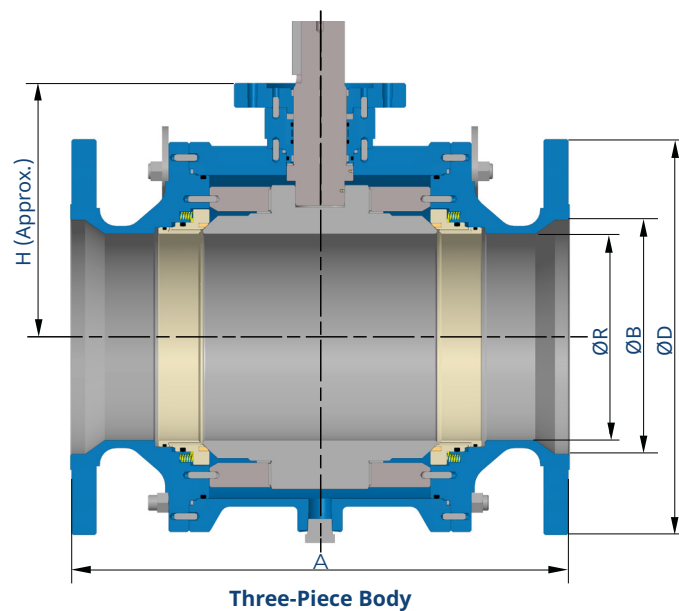
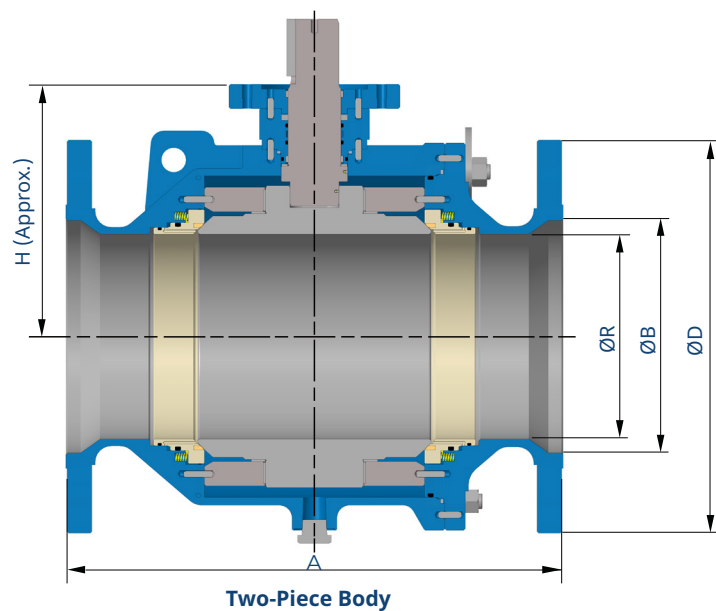
Size NPS	Two-Piece							Three-Piece						
	ØB	A			H	ØD	WT(lbs)* FL	ØB	A			H	ØD	WT(lbs)* FL
		RF	RTJ	BWE					RF	RTJ	BWE			
2	1.93	14.50	14.63	14.50	6.00	8.50	180	-	-	-	-	-	-	-
3	2.91	18.50	18.63	18.50	7.09	10.50	224	-	-	-	-	-	-	-
4	3.94	21.50	21.63	21.50	8.27	12.25	363	-	-	-	-	-	-	-
6	5.67	27.75	28.00	27.75	10.63	15.50	891	-	-	-	-	-	-	-
8	7.55	32.75	33.13	32.75	14.57	19.00	1903	-	-	-	-	-	-	-
10	9.41	39.00	39.38	39.00	18.50	23.00	3999	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	11.30	44.50	45.13	44.50	18.90	26.50	5467
14	-	-	-	-	-	-	-	12.40	49.50	50.25	49.50	19.33	29.50	6835
16	-	-	-	-	-	-	-	14.17	54.50	55.38	54.50	20.24	32.50	8083
18	-	-	-	-	-	-	-	15.98	60.50	61.38	60.50	23.11	36.00	10837
20	-	-	-	-	-	-	-	17.87	65.50	66.38	65.50	26.38	38.75	13572
24	-	-	-	-	-	-	-	21.50	76.50	77.63	76.50	28.35	46.00	21350

*Approximate Value.

Please consult DelVal® for actuator mounting details.

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DIMENSIONS AND WEIGHTS (REDUCED PORT)



ASME Class 150 (mm)

Size	Two-Piece								Three-Piece							
	ØB	ΦR	A			H	ØD	WT(Kg)*	ØB	ØR	A			H	ØD	WT(kg)*
			RF	RTJ	BWE						RF	RTJ	BWE			
NPS	ØB	ΦR	RF	RTJ	BWE	H	ØD	FL	ØB	ØR	RF	RTJ	BWE	H	ØD	FL
2x1.5	49	38	178	191	216	104	152	20	-	-	-	-	-	-	-	-
3x2	74	49	203	216	283	114	190	22	-	-	-	-	-	-	-	-
4x3	100	74	229	241	305	148	229	32	-	-	-	-	-	-	-	-
6x4	150	100	394	406	457	173	279	53	-	-	-	-	-	-	-	-
8x6	201	150	457	470	521	222	343	124	-	-	-	-	-	-	-	-
10x8	252	201	533	546	559	270	406	221	-	-	-	-	-	-	-	-
12x10	303	252	610	622	635	310	483	425	-	-	-	-	-	-	-	-
14x10	334	252	686	699	762	310	533	452	-	-	-	-	-	-	-	-
16x12	385	303	762	775	838	360	597	600	-	-	-	-	-	-	-	-
18x14	436	334	864	876	914	385	635	865	-	-	-	-	-	-	-	-
20x16	487	385	914	927	991	420	698	996	487	385	914	927	991	420	698	1200
24x20	589	487	1067	1080	1143	513	813	1685	589	487	1067	1080	1143	513	813	2030

ASME Class 150 (Inch)

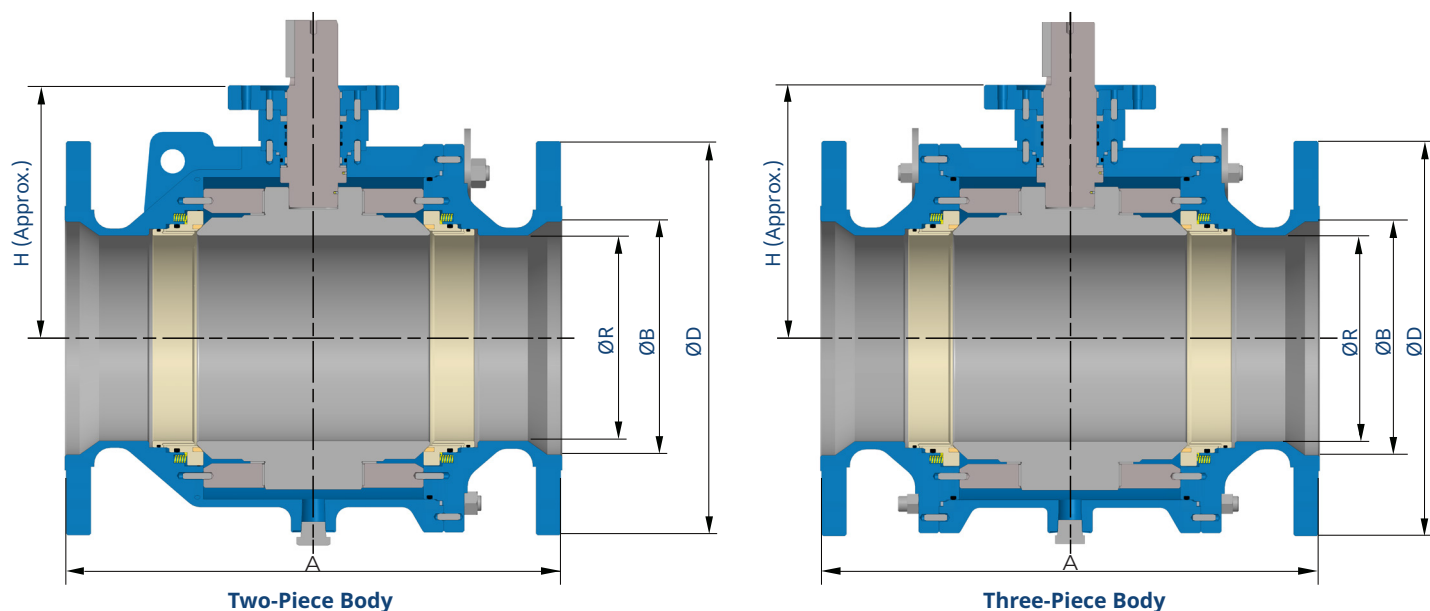
Size	Two-Piece								Three-Piece							
	ØB	ΦR	A			H	ØD	WT(lbs)*	ØB	ØR	A			H	ØD	WT(lbs)*
			RF	RTJ	BWE						RF	RTJ	BWE			
NPS	ØB	ΦR	RF	RTJ	BWE	H	ØD	FL	ØB	ØR	RF	RTJ	BWE	H	ØD	FL
2x1.5	1.93	1.50	7	7.5	8.5	4.10	6	44	-	-	-	-	-	-	-	-
3x2	2.91	1.93	8.00	8.50	11.13	4.49	7.50	48	-	-	-	-	-	-	-	-
4x3	3.94	2.91	9.00	9.50	12.00	5.83	9.00	70	-	-	-	-	-	-	-	-
6x4	5.91	3.94	15.50	16.00	18.00	6.82	11.00	117	-	-	-	-	-	-	-	-
8x6	7.91	5.91	18.00	18.50	20.50	8.75	13.50	273	-	-	-	-	-	-	-	-
10x8	9.92	7.91	21.00	21.50	22.00	10.63	16.00	486	-	-	-	-	-	-	-	-
12x10	11.93	9.92	24.00	24.50	25.00	12.21	19.00	935	-	-	-	-	-	-	-	-
14x10	13.15	9.92	27.00	27.50	30.00	12.21	21.00	994	-	-	-	-	-	-	-	-
16x12	15.16	11.93	30.00	30.50	33.00	14.18	23.50	1320	-	-	-	-	-	-	-	-
18x14	17.16	13.15	34.00	34.50	36.00	15.16	25.00	1903	-	-	-	-	-	-	-	-
20x16	19.17	15.16	36.00	36.50	39.00	16.54	27.50	2191	19.17	15.16	36.00	36.50	39.00	16.54	27.50	2640
24x20	23.19	19.17	42.00	42.50	45.00	20.20	32.00	3707	23.19	19.17	42.00	42.50	45.00	20.20	32.00	4466

*Approximate Value.

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DIMENSIONS AND WEIGHTS (REDUCED PORT)



ASME Class 300 (mm)

Size	Two-Piece								Three-Piece							
	ØB	ΦR	A			H	ØD	WT(Kg)*	ØB	ØR	A			H	ØD	WT(kg)*
			RF	RTJ	BWE						RF	RTJ	BWE			
NPS								FL								FL
2x1.5	49	38	216	232	216	110	165	18	-	-	-	-	-	-	-	-
3x2	74	49	283	298	283	115	210	30	-	-	-	-	-	-	-	-
4x3	100	74	305	321	305	152	254	49	-	-	-	-	-	-	-	-
6x4	150	100	403	419	457	180	318	84	-	-	-	-	-	-	-	-
8x6	201	150	502	518	521	236	381	172	-	-	-	-	-	-	-	-
10x8	252	201	568	584	559	270	444	273	-	-	-	-	-	-	-	-
12x10	303	252	648	664	635	307	521	511	-	-	-	-	-	-	-	-
14x10	334	252	762	778	762	307	584	641	-	-	-	-	-	-	-	-
16x12	385	303	838	854	838	366	648	800	-	-	-	-	-	-	-	-
18x14	436	334	914	930	914	390	711	1210	436	334	914	930	914	390	711	1400
20x16	487	385	991	1010	991	420	775	1215	487	385	991	1010	991	420	775	1465
24x20	589	487	1143	1165	1143	536	914	1992	589	487	1143	1165	1143	536	914	2400

ASME Class 300 (Inch)

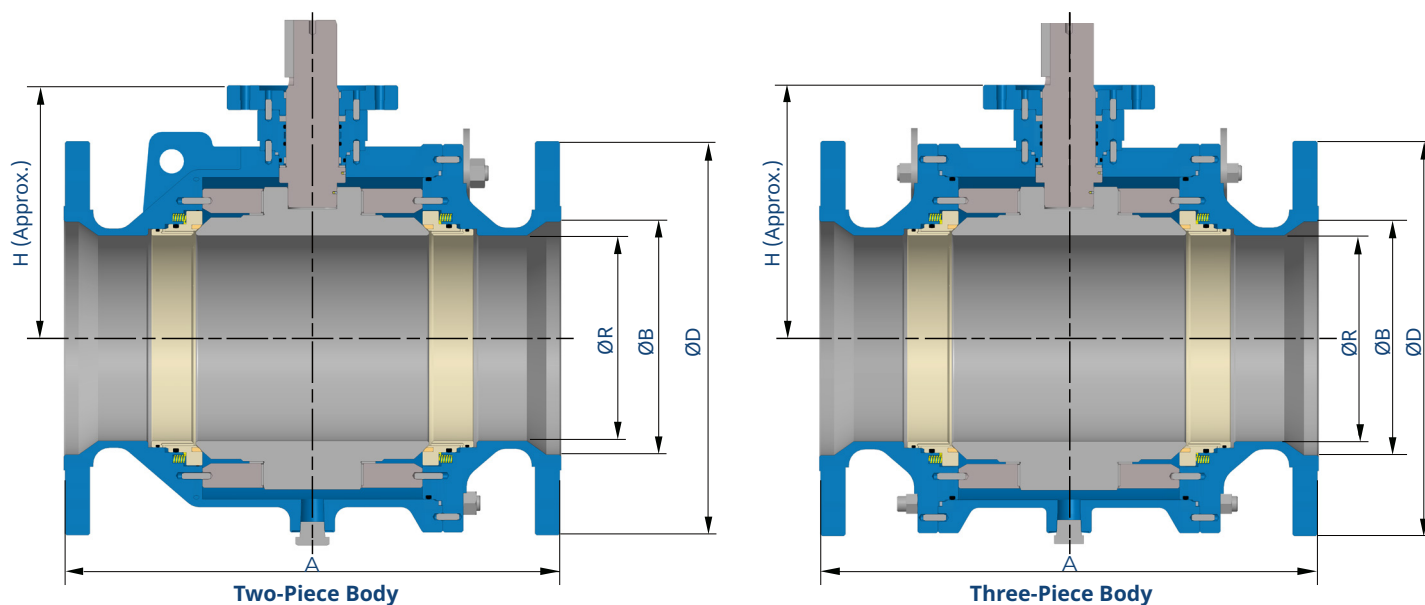
Size	Two-Piece								Three-Piece							
	ØB	ΦR	A			H	ØD	WT(lbs)*	ØB	ØR	A			H	ØD	WT(lbs)*
			RF	RTJ	BWE						RF	RTJ	BWE			
NPS								FL								FL
2x1.5	1.93	1.50	8.50	9.13	8.50	4.33	6.00	40	-	-	-	-	-	-	-	-
3x2	2.91	1.93	11.13	11.75	11.13	4.53	8.25	66	-	-	-	-	-	-	-	-
4x3	3.94	2.91	12.00	12.63	12.00	6.00	10.00	108	-	-	-	-	-	-	-	-
6x4	5.91	3.94	15.88	16.50	18.00	7.09	12.50	185	-	-	-	-	-	-	-	-
8x6	7.91	5.91	19.75	20.38	20.50	9.30	15.00	379	-	-	-	-	-	-	-	-
10x8	9.92	7.91	22.38	23.00	22.00	10.63	17.50	601	-	-	-	-	-	-	-	-
12x10	11.93	9.92	25.50	26.13	25.00	12.09	20.50	1124	-	-	-	-	-	-	-	-
14x10	13.15	9.92	30.00	30.63	30.00	12.09	23.00	1410	-	-	-	-	-	-	-	-
16x12	15.16	11.93	33.00	33.63	33.00	14.40	25.50	1760	-	-	-	-	-	-	-	-
18x14	17.16	13.15	36.00	36.63	36.00	15.35	28.00	2662	17.16	13.15	36.00	36.63	36.00	15.35	28.00	3080
20x16	19.17	15.16	39.00	39.75	39.00	16.53	30.50	2673	19.17	15.16	39.00	39.75	39.00	16.53	30.50	3223
24x20	23.19	19.17	45.00	45.88	45.00	21.10	36.00	4382	23.19	19.17	45.00	45.88	45.00	21.10	36.00	5280

*Approximate Value.

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DIMENSIONS AND WEIGHTS (REDUCED PORT)



ASME Class 600 (mm)

Size	Two-Piece								Three- Piece							
	ØB	ØR	A			H	ØD	WT(kg)*	ØB	ØR	A			H	ØD	WT(kg)*
			RF	RTJ	BWE						RF	RTJ	BWE			
2x1.5	49	38	292	295	292	112	165	27	-	-	-	-	-	-	-	-
3x2	74	49	356	359	356	136	210	30	-	-	-	-	-	-	-	-
4x3	100	74	432	435	432	165	273	68	-	-	-	-	-	-	-	-
6x4	150	100	559	562	559	185	356	124	-	-	-	-	-	-	-	-
8x6	201	150	660	664	660	240	419	241	-	-	-	-	-	-	-	-
10x8	252	201	787	791	787	270	508	418	-	-	-	-	-	-	-	-
12x10	303	252	838	841	838	310	559	605	-	-	-	-	-	-	-	-
14x10	334	252	889	892	889	310	603	679	-	-	-	-	-	-	-	-
16x12	385	303	991	994	991	375	686	1025	-	-	-	-	-	-	-	-
18x14	436	334	1092	1095	1092	398	743	1540	436	334	1092	1095	1092	398	743	2150
20x16	487	385	1194	1200	1194	450	813	2158	487	436	1194	1200	1194	450	813	2600
24x20	589	487	1397	1407	1397	551	940	2847	589	487	1397	1407	1397	551	940	3430

ASME Class 600 (Inch)

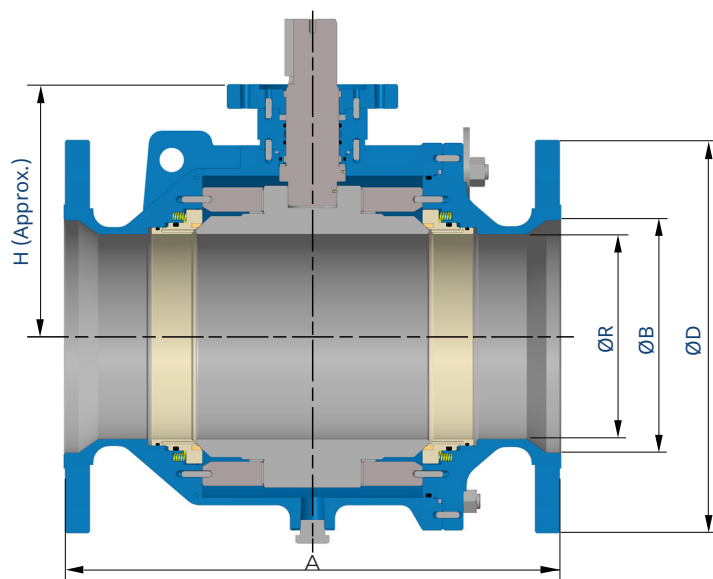
Size	Two-Piece								Three- Piece							
	ØB	ØR	A			H	ØD	WT(lbs)*	ØB	ØR	A			H	ØD	WT(lbs)*
			RF	RTJ	BWE						RF	RTJ	BWE			
2x1.5	1.93	1.50	11.50	11.63	11.50	4.41	6.50	59	-	-	-	-	-	-	-	-
3x2	2.91	1.93	14.00	14.13	14.00	5.36	8.25	66	-	-	-	-	-	-	-	-
4x3	3.94	2.91	17.00	17.13	17.00	6.50	10.75	150	-	-	-	-	-	-	-	-
6x4	5.91	3.94	22.00	22.13	22.00	7.29	14.00	273	-	-	-	-	-	-	-	-
8x6	7.91	5.91	26.00	26.13	26.00	9.45	16.50	530	-	-	-	-	-	-	-	-
10x8	9.92	7.91	31.00	31.13	31.00	10.63	20.00	920	-	-	-	-	-	-	-	-
12x10	11.93	9.92	33.00	33.13	33.00	12.21	22.00	1331	-	-	-	-	-	-	-	-
14x10	13.15	9.92	35.00	35.13	35.00	12.21	23.75	1494	-	-	-	-	-	-	-	-
16x12	15.16	11.93	39.00	39.13	39.00	14.77	27.00	2255	-	-	-	-	-	-	-	-
18x14	17.16	13.15	43.00	43.13	43.00	15.67	29.25	3388	17.16	13.15	43.00	43.13	43.00	15.67	29.25	4730
20x16	19.17	15.16	47.00	47.25	47.00	17.72	32.00	4747	19.17	15.16	47.00	47.25	47.00	17.72	32.00	5720
24x20	23.19	19.17	55.00	55.38	55.00	21.69	37.00	6263	23.19	19.1	55.00	55.38	55.00	21.69	37.00	7546

*Approximate Value.

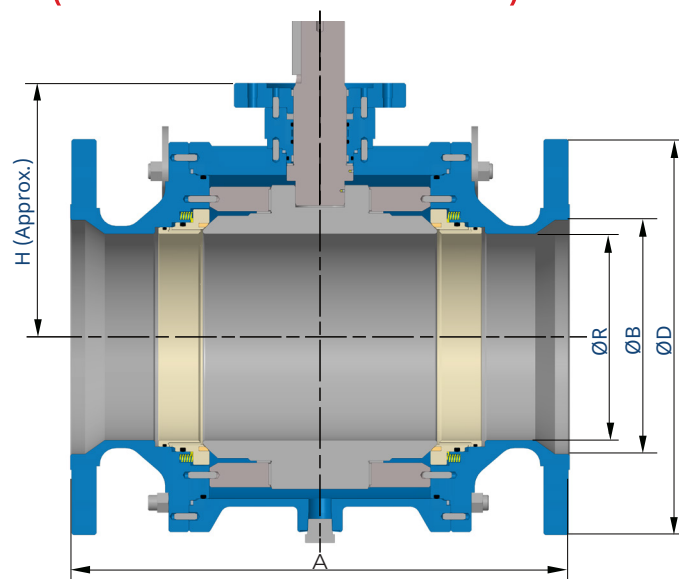
Please consult DelVal® for actuator mounting details.

DelVal® reserves the right to change the content without notice. Please consult DelVal® for other sizes and dimensions.

DIMENSIONS AND WEIGHTS (REDUCED PORT)



Two-Piece Body



Three-Piece Body

ASME Class 900 (mm)

Size	Two-Piece								Three-Piece							
	ØB	ΦR	A			H	ØD	WT(kg)* FL	ØB	ØR	A			H	ØD	WT(kg)* FL
NPS			RF	RTJ	BWE						RF	RTJ	BWE			
2x1.5	49	38	368	371	368	133	216	63	-	-	-	-	-	-	-	-
3x2	74	49	381	384	381	152	241	91	-	-	-	-	-	-	-	-
4x3	100	74	457	460	457	165	292	177	-	-	-	-	-	-	-	-
6x4	150	100	610	613	610	210	381	210	-	-	-	-	-	-	-	-
8x6	201	150	737	740	737	250	470	348	-	-	-	-	-	-	-	-
10x8	252	201	838	841	838	310	546	783	-	-	-	-	-	-	-	-
12x10	303	252	965	968	965	336	610	984	-	-	-	-	-	-	-	-
14x10	322	252	1029	1038	1029	336	641	1115	-	-	-	-	-	-	-	-
16x12	373	303	1130	1140	1130	388	705	1316	-	-	-	-	-	-	-	-
18x14	423	322	1219	1232	1219	425	787	1894	-	-	-	-	-	-	-	-
18x16	-	-	-	-	-	-	-	-	423	373	1219	1232	1219	475.0	787	2752
20x16	-	-	-	-	-	-	-	-	471	373	1321	1334	1321	475.0	857	2901
20x18	-	-	-	-	-	-	-	-	471	423	1321	1334	1321	560.0	857	4035
24x20	-	-	-	-	-	-	-	-	570	471	1549	1568	1549	578.0	1041	5620
28x24	-	-	-	-	-	-	-	-	665	570	1753	1775	1753	730.0	1168	8677
30x24	-	-	-	-	-	-	-	-	712	570	1880	1902	1880	730.0	1232	8973

ASME Class 900 (Inch)

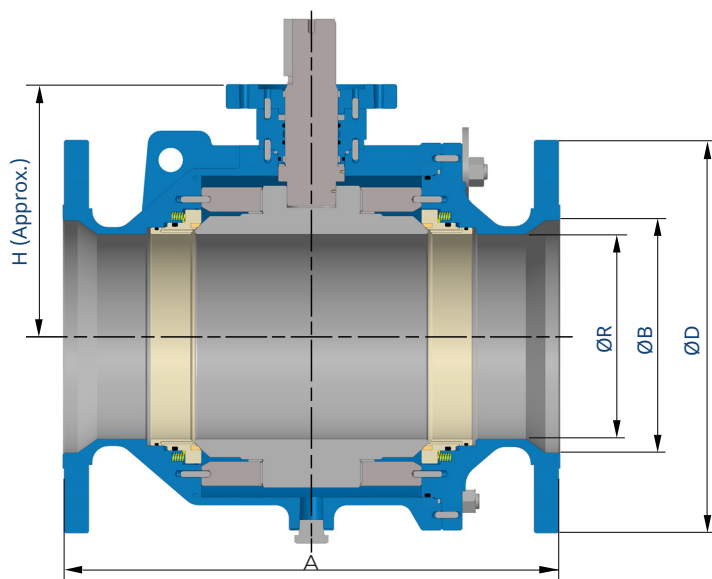
Size	Two-Piece								Three-Piece							
	ØB	ΦR	A			H	ØD	WT(lbs)* FL	ØB	ØR	A			H	ØD	WT(lbs)* FL
NPS			RF	RTJ	BWE						RF	RTJ	BWE			
2x1.5	1.93	1.50	14.50	14.63	14.50	5.24	8.50	139	-	-	-	-	-	-	-	-
3x2	2.91	1.93	15.00	15.13	15.00	6.00	9.50	200	-	-	-	-	-	-	-	-
4x3	3.94	2.91	18.00	18.13	18.00	6.50	11.50	389	-	-	-	-	-	-	-	-
6x4	5.91	3.94	24.00	24.13	24.00	8.27	15.00	462	-	-	-	-	-	-	-	-
8x6	7.91	5.91	29.00	29.13	29.00	9.85	18.50	766	-	-	-	-	-	-	-	-
10x8	9.92	7.91	33.00	33.13	33.00	12.21	21.50	1723	-	-	-	-	-	-	-	-
12x10	11.93	9.92	38.00	38.13	38.00	13.23	24.00	2165	-	-	-	-	-	-	-	-
14x10	12.67	9.92	40.50	40.88	40.50	13.23	25.25	2453	-	-	-	-	-	-	-	-
16x12	14.69	11.93	44.50	44.88	44.50	15.28	27.75	2897	-	-	-	-	-	-	-	-
18x14	16.65	12.67	48.00	48.50	48.00	16.73	31.00	4168	-	-	-	-	-	-	-	-
18x16	-	-	-	-	-	-	-	-	16.65	14.69	48.00	48.50	48.00	18.70	31.00	6068
20x16	-	-	-	-	-	-	-	-	18.54	14.69	52.00	52.50	52.00	18.70	33.75	6396
20x18	-	-	-	-	-	-	-	-	18.54	16.65	52.00	52.50	52.00	22.05	33.75	8895
24x20	-	-	-	-	-	-	-	-	22.44	18.54	61.00	61.75	61.00	22.76	41.00	12390
28x24	-	-	-	-	-	-	-	-	26.18	22.44	69.00	69.88	69.00	28.74	46.00	19130
30x24	-	-	-	-	-	-	-	-	28.03	22.44	74.00	74.88	74.00	28.74	48.50	19782

*Approximate Value.

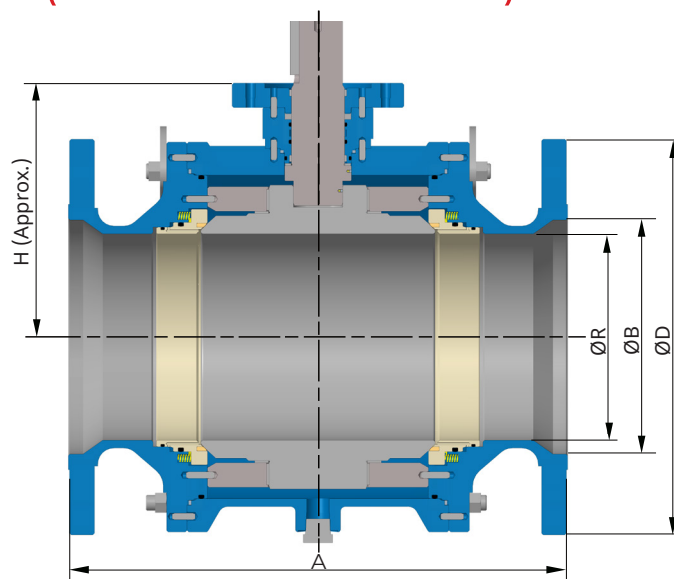
Please consult DelVal® for actuator mounting details.

DelVal® reserves the right to change the content without notice. Please consult DelVal® for other sizes and dimensions.

DIMENSIONS AND WEIGHTS (REDUCED PORT)



Two-Piece Body



Three-Piece Body

ASME Class 1500 (mm)

Size	Two-Piece								Three-Piece							
	ØB	ΦR	A			H	ØD	WT(kg)* FL	ØB	ØR	A			H	ØD	WT(kg)* FL
			RF	RTJ	BWE						RF	RTJ	BWE			
2x1.5	49	38	368	371	368	133	216	63	-	-	-	-	-	-	-	-
3x2	74	49	470	473	470	152	267	100	-	-	-	-	-	-	-	-
4x3	100	74	546	549	546	180	311	130	-	-	-	-	-	-	-	-
6x4	144	100	705	711	705	210	394	270	-	-	-	-	-	-	-	-
8x6	192	144	832	841	832	270	483	600	-	-	-	-	-	-	-	-
10x8	239	192	991	1000	991	370	584	1200	-	-	-	-	-	-	-	-
12x10	287	239	1130	1146	1130	388	673	2288	-	-	-	-	-	-	-	-
14x10	315	239	1257	1276	1257	388	749	2880	-	-	-	-	-	-	-	-
14X12	-	-	-	-	-	-	-	-	315	287	1257	1276	1257	480.0	749	2976
16X12	-	-	-	-	-	-	-	-	360	287	1384	1407	1384	480.0	826	3141
16X14	-	-	-	-	-	-	-	-	360	315	1384	1407	1384	491.0	826	4147
18X14	-	-	-	-	-	-	-	-	406	315	1537	1559	1537	491.0	914	4497
18X16	-	-	-	-	-	-	-	-	406	360	1537	1559	1537	514.0	914	5416
20X16	-	-	-	-	-	-	-	-	454	360	1664	1686	1664	514.0	984	9711
20X18	-	-	-	-	-	-	-	-	454	406	1664	1686	1664	587.0	984	7419
24X20	-	-	-	-	-	-	-	-	546	454	1943	1972	1943	670.0	1168	11467

ASME Class 1500 (Inch)

Size	Two - Piece								Three- Piece							
	ØB	ΦR	A			H	ØD	WT(lbs)*	ØB	ØR	A			H	ØD	WT(lbs)*
			RF	RTJ	BWE						RF	RTJ	BWE			
2x1.5	1.93	1.50	14.50	14.63	14.50	5.24	8.50	137	-	-	-	-	-	-	-	-
3x2	2.91	1.93	18.50	18.63	18.50	6.00	10.50	220	-	-	-	-	-	-	-	-
4x3	3.94	2.91	21.50	21.63	21.50	7.09	12.25	286	-	-	-	-	-	-	-	-
6x4	5.67	3.94	27.75	28.00	27.75	8.27	15.50	594	-	-	-	-	-	-	-	-
8x6	7.55	5.67	32.75	33.13	32.75	10.63	19.00	1320	-	-	-	-	-	-	-	-
10x8	9.41	7.55	39.00	39.38	39.00	14.57	23.00	2640	-	-	-	-	-	-	-	-
12x10	11.30	9.41	44.50	45.13	44.50	15.27	26.50	5034	-	-	-	-	-	-	-	-
14x10	12.40	9.41	49.50	50.25	49.50	15.27	29.50	3168	-	-	-	-	-	-	-	-
14X12	-	-	-	-	-	-	-	-	12.40	11.30	49.50	50.25	49.50	18.90	29.50	6560
16X12	-	-	-	-	-	-	-	-	14.17	11.30	54.50	55.38	54.50	18.90	32.50	6925
16X14	-	-	-	-	-	-	-	-	14.17	12.40	54.50	55.38	54.50	19.33	32.50	9142
18X14	-	-	-	-	-	-	-	-	15.98	12.40	60.50	61.38	60.50	19.33	36.00	9913
18X16	-	-	-	-	-	-	-	-	15.98	14.17	60.50	61.38	60.50	20.24	36.00	11940
20X16	-	-	-	-	-	-	-	-	17.87	14.17	65.50	66.38	65.50	20.24	38.75	21409
20X18	-	-	-	-	-	-	-	-	17.87	15.98	65.50	66.38	65.50	23.11	38.75	16355
24X20	-	-	-	-	-	-	-	-	21.50	17.87	76.50	77.63	76.50	26.38	46.00	25281

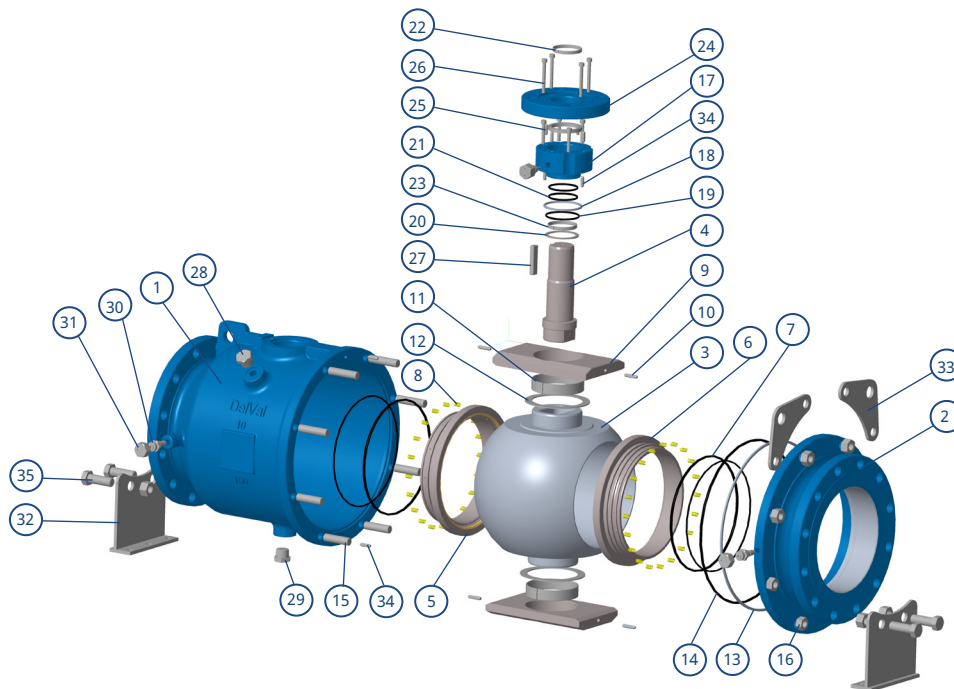
*Approximate Value.

Please consult DelVal® for actuator mounting details.

DelVal® reserves the right to change the content without notice. Please consult DelVal® for other sizes and dimensions.

STANDARD MATERIALS OF CONSTRUCTION

Two - Piece Body Side Entry Soft Seat Ball Valve



Part List

Item	Description	Standard Material*
1	Body	ASTM A 216 WCB / ASTM A 352 LCB / ASTM A 351 CF8M, CF3M / ASTM A 995 4A, 5A, 6A / ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, F316L, F51, F53, F55
2	Connector	ASTM A 105+ENP / ASTM A 216 WCC+ENP / ASTM A 350 LF2+ENP / ASTM A 182 F316, F304, F316L, F51, F53, F55
3	Ball	ASTM A 105+ENP / ASTM A 216 WCC+ENP / ASTM A 350 LF2+ENP / ASTM A 182 F316, F304, F316L, F51, F53, F55
4	Stem	ASTM A 322 4130+ENP / ASTM A 479 SS316, SS304, XM-19, SS410-cond.2 / ASTM A 564 Type 630 17-4PH
5**	Seat Insert	Devlon® / PEEK / PCTFE
6**	Seat Ring	ASTM A 105+ENP / ASTM A 350 LF2+ENP / ASTM A 182 F316, F304, 316L, F51, F53, F55
7**	Seat Seal	VITON® (FKM) AED / HNBR AED
8**	Seat Spring	Inconel B637 X - 750
9	Trunnion	ASTM A 516 Gr 70 / ASTM A 105 / ASTM A 350 LF2 / ASTM A 240 SS316, SS304 / DUPLEX SS / SUPER DUPLEX SS
10	Pin	ASTM A 479 SS316
11**	Trunnion Bearing	SS / DSS - BACKED PTFE
12**	Thrust Bearing	SS / DSS - BACKED PTFE
13**	Connector Seal	VITON® (FKM) AED / HNBR AED
14**	Body Gasket	SWG ASTM A240 SS316 / SS316L + Graphite
15	Stud	ASTM A 193 B7M, B8MA / ASTM A 320 L7M
16	Hex Nut	ASTM A 194 2HM, 8MA, 7M
17	Stem Housing	ASTM A 216 WCB / ASTM A 352 LCB / ASTM A 351 CF8M, CF3M / ASTM A 995 4A, 5A, 6A / ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, F316L, F51, F53, F55
18**	Housing Gasket	Graphite

Item	Description	Standard Material*
19**	Housing Seal	VITON® (FKM) AED / HNBR AED
20**	Stem Thrust Bearing	SS / DSS- BACKED PTFE
21**	Stem Seal	VITON® (FKM) AED / HNBR AED
22**	Stem Packing	Graphite
23**	Stem Bearing	SS / DSS- BACKED PTFE
24	ISO Plate	ASTM A 536 Gr 70 / ASTM A 105 / ASTM A 350 LF2 / ASTM A 240 SS316, SS304 / DUPLEX SS / SUPER DUPLEX SS
25**	Bearing	SS / DSS- BACKED PTFE
26	Soc Hd Cap Screw	ISO 3506 A2-70
27	Key	4130 / BS 970 EN8
28	Vent Fitting	ASTM A 105 / ASTM A 479 SS316 / ASTM A 182 F51, F55
29	Bleed Fitting	
30	Check Valve	ASTM A 479 SS316 / ASTM A 182 F51, F55
31	Sealent Fitting	ASTM A 105 / ASTM A 479 SS316 / ASTM A 182 F51, F55
32	Mounting Stand	ASTM A36
33	Lifting Hook	ASTM A36 / ASTM A516 Gr.70 / ASTM A240 SS304
34	Pin	ASTM A479 SS316
35	Fasteners	ASTM A193 B7 / 2H

*Other materials may be available on request.

** Recommended spares.

Lifting Points and Support:

DN 150/6" and above Class 150,300, 600, 900.

DN 100/4" and above Class 1500, 2500.

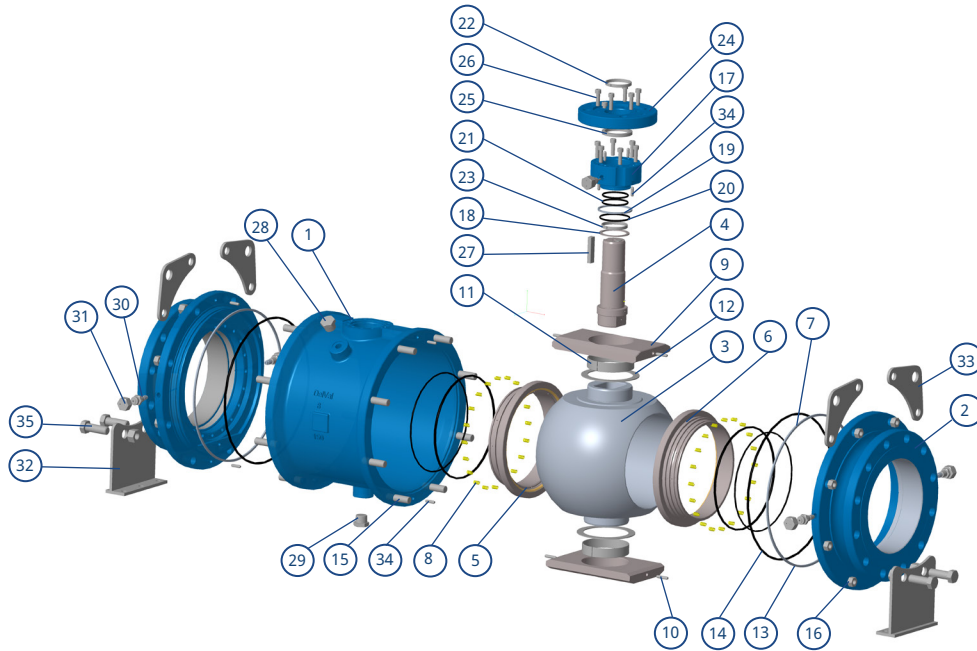
Weld Overlays

Sealing areas and other critical parts of the valve can be weld overlaid in case of corrosive service.

More frequently used materials are SS316L and Alloy 625.

STANDARD MATERIALS OF CONSTRUCTION

Three - Piece Body Side Entry Soft Seat Ball Valve



Part List

Item	Description	Standard Material*
1	Body	ASTM A 216 WCB / ASTM A 352 LCB / ASTM A 351 CF8M, CF3M / ASTM A 995 4A, 5A, 6A / ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, F316L, F51, F53, F55
2	Connector	
3	Ball	ASTM A 105+ENP / ASTM A 216 WCC+ENP / ASTM A 350 LF2+ENP / ASTM A 182 F316, F304, F316L, F51, F53, F55
4	Stem	ASTM A 322 4130+ENP / ASTM A 479 SS316, SS304, XM-19, SS410-cond.2 / ASTM A 564 Type 630 17-4PH
5**	Seat Insert	Devlon® / PEEK / PCTFE
6**	Seat Ring	ASTM A 105+ENP / ASTM A 350 LF2+ENP / ASTM A 182 F316, F304, 316L, F51, F53, F55
7**	Seat Seal	VITON® (FKM) AED / HNBR AED
8**	Seat Spring	Inconel B637 X - 750
9	Trunnion	ASTM A 516 Gr 70 / ASTM A 105 / ASTM A 350 LF2 / ASTM A 240 SS316, SS304 / DUPLEX SS / SUPER DUPLEX SS
10	Pin	ASTM A 479 SS316
11**	Trunnion Bearing	SS / DSS - BACKED PTFE
12**	Thrust Bearing	SS / DSS - BACKED PTFE
13**	Connector Seal	VITON® (FKM) AED / HNBR AED
14**	Body Gasket	SWG ASTM A240 SS316 / SS316L + Graphite
15	Stud	ASTM A 193 B7M, B8MA / ASTM A 320 L7M
16	Hex Nut	ASTM A 194 2HM, 8MA, 7M
17	Stem Housing	ASTM A 216 WCB / ASTM A 352 LCB / ASTM A 351 CF8M, CF3M / ASTM A 995 4A, 5A, 6A / ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, F316L, F51, F53, F55
18**	Housing Gasket	Graphite

Item	Description	Standard Material*
19**	Housing Seal	VITON® (FKM) AED / HNBR AED
20**	Stem Thrust Bearing	SS / DSS- BACKED PTFE
21**	Stem Seal	VITON® (FKM) AED / HNBR AED
22**	Stem Packing	Graphite
23**	Stem Bearing	SS / DSS- BACKED PTFE
24	ISO Plate	ASTM A 536 Gr 70 / ASTM A 105 / ASTM A 350 LF2 / ASTM A 240 SS316, SS304 / DUPLEX SS / SUPER DUPLEX SS
25**	Bearing	SS / DSS- BACKED PTFE
26	Soc Hd Cap Screw	ISO 3506 A2-70
27	Key	4130 / BS 970 EN8
28	Vent Fitting	
29	Bleed Fitting	ASTM A 105 / ASTM A 479 SS316 / ASTM A 182 F51, F55
30	Check Valve	ASTM A 479 SS316 / ASTM A 182 F51, F55
31	Sealent Fitting	ASTM A 105 / ASTM A 479 SS316 / ASTM A 182 F51, F55
32	Mounting Stand	ASTM A36
33	Lifting Hook	ASTM A36 / ASTM A516 Gr.70 / ASTM A240 SS304
34	Pin	ASTM A479 SS316
35	Fasteners	ASTM A193 B7 / 2H

*Other materials may be available on request.

** Recommended spares.

Lifting Points and Support:

DN 150/6" and above Class 150,300, 600, 900.

DN 100/4" and above Class 1500, 2500.

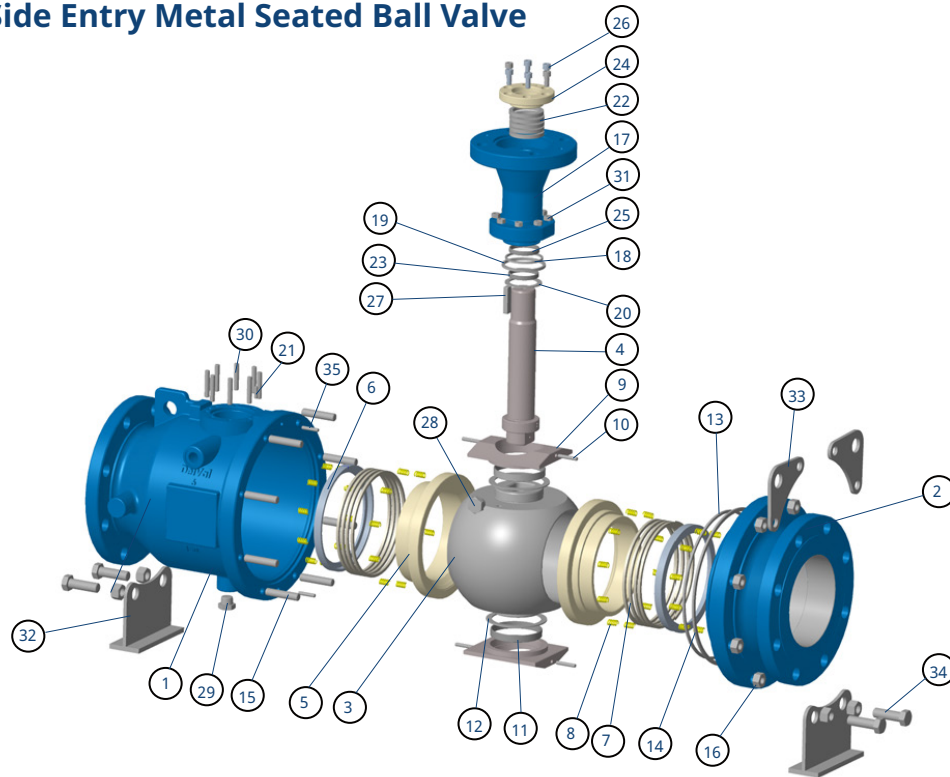
Weld Overlays

Sealing areas and other critical parts of the valve can be weld overlayed in case of corrosive service.

More frequently used materials are SS316L and Alloy 625.

STANDARD MATERIALS OF CONSTRUCTION

Two - Piece Body Side Entry Metal Seated Ball Valve



Part List

Item	Description	Standard Material*
1	Body	ASTM A 216 WCB / ASTM A 352 LCB / ASTM A 351 CF8M, CF3M / ASTM A 995 4A,5A,6A
2	Connector	
3**	Ball	ASTM A 105 / ASTM 216 WCC / ASTM A 350 LF2 / ASTM A 182 F316, F304, F316L, F51, F53, F55
4	Stem	ASTM A 322 4130, XM-19, SS410-cond.2 / ASTM A 564 Type 630 17-4PH
5**	Seat Ring	ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, 316L, F51, F53, F55
6**	Retainer Ring	ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, 316L, F51, F53, F55
7**	Seat Gasket	Graphite
8**	Seat Spring	Inconel B637 X-750
9	Trunnion	ASTM A 516 Gr 70 / ASTM A 105 / ASTM A 350 LF2 / ASTM A 240 SS316, SS304 / DUPLEX SS / SUPER DUPLEX SS
10	Pin	ASTM A 479 SS316
11**	Trunnion Bearing	SS / DSS - BACKED PTFE
12**	Thrust Bearing	SS / DSS - BACKED PTFE
13**	Connector Seal	Graphite
14**	Body Gasket	SWG ASTM A240 SS316 / SS316L + Graphite
15	Stud (Body-EC)	ASTM A 193 B7M, B8MA / ASTM A 320 L7M
16	Hex Nut (Body-EC)	ASTM A 194 8M, 8MA, 7M
17	Stem Housing	ASTM A 216 WCB / ASTM A 352 LCB / ASTM A 351 CF8M, CF3M / ASTM A 995 4A,5A,6A / ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, F316L, F51, F53, F55
18**	Housing Gasket	Graphite

Item	Description	Standard Material*
19**	Housing Seal	Graphite
20**	Stem Thrust Bearing	SS / DSS - BACKED PTFE
21	Pin	ASTM A479 SS316
22**	Stem Packing	Graphite
23**	Stem Bearing	SS / DSS - BACKED PTFE
24	Gland	ASTM A 240 SS316, SS304 / DUPLEX SS / SUPER DUPLEX SS
25**	Bearing	SS / DSS - BACKED PTFE
26	Soc Hd Cap Screw	ISO 3506 A2-70
27	Key	BS970 EN19 / 17-4 PH
28	Vent Fitting	ASTM A 479 SS316 / ASTM A 182 F51, F55
29	Bleed Fitting	
30	Stud (Body-Housing)	ASTM A 193 B7M, B8MA / ASTM A 320 L7M
31	Nut (Body-Housing)	ASTM A 194 8M, 8MA, 7M
32	Mounting Stand	ASTM A36
33	Lifting Hook	ASTM A36 / ASTM A516 Gr.70 / ASTM A240 SS304
34	Fasteners	ASTM A193 B7 / 2H
35	Pins	ASTM A479 SS316

*Other materials may be available on request.

** Recommended spares.

Lifting Points and Support:

DN 150/6" and above Class 150,300, 600, 900.

DN 100/4" and above Class 1500, 2500.

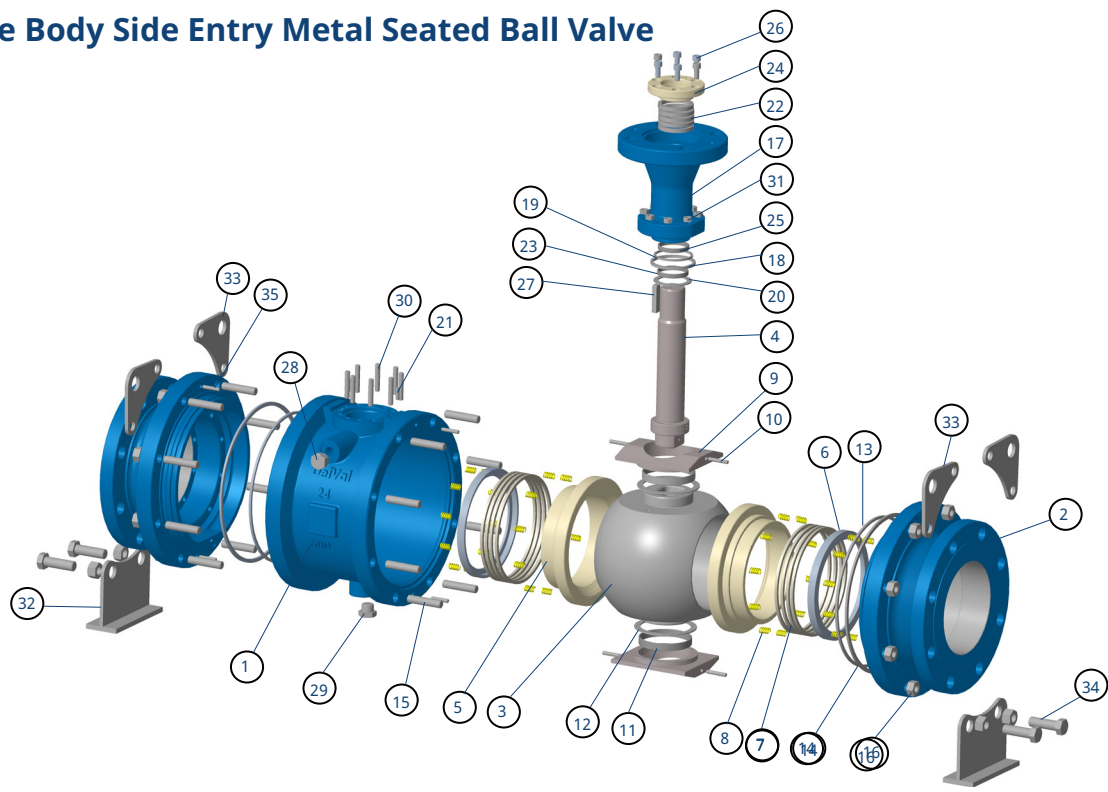
Weld Overlays

Sealing areas and other critical parts of the valve can be weld overlayed in case of corrosive service.

More frequently used materials are SS316L and Alloy 625.

STANDARD MATERIALS OF CONSTRUCTION

Three - Piece Body Side Entry Metal Seated Ball Valve



Part List

Item	Description	Standard Material*
1	Body	ASTM A 216 WCB / ASTM A 352 LCB / ASTM A 351 CF8M, CF3M / ASTM A 995 4A,5A,6A
2	Connector	
3**	Ball	ASTM A 105 / ASTM 216 WCC / ASTM A 350 LF2 / ASTM A 182 F316, F304, F316L, F51, F53, F55
4	Stem	ASTM A 322 4130, XM-19, SS410-cond.2 / ASTM A 564 Type 630 17-4PH
5**	Seat Ring	ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, 316L, F51, F53, F55
6**	Retainer Ring	ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, 316L, F51, F53, F55
7**	Seat Gasket	Graphite
8**	Seat Spring	Inconel B637 X-750
9	Trunnion	ASTM A 516 Gr 70 / ASTM A 105 / ASTM A 350 LF2 / ASTM A 240 SS316, SS304 / DUPLEX SS / SUPER DUPLEX SS
10	Pin	ASTM A 479 SS316
11**	Trunnion Bearing	SS / DSS - BACKED PTFE
12**	Thrust Bearing	SS / DSS - BACKED PTFE
13**	Connector Seal	Graphite
14**	Body Gasket	SWG ASTM A240 SS316 / SS316L + Graphite
15	Stud (Body-EC)	ASTM A 193 B7M, B8MA / ASTM A 320 L7M
16	Hex Nut (Body-EC)	ASTM A 194 8M, 8MA, 7M
17	Stem Housing	ASTM A 216 WCB / ASTM A 352 LCB / ASTM A 351 CF8M, CF3M / ASTM A 995 4A,5A,6A / ASTM A 105 / ASTM A 350 LF2 / ASTM A 182 F316, F304, F316L, F51, F53, F55
18**	Housing Gasket	Graphite

Item	Description	Standard Material*
19**	Housing Seal	Graphite
20**	Stem Thrust Bearing	SS / DSS - BACKED PTFE
21	Pin	ASTM A479 SS316
22**	Stem Packing	Graphite
23**	Stem Bearing	SS / DSS - BACKED PTFE
24	Gland	ASTM A 240 SS316, SS304 / DUPLEX SS / SUPER DUPLEX SS
25**	Bearing	SS / DSS - BACKED PTFE
26	Soc Hd Cap Screw	ISO 3506 A2-70
27	Key	BS970 EN19 / 17-4 PH
28	Vent Fitting	ASTM A 479 SS316 / ASTM A 182 F51, F55
29	Bleed Fitting	
30	Stud (Body-Housing)	ASTM A 193 B7M, B8MA / ASTM A 320 L7M
31	Nut (Body-Housing)	ASTM A 194 8M, 8MA, 7M
32	Mounting Stand	ASTM A36
33	Lifting Hook	ASTM A36 / ASTM A516 Gr.70 / ASTM A240 SS304
34	Fasteners	ASTM A193 B7 / 2H
35	Pins	ASTM A479 SS316

*Other materials may be available on request.

** Recommended spares.

Lifting Points and Support:
DN 150/6" and above Class 150,300, 600, 900.
DN 100/4" and above Class 1500, 2500.

Weld Overlays
Sealing areas and other critical parts of the valve can be weld overlayed in case of corrosive service.
More frequently used materials are SS316L and Alloy 625.

TORQUE DATA (Nm/Lbf-Inch)

Size		TORQUE TYPE	ASME PRESSURE CLASS									
			150		300		600		900		1500	
INCH	DN		Nm	Lbf-Inch	Nm	Lbf-Inch	Nm	Lbf-Inch	Nm	Lbf-Inch	Nm	Lbf-Inch
*1 1/2"	40	BTO	36	319	52	460	71	628	125	1106	125	1106
		ETC	29	255	42	368	57	503	100	885	100	885
2"	50	BTO	35	310	70	620	105	929	133	1177	215	1903
		ETC	28	248	56	496	84	743	106	942	172	1522
3"	80	BTO	105	929	140	1239	275	2434	296	2620	530	4691
		ETC	84	743	112	991	220	1947	237	2096	424	3753
4"	100	BTO	190	1682	250	2213	390	3452	510	4514	662	5859
		ETC	152	1345	200	1770	312	2761	408	3611	530	4687
6"	150	BTO	425	3762	598	5293	652	5771	922	8160	1565	13851
		ETC	340	3009	478	4234	522	4617	738	6528	1252	11081
8"	200	BTO	740	6550	1080	9559	1215	10754	2210	19560	2920	25844
		ETC	592	5240	864	7647	972	8603	1768	15648	2336	20675
10"	250	BTO	1032	9134	1398	12373	1951	17268	2515	22260	4905	43413
		ETC	826	7307	1118	9899	1561	13814	2012	17808	3924	34730
12"	300	BTO	1351	11957	2100	18587	2541	22490	3451	30544	7072	62592
		ETC	1081	9566	1680	14869	2033	17992	2761	24435	5658	50074
14"	350	BTO	2485	21994	3150	27880	4285	37925	6680	59123	12930	114440
		ETC	1988	17595	2520	22304	3428	30340	5344	47298	10344	91552
16"	400	BTO	3038	26889	4300	38058	5100	45139	8300	73461	13098	115927
		ETC	2430	21511	3440	30447	4080	36111	6640	58769	10478	92742
18"	450	BTO	4069	36014	6507	57592	9110	80630	13664	120937	28380	251184
		ETC	3255	28811	5206	46073	7288	64504	10931	96749	22704	200947
20"	500	BTO	5508	48750	8480	75054	12625	111741	18462	163420	-	-
		ETC	4406	39000	6784	60043	10100	89393	14770	130722	-	-
24"	600	BTO	8950	79214	10506	92986	15744	139346	32098	284091	-	-
		ETC	7160	63371	8405	74389	12595	111477	25678	227273	-	-

*Applies to 2" reduced port

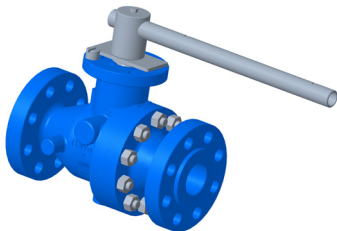
BTO: Break To Open Torque ETC: End To Close Torque

Note:

- 1) Torque values are primary soft seated valves with seat insert material as Devlon.
- 2) Consult DelVal® for torque values which are not available in the bulletin.
- 3) For PEEK seated valves, use a sizing factor of 1.5 on the above torque values.
- 4) For Metal seated valves, please consult factory.
- 5) Torque values are at ambient temperature, media being clear water without any factor of safety.
- 6) The above torque values are indicative and for reference only. Actuator sizing torque will depend on service media.
- 7) For reduced port valves, consider torque values corresponding to the lower size e.g. For 12" x 10" reduced port value consider torque value corresponding to 10".

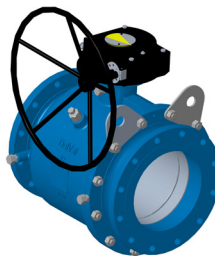
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Operator Information



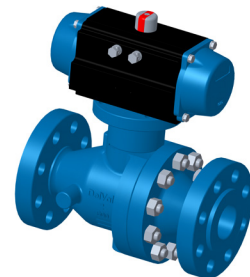
Lever Operated

Valves up to size 4" Class 150, 2" Class 300 and 600 can be supplied with lever handles for manual operation.



Gear Operated

All valves can be directly mounted with gear operators for manual operation. Gear operators can also be attached to chain wheel operators to open or close valves located on pipelines at high elevations.



Actuator Operated

All valves can be mounted with a pneumatic actuator or electric actuator and accessories for complete on-off automation. Valves can be also mounted with manual overrides.

Special Applications

Sour Service

Trunnion Mounted Ball Valves to be used in "sour gas" service, where there is the risk of stress corrosion due to the presence of wet H₂S, comply with the requirements of ANSI/ NACE MR0175 / ISO 15156-1, NACE MR 0103
Hardness tests can be performed as a standard procedure on all parts in contact with the fluid, such as body, connector, ball, stem, seat ring, springs, bolts etc.

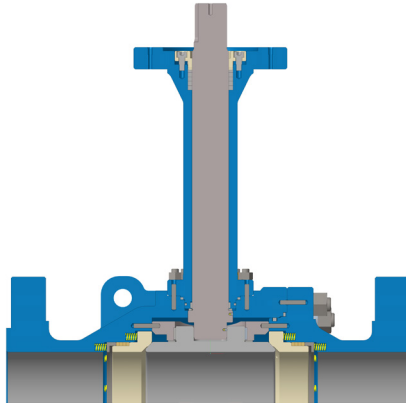
Extended Stem for Low and High Temperature Service

For valves to be used on insulated lines or for valves required for low or high temperature service, designs can include an extended bonnet.

The extended bonnet increases the distance from the body and the stem sealing area, thus avoiding damage to the seals because of temperature.

Extended bonnet is recommended for use at temperatures below -50°C or above 300°C (-58°F or above 572°F).

High Temp / Low Temp Extended Bonnet



Extended Stem



Stem for Buried Service

For valves to be installed on underground lines, trunnion mounted ball valves are supplied complete with suitable stem extensions.

All the drain, vent and emergency sealant lines are extended and all relevant pipes are firmly attached to the stem extension.

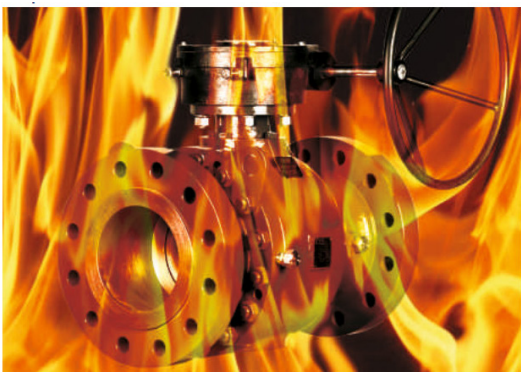
Fully welded body

Welded body designs eliminate body flanges, reducing potential leak paths and increasing resistance to pipeline pressure and stresses. Often used in buried service.

Valves are offered with a) stem extension for buried services and b) pup extension pieces for Butt Weld end valves to avoid damage to valve internals are provided.

Fire Test

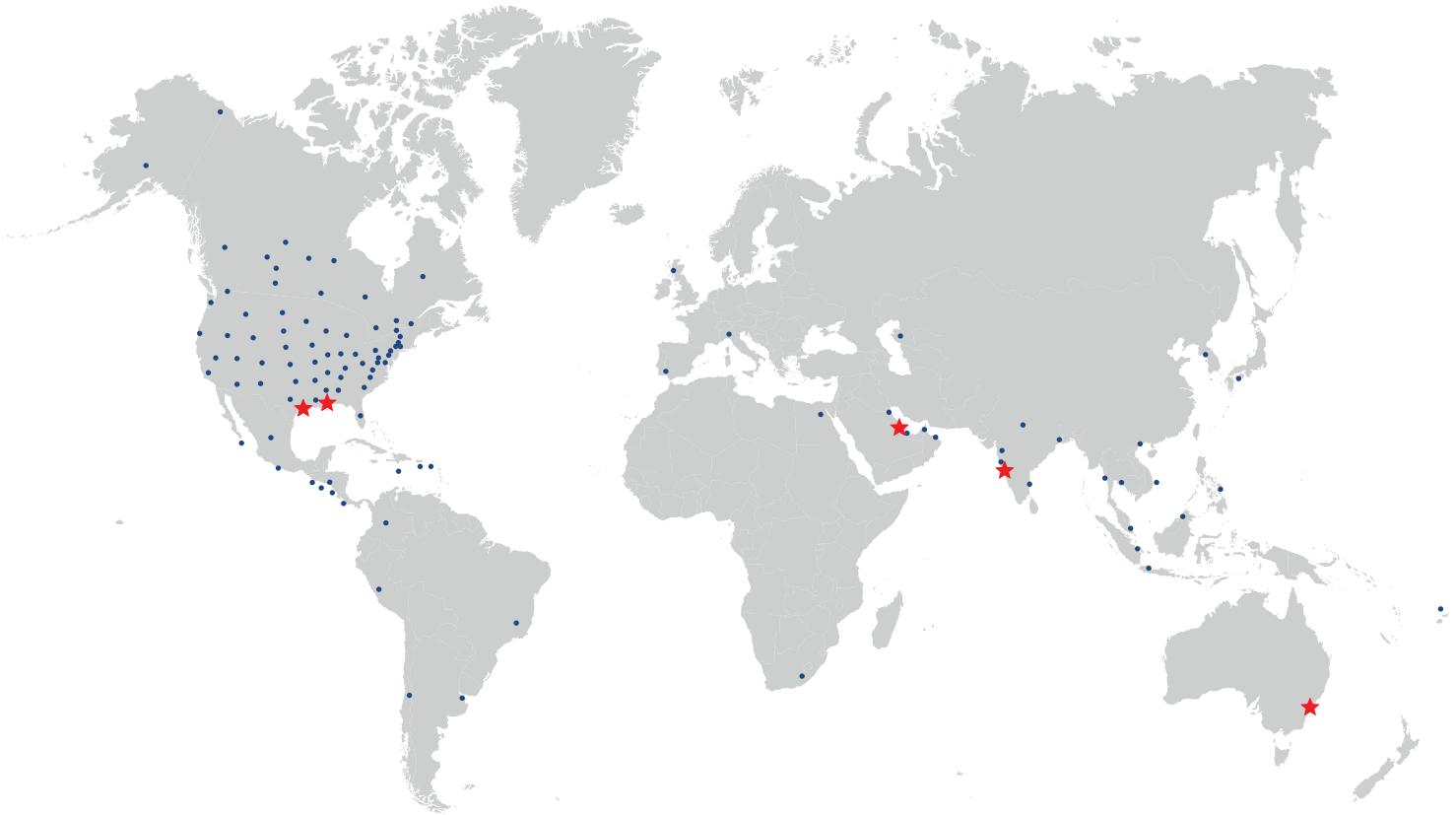
Ball valves have been designed to meet the requirements of API 607 /API 6FA.



100% TESTING 100% SERIALIZATION



CERTIFICATES



Manufacturing & Sales International DelVal Flow Controls Pvt. Ltd.

Gat No: 25, Kavathe
Post-Javale, Tal. Khandala
Dist. Satara Pin-412801 | India
salesindia@delvalflow.com

Manufacturing & Sales Americas DelVal Flow Controls USA

6535 Industrial Drive, Suite 103
Geismar, LA 70734 | USA
T: +1 833-DELVAL1
F: +1 225-744-4328
sales@delvalflow.com

Middle East DelVal Flow Controls Middle East Company Ltd.

Factory No. 103, 3rd Industrial
Area, Dammam | Saudi Arabia
T: +966 13 864 2040
salesmea@delvalflow.com

Australia DelVal Flow Controls (ANZ) Pty Ltd.

Unit 6, 561 Great Western
Highway, Werrington,
NSW 2747 | Australia
T: +61 (0)2 97431271
delvalanz@delvalflow.com