

# TRUNNION MOUNTED BALL VALVE



E N G I N E E R E D   F O R   Q U A L I T Y   &   E X C E L L E N C E



281.227.9911 • fax 281.227.9912

15862 Diplomatic Plaza Drive • Houston, TX 77032

[sales@tigervalve.com](mailto:sales@tigervalve.com) • [www.tigervalve.com](http://www.tigervalve.com)

# Trunnion Ball Valve



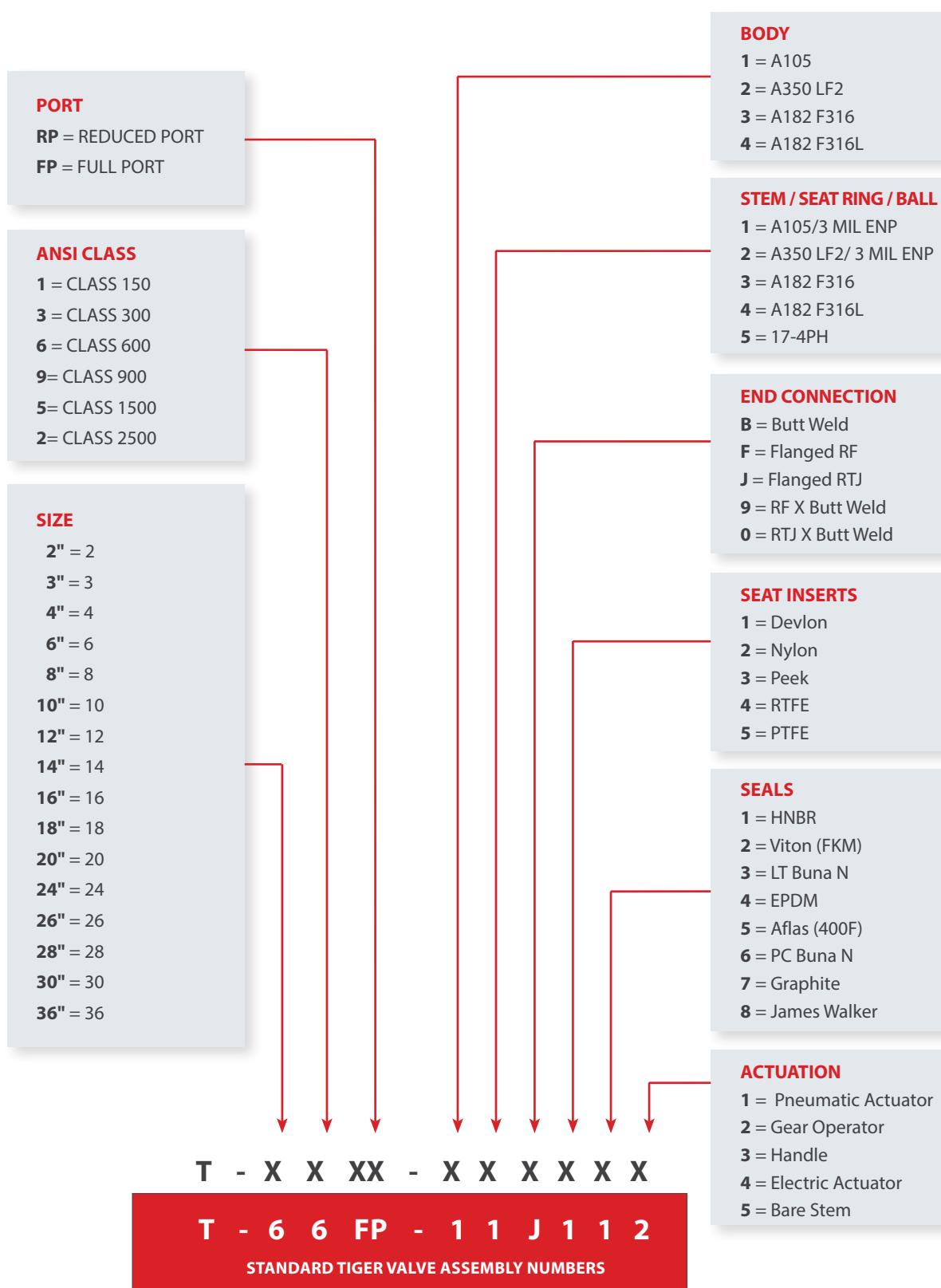
## Table of Contents

Introduction . . . . .	.2
How To Order—Assembly # Matrix . . . . .	.3
Bill of Materials . . . . .	.4
Pressure Temperature Chart . . . . .	.5
Ball Valve Main Features . . . . .	.6-7
Exploded View—Component Parts . . . . .	.8-9
Dimensions and Weights ANSI Class 150 . . . . .	10-11
Dimensions and Weights ANSI Class 300 . . . . .	12-13
Dimensions and Weights ANSI Class 600 . . . . .	14-15
Dimensions and Weights ANSI Class 900 . . . . .	16-17
Dimensions and Weights ANSI Class 1500 . . . . .	18-19
Top Mounting Dimensions and Stem Torque . . . . .	20-23
Material Specifications . . . . .	24-25
Specifications for Flow Coefficients . . . . .	26
TVC Product Line and Product Warranty . . . . .	27

**TL Series** is engineered to the latest API, ISO and ASME standards and manufactured using best-in-class materials and technologies. The result is the highest quality and most competitively-priced trunnion-mounted ball valve available.

**TB Series** address all of the safety, quality and design issues important for ensuring consistent field performance and environmental protection and are designed to provide superior performance in a variety of applications including offshore platforms, oil, gas and other liquids pipelines, tank farms, meter stations, chemical processing plants and refineries.

# How To Order—Assembly # Matrix

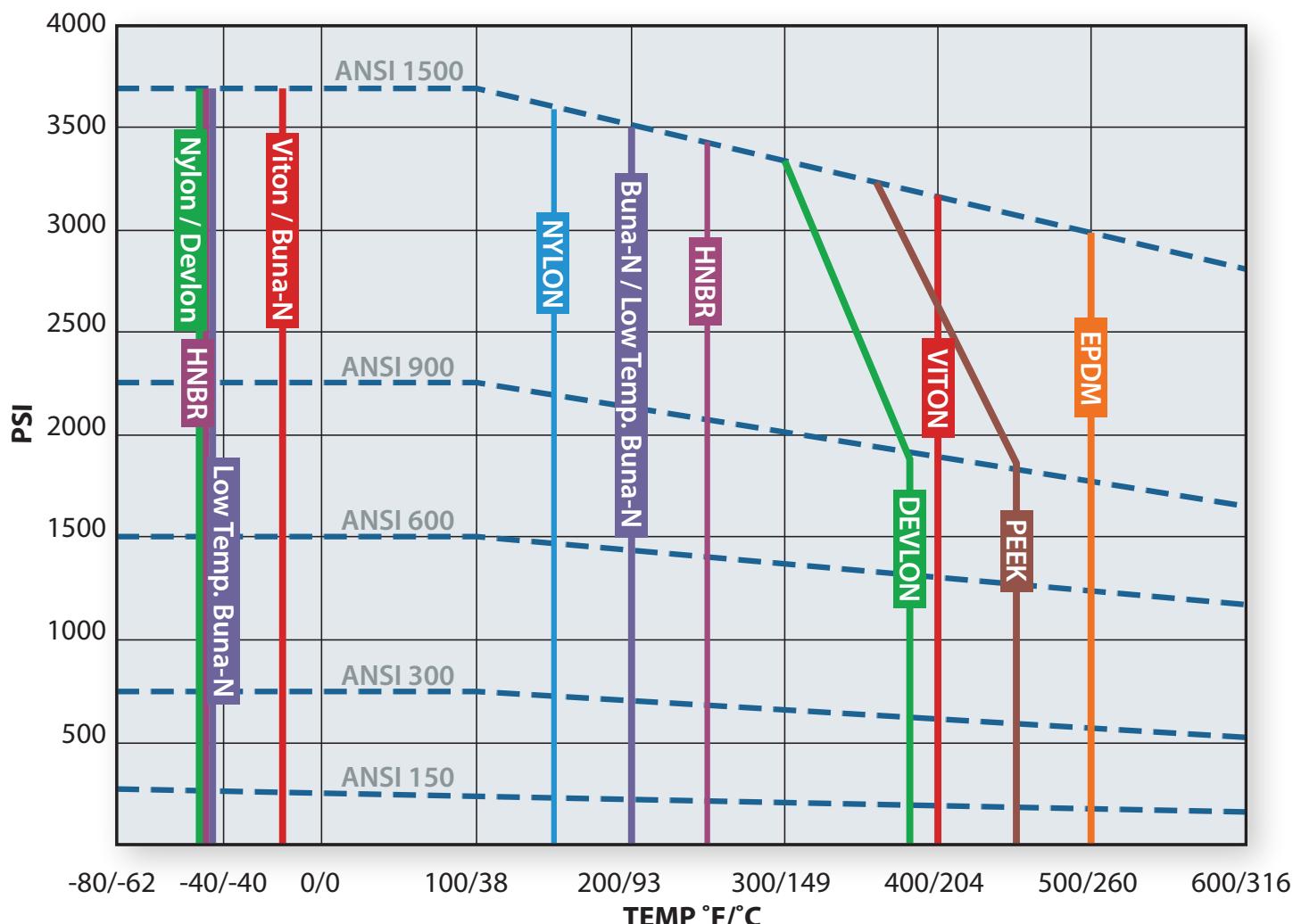


Send us your RFQ today!  
Email your RFQ to [sales@tigervalve.com](mailto:sales@tigervalve.com)

# Bill of Materials

	Part	A105/ENP	A105/316	LF2/ENP	LF2/316
1	Body	ASTM A105	ASTM A105	ASTM A350 Gr. LF2	ASTM A350 Gr. LF2
2	Adapter	ASTM A105	ASTM A105	ASTM A350 Gr. LF2	ASTM A350 Gr. LF2
3	Bonnet	ASTM A105	ASTM A105	ASTM A350 Gr. LF2	ASTM A350 Gr. LF2
4	Ball	ASTM A105+3MIL ENP	ASTM A182 F316	ASTM A350 Gr. LF2+3 MIL ENP	ASTM A182 F316
5	Stem	ASTM A105+3MIL ENP	ASTM A182 F316	ASTM A350 Gr. LF2+3 MIL ENP	ASTM A182 F316
6	Trunnion	ASTM A105+3MIL ENP	ASTM A105+ENP	ASTM A350 Gr. LF2+3 MIL ENP	ASTM A350 Gr. LF2+3 MIL ENP
7-1	Seat Ring	ASTM A105+3MIL ENP	ASTM A182 F316	ASTM A350 Gr. LF2+3 MIL ENP	ASTM A182 F316
7-2	Seat Insert	DEVLON	DEVLON	DEVLON	DEVLON
8	Top Cover	ASTM A105	ASTM A105	ASTM A350 Gr. LF2	ASTM A350 Gr. LF2
9	Seat Spring	INCONEL X-750	INCONEL X-750	INCONEL X-750	INCONEL X-750
10	Stem Bearing	PTFE	PTFE	PTFE	PTFE
11	Trunnion Bearing	DU	DU	DU	DU
12	Adapter Seal	HNBR	HNBR	HNBR	HNBR
13	Adapter Sub-Seal	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
14	Bonnet Seal	HNBR	HNBR	HNBR	HNBR
15	Bonnet Sub-Seal	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
18	Stem Seal	HNBR	HNBR	HNBR	HNBR
19	Stem Sub-Seal	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
20	Seat Seal	HNBR	HNBR	HNBR	HNBR
22	Seat Sub-Seal	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
23	Adapter Studs	ASTM A193Gr.B7M	ASTM A193GR.B7M	ASTM A320Gr.L7M	ASTM A320Gr.L7M
24	Adapter Nuts	ASTM A194Gr.2HM	ASTM A193Gr.2HM	ASTM A194Gr.7M	ASTM A194Gr.7M
25	Bonnet Screw 1	ASTM A193Gr.B7M	ASTM A193Gr.B7M	ASTM A320Gr.L7M	ASTM A320Gr.L7M
26	Bonnet Screw 2	ASTM A193Gr.B7M	ASTM A193Gr.B7M	ASTM A320Gr.L7M	ASTM A320Gr.L7M
28	Thrust Bearing - Stem	PTFE	PTFE	PTFE	PTFE
29	Bleed Valve	SS	SS	SS	SS
30	Injection Fitting	CS	CS	CS	CS
31	Check Valve	SS	SS	SS	SS
32	G.o.p	CS	CS	CS	CS
33	Gop Screw	CS	CS	CS	CS
34	Key	CS	CS	CS	CS
36	Bonnet Alignment Pin	CS	CS	CS	CS
37	Name Plate	SS	SS	SS	SS
42	Grounding Plunge	SS	SS	SS	SS
43	Grounding Plunge Spring	SS	SS	SS	SS
46	Trunnion Alignment Pin	CS	CS	CS	CS
47	Lifting Lug	CS	CS	CS	CS
50	Drain Plug	CS	CS	CS	CS
51	Support Rack	CS	CS	CS	CS
54	Adapter Stud (Lug/Feet)	ASTM A193Gr.B7M	ASTM A193Gr.B7M	ASTM A320Gr.L7M	ASTM A320Gr.L7M
59	Drive Screw	SS	SS	SS	SS

# Pressure Temperature Chart



## API American Petroleum Institute

- 6D Specification for Pipeline Valves
- 598 Valve Inspection and Test
- 607 Fire test for Soft Seated Quarter Turn Valves

## ASME American Society of Mechanical Engineers

- B16.5 Steel Pipe Flanges and Flanged Fittings
- B16.10 Face to Face and End to End Dimensions of Ferrous Valves
- B16.34 Steel Valves—Flanged and Butt Welding Ends
- N31.4 Liquid Petroleum Transportation Piping Systems
- B31.8 Gas Transmission and Distribution Piping Systems

## ISO International Organization for Standardization

- ISO 9001-2000 Quality Systems for Design/Development, Production, Installation, Servicing
- ISO 5211 Topworks for Mounting Dimensions

## BS British Standard

- BS 5351 Steel Ball Valves for the Petroleum, Petrochemical, and Allied Industries

## MSS Manufacturers Standardization Society

- SP 25 Standard Marking System for Valves, Fittings, Flanges and Unions
- SP 45 Bypass and Drain Connection Standard

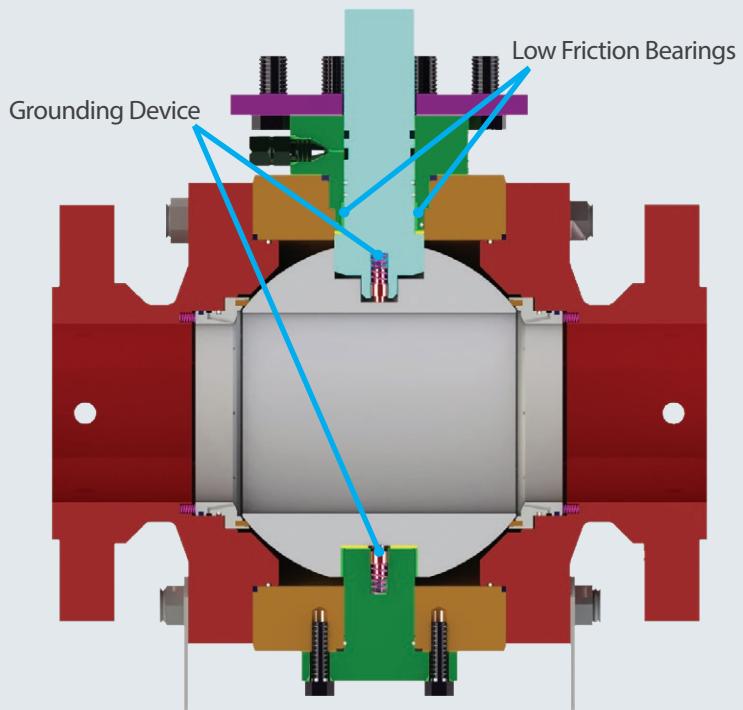
## NACE National Association of Corrosion Engineers

- MR0175 Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment

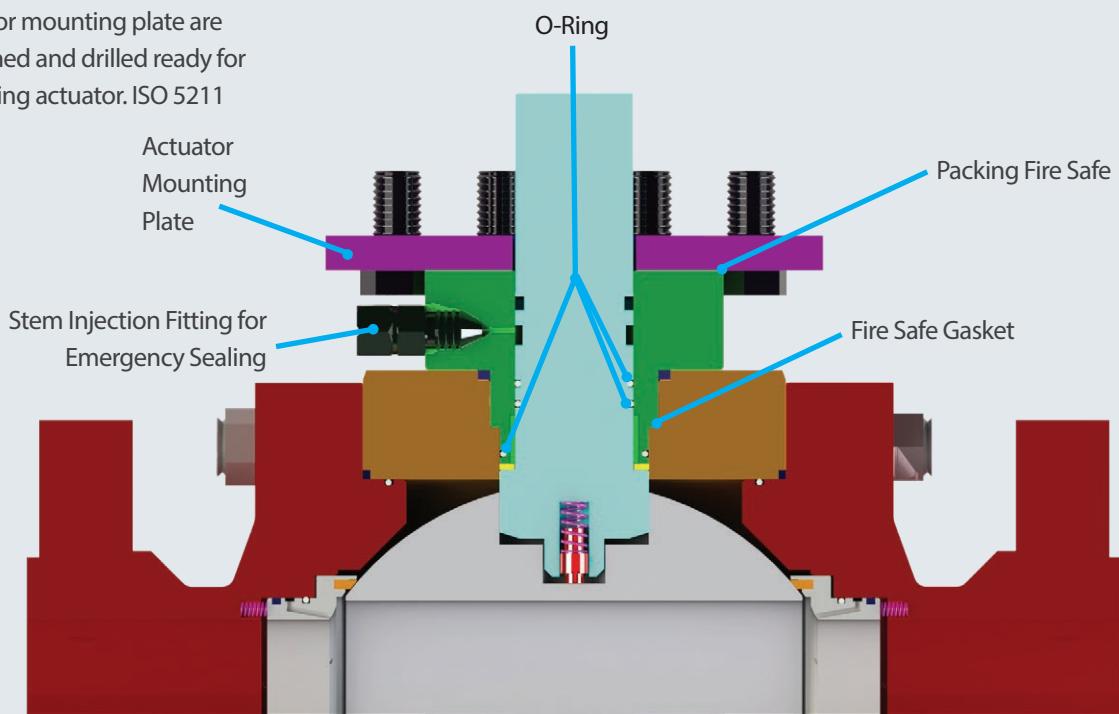
# Ball Valve Main Features

## TL Series

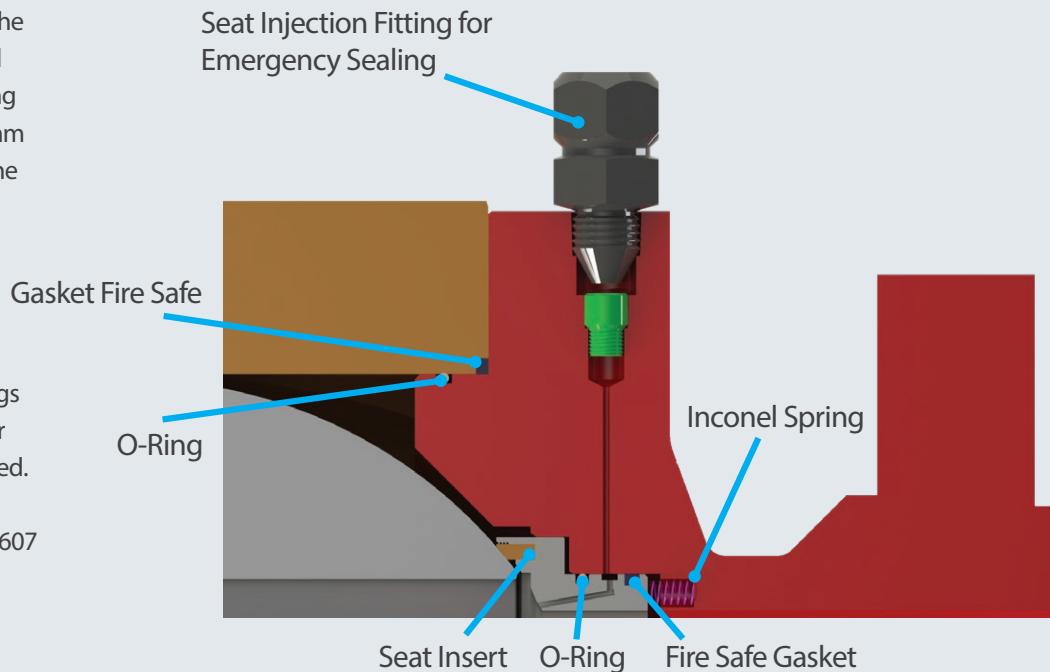
- Design forged 3-pc.
- Double block and bleed.
- A large trunnion support design ensures central positioning under the highest working pressure.
- Trunnion mounted ball permits ease of operation.
- Grounding device are supplied for positive anti-static between ball/stem and body.
- Corrosion resistant low friction bearings are supplied.



- Actuator mounting plate are machined and drilled ready for mounting actuator. ISO 5211

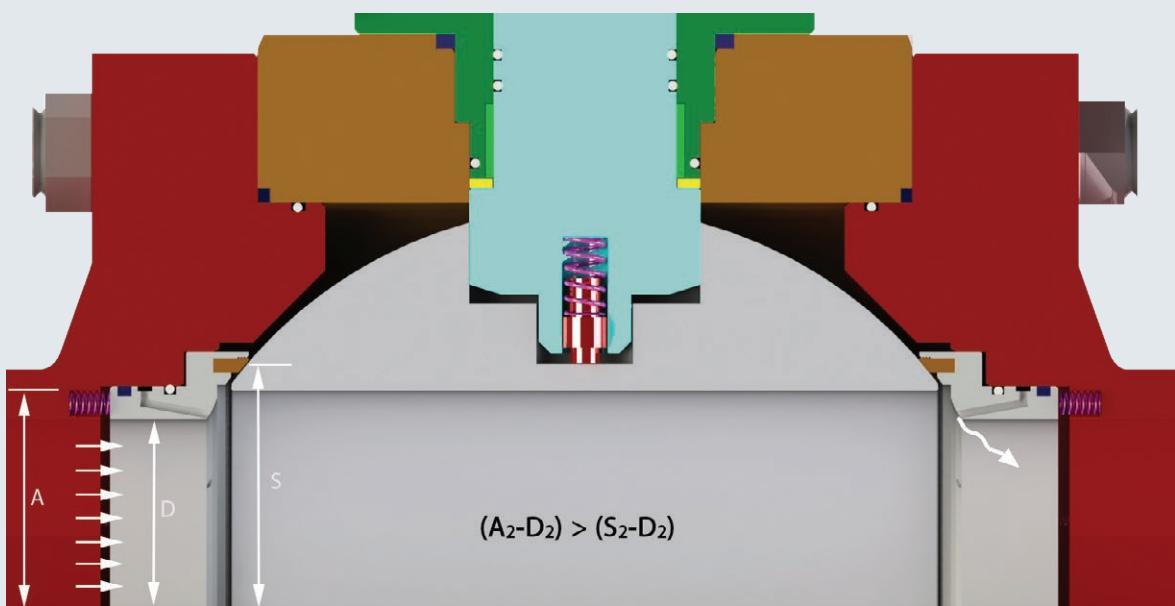


- Inconel spring forces the seat with DEVILON seal toward the ball creating a seal on both up stream and down stream of the valve.



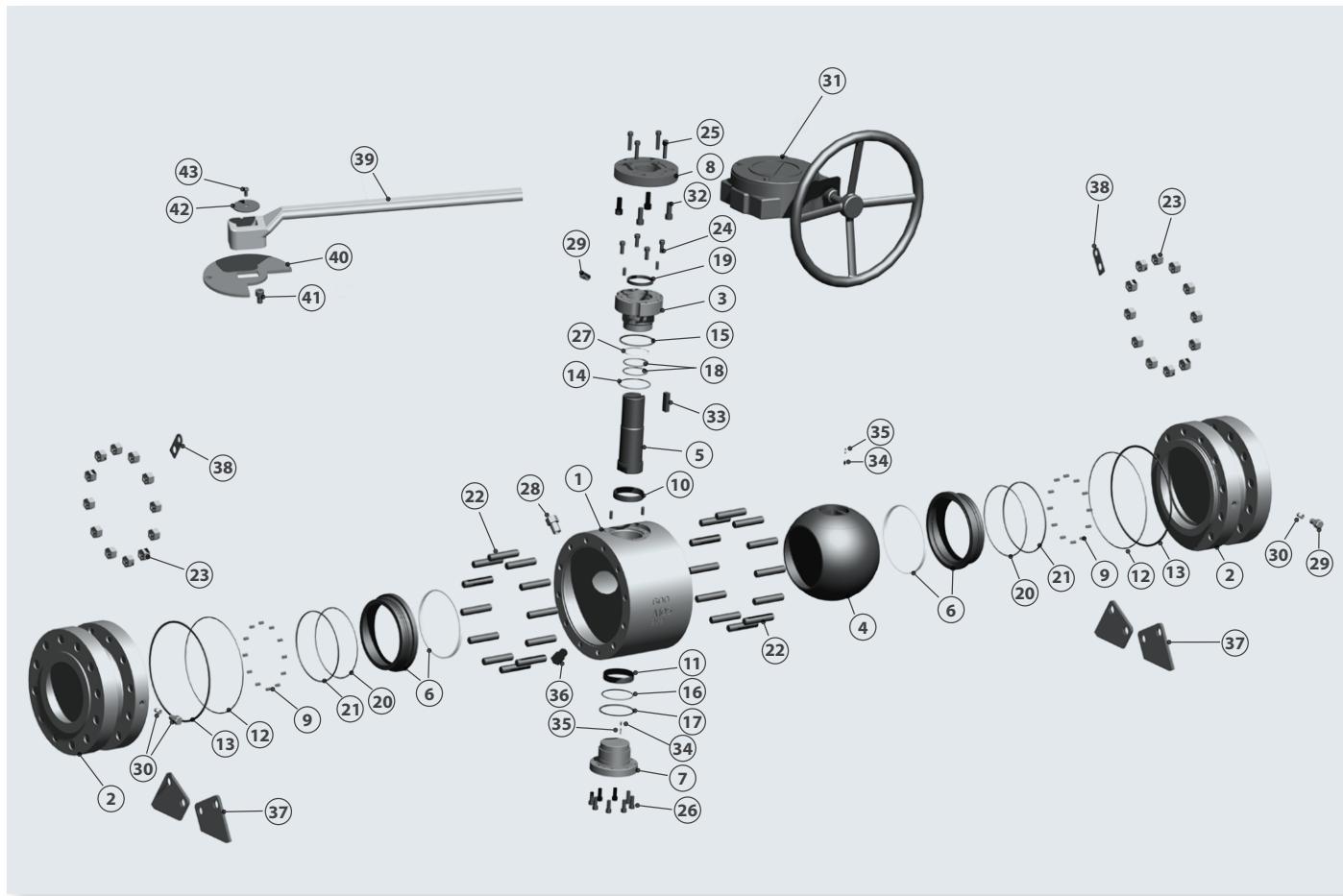
- Sealant injection fittings for emergency stem or seat sealing are supplied.
- Fire Safe Tested to API 607

- Self relieving seat is designed to prevent excessive pressure buildup within the valve by automatically relieving pressure when body cavity pressure exceeds the spring load on the seats.



# Exploded View—Component Parts

**TL Series** 2"- 4" Class 600, 900, 1500 and 2500 | 3"-12" Class 150 and 300

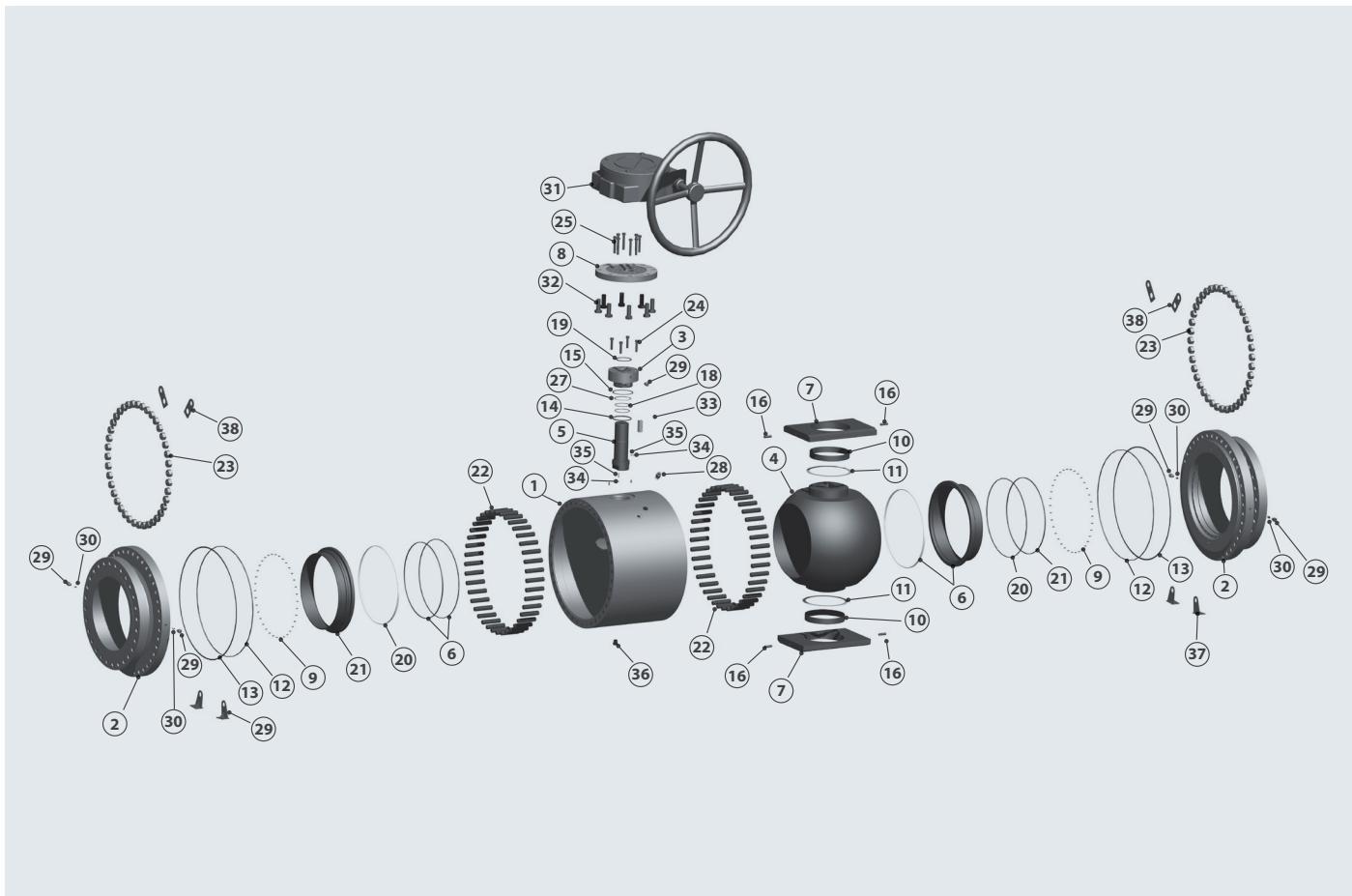


COMPONENT	DESCRIPTION
1	Body
2	Adapter
3	Bonnet
4	Ball
5	Stem
6	Seat Ring Sub Assembly
7	Trunnion
8	Top Cover
9	Seat Spring
10	Stem Bearing
11	Trunnion Bearing
12	Adapter Seal
13	Adapter Sub-Seal
14	Bonnet Seal
15	Bonnet Sub-Seal

COMPONENT	DESCRIPTION
16	Trunnion Seal
17	Trunnion Sub-Seal
18	Stem Seal
19	Stem Sub-Seal
20	Seat Seal
21	Seat Sub-Seal
22	Adapter Studs
23	Adapter Nuts
24	Bonnet Screw
25	Top Cover Screw
26	Trunnion Screw
27	Thrust Bearing-Stem
28	Bleed Valve
29	Injection Fitting
30	Check Valve

COMPONENT	DESCRIPTION
31	G.O.P
32	G.O.P Screw
33	Stem Key
34	Grounding Plunge
35	Grounding Spring
36	Drain Plug
37	Support Foot
38	Lifting lug
39	Handle
40	Stop Plate
41	Stop Plate Screw
42	Retainer
43	Handle Screw

**TB Series** 14"- 36" Class 150, 300 and 600 | 6"-24" Class 900, 1,500 and 2,500

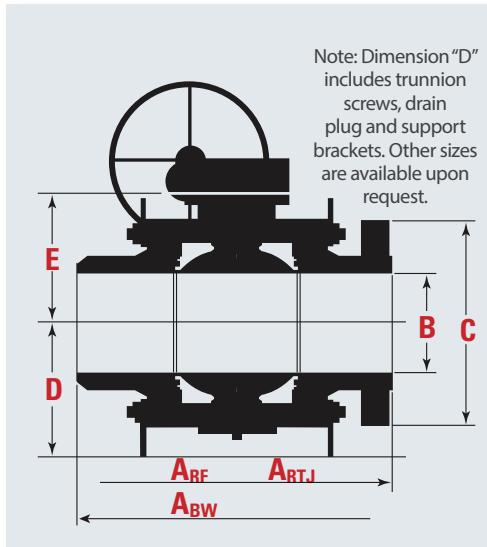


COMPONENT	DESCRIPTION
1	Body
2	Closure
3	Bonnet
4	Ball
5	Stem
6	Seat Ring Sub Assembly
7	Trunnion Support
8	Top Cover
9	Seat Spring
10	Trunnion Bearing
11	Thrust Bearing Ball
12	Closure Seal
13	Closure Sub-Seal
14	Bonnet Seal
15	Bonnet Sub-Seal

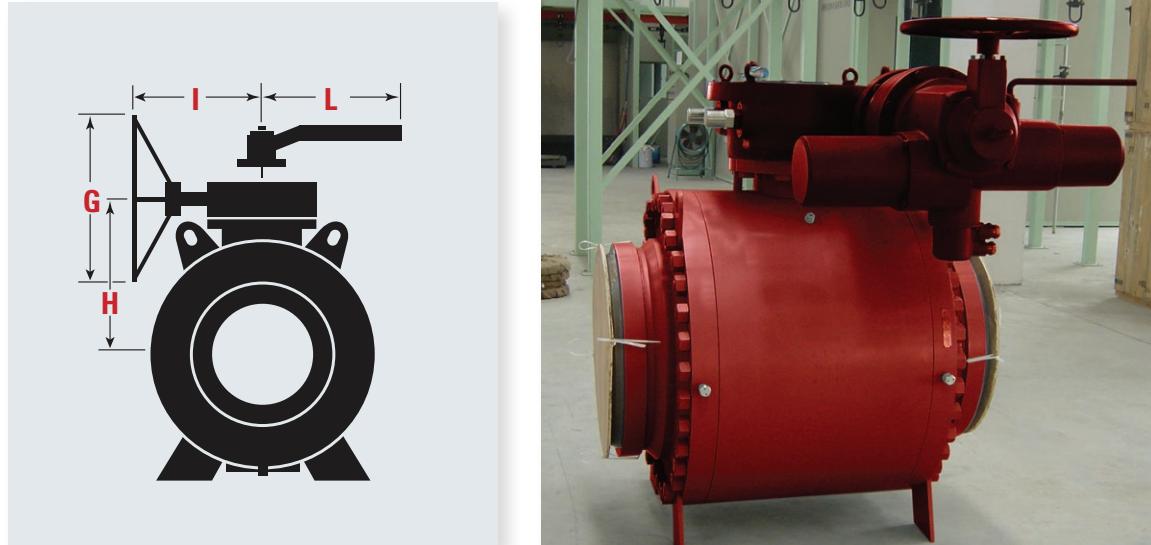
COMPONENT	DESCRIPTION
16	Trunnion Alignment Pin
17	N/A
18	Stem Seal
19	Stem Sub-Seal
20	Seat Seal
21	Seat Sub-Seal
22	Closure Studs
23	Closure Nuts
24	Bonnet Screw
25	Top Cover Screw
26	N/A
27	Thrust Bearing-Stem
28	Bleed Valve
29	Injection Fitting
30	Check Valve

COMPONENT	DESCRIPTION
31	Gear
32	Gear Screw
33	Stem Key
34	Grounding Plunge
35	Grounding Spring
36	Drain Plug
37	Support Foot
38	Lifting Lug

# Dimensions and Weights ANSI Class 150

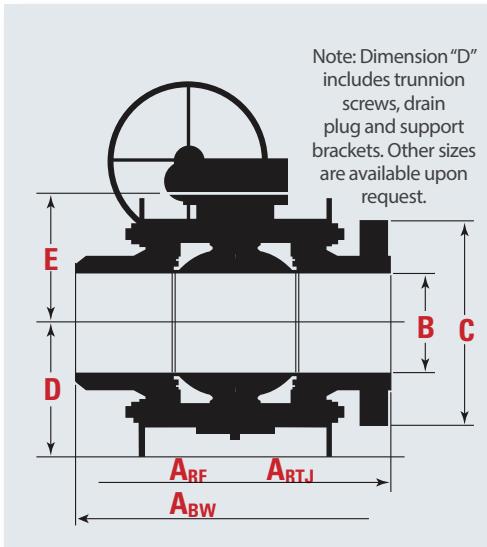


SIZE	A <sub>RF</sub>		A <sub>RTJ</sub>		A <sub>BW</sub>		B		C		D		E	
inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
<b>6</b>	15.50	394	16.00	406	18.00	457	6.00×6.00	152.4×152.4	11.00	279	7.20	183	9.06	230
<b>8X6</b>	18.00	457	18.50	470	20.50	521	8.00×6.00	203.2×152.4	13.50	343	7.20	183	9.06	230
<b>8</b>	18.00	457	18.50	470	20.50	521	8.00×8.00	203.2×203.2	13.50	343	10.28	261	10.59	269
<b>10X8</b>	21.00	533	21.50	546	22.00	559	10.00×8.00	254×203.2	16.00	406	10.28	261	10.59	269
<b>10</b>	21.00	533	21.50	546	22.00	559	10.00×10.00	254×254	16.00	406	12.80	325	12.13	308
<b>12X10</b>	24.00	610	24.50	622	25.00	635	12.00×10.00	304.8×254	19.00	483	12.80	325	12.13	308
<b>12</b>	24.00	610	24.50	622	25.00	635	12.00×12.00	304.8×304.8	19.00	483	14.76	375	13.98	355
<b>14X12</b>	27.00	686	27.50	699	30.00	762	13.25×12.00	337×304.8	21.00	535	14.76	375	13.98	355
<b>14</b>	27.00	686	27.50	699	30.00	762	13.25×13.25	337×337	21.00	535	15.04	382	15.08	383
<b>16X14</b>	30.00	762	30.50	775	33.00	838	15.25×13.25	387×337	23.50	595	15.04	382	15.08	383
<b>16</b>	30.00	762	30.50	775	33.00	838	15.25×15.25	387×387	23.50	595	15.75	400	16.85	428
<b>18X16</b>	34.00	864	34.50	876	36.00	914	17.25×15.25	438×387	25.00	635	17.75	400	16.85	428
<b>18</b>	34.00	864	34.50	876	36.00	914	17.25×17.25	438×438	25.00	635	19.13	486	18.94	481
<b>20X18</b>	36.00	914	36.50	927	39.00	991	19.25×17.25	489×438	27.50	700	19.13	486	18.94	481
<b>20</b>	36.00	914	36.50	927	39.00	991	19.25×19.25	489×489	27.50	700	19.69	500	20.35	517
<b>24X20</b>	42.00	1067	42.50	1080	45.00	1143	23.25×19.25	591×489	32.00	815	19.69	500	20.35	517
<b>24</b>	42.00	1067	42.50	1080	45.00	1143	23.25×23.25	591×591	32.00	815	22.80	579	23.43	595
<b>30X24</b>	51.00	1295	-	-	55.00	1397	29.00×23.25	736.5×591	38.75	984	22.80	579	23.43	595
<b>30</b>	51.00	1295	-	-	55.00	1397	29.00×29.00	736.5×736.5	38.75	984	27.95	710	29.57	751
<b>36X30</b>	60.00	1524	-	-	68.00	1727	34.50×29.00	876×736.5	46.00	1168	27.95	710	29.57	751
<b>36</b>	60.00	1524	-	-	68.00	1727	34.50×34.50	876×876	46.00	1168	31.89	810	34.02	864

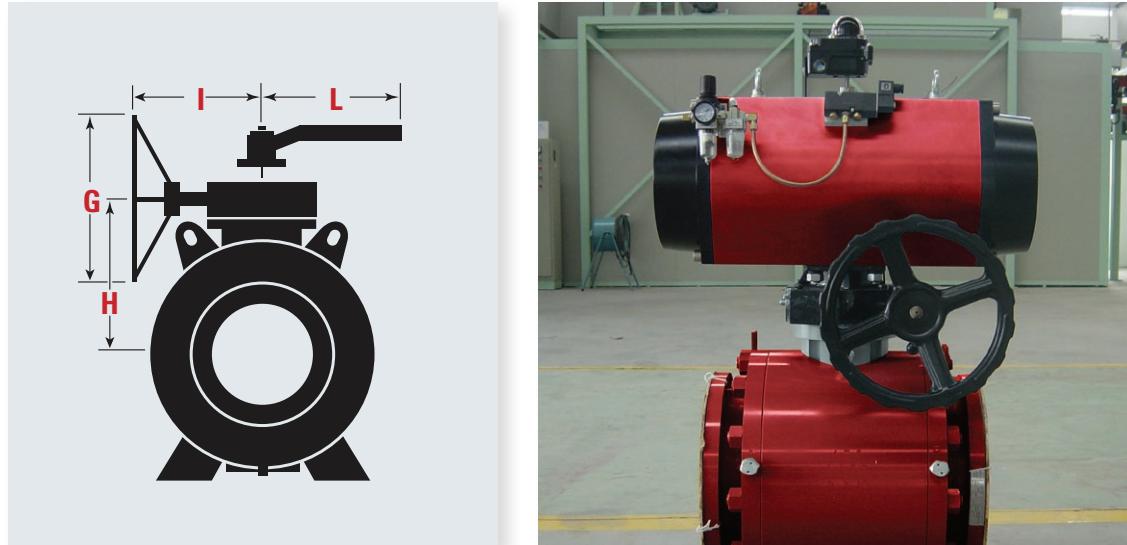


SIZE	G		H		I		L		FL	WEIGHT	BW	
	inch	inch	mm	mm	inch	mm	inch	mm				
<b>6</b>	15.75	400	10.60	269	12.85	327	-	-	364	165	342	155
<b>8X6</b>	15.75	400	10.60	269	12.85	327	-	-	406	184	381	173
<b>8</b>	15.75	400	12.15	308	12.85	327	-	-	728	330	684	310
<b>10X8</b>	15.75	400	12.15	308	12.85	327	-	-	794	360	750	340
<b>10</b>	19.70	500	14.65	372	14.15	360	-	-	1222	554	1162	527
<b>12X10</b>	19.70	500	14.65	372	14.15	360	-	-	1378	625	1290	585
<b>12</b>	23.65	600	16.50	419	16.45	418	-	-	1771	803	1649	748
<b>14X12</b>	23.65	600	16.50	419	16.45	418	-	-	1918	870	1808	820
<b>14</b>	27.50	700	17.75	451	22.65	575	-	-	2095	950	1985	900
<b>16X14</b>	27.50	700	17.75	451	22.65	575	-	-	2227	1010	2116	960
<b>16</b>	27.50	700	19.50	496	22.65	575	-	-	3054	1385	2911	1320
<b>18X16</b>	27.50	700	19.50	496	22.65	575	-	-	3210	1456	3064	1390
<b>18</b>	27.50	700	22.05	560	22.65	575	-	-	4190	1900	3969	1800
<b>20X18</b>	27.50	700	22.05	560	22.65	575	-	-	4332	1965	4112	1865
<b>20</b>	27.50	700	23.45	596	22.65	575	-	-	4994	2265	4763	2160
<b>24X20</b>	27.50	700	23.45	596	22.65	575	-	-	5335	2420	5137	2330
<b>24</b>	27.50	700	26.85	682	22.80	579	-	-	8159	3700	7916	3590
<b>30X24</b>	27.50	700	26.85	682	22.80	579	-	-	9259	4200	8973	4070
<b>30</b>	27.50	700	35.45	901	26.40	670	-	-	13010	5900	12767	5790
<b>36X30</b>	27.50	700	35.45	901	26.40	670	-	-	14991	6800	14771	6700
<b>36</b>	27.50	700	39.90	1014	26.40	670	-	-	20727	9400	20507	9300

# Dimensions and Weights ANSI Class 300

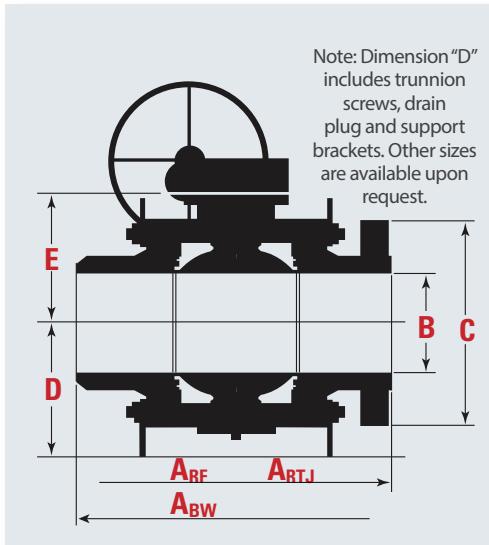


SIZE	A <sub>RF</sub>		A <sub>RTJ</sub>		A <sub>BW</sub>		B		C		D		E	
inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
2	8.50	216	9.15	232	8.50	216	2.00×2.00	50.8×50.8	6.50	165	4.41	112	4.25	108
3X2	11.14	283	11.75	298	11.14	283	3.00×2.00	76.2×50.8	8.25	210	4.41	112	4.25	108
3	11.14	283	11.75	298	11.14	283	3.00×3.00	76.2×76.2	8.25	210	5.35	136	6.00	153
4X3	12.00	305	12.65	321	12.00	305	4.00×3.00	101.6×76.2	10.00	254	5.35	136	6.00	153
4	12.00	305	12.65	321	12.00	305	4.00×4.00	101.6×101.6	10.00	254	5.94	151	7.48	190
6X4	15.88	403	16.50	419	18.00	457	6.00×4.00	152.4×101.6	12.50	318	5.94	151	7.48	190
6	15.88	403	16.50	419	18.00	457	6.00×6.00	152.4×152.4	12.50	318	7.20	183	9.05	230
8X6	19.75	502	20.38	518	20.50	521	8.00×6.00	203.2×152.4	15.00	381	7.20	183	9.05	230
8	19.75	502	20.38	518	20.50	521	8.00×8.00	203.2×203.2	15.00	381	11.42	290	10.70	272
10X8	22.38	568	23.00	584	22.00	559	10.00×8.00	254×203.2	17.50	445	11.42	290	10.70	272
10	22.38	568	23.00	584	22.00	559	10.00×10.00	254×254	17.50	445	13.39	340	12.72	323
12X10	25.50	648	26.15	664	25.00	635	12.00×10.00	304.8×254	20.50	520	13.39	340	12.72	323
12	25.50	648	26.15	664	25.00	635	12.00×12.00	304.8×304.8	20.50	520	15.91	404	14.30	363
14X12	30.00	762	30.65	778	30.00	762	13.25×12.00	337×304.8	23.00	585	15.91	404	14.30	363
14	30.00	762	30.65	778	30.00	762	13.25×13.25	337×337	23.00	585	14.80	376	15.28	388
16X14	33.00	838	33.62	854	33.00	838	15.25×13.25	387×337	25.50	650	14.80	376	15.28	388
16	33.00	838	33.62	854	33.00	838	15.25×15.25	387×387	25.50	650	16.38	416	16.97	431
18X16	36.00	914	36.62	930	36.00	914	17.25×15.25	438×387	28.00	710	16.38	416	16.97	431
18	36.00	914	36.62	930	36.00	914	17.25×17.25	438×438	28.00	710	19.17	487	19.30	490
20X18	39.00	991	39.75	1010	39.00	991	19.25×17.25	489×438	30.50	775	19.17	487	19.30	490
20	39.00	991	39.75	1010	39.00	991	19.25×19.25	489×489	30.50	775	18.35	466	20.28	515
24X20	45.00	1143	45.88	1165	45.00	1143	23.25×19.25	591×489	36.00	915	18.35	466	20.28	515
24	45.00	1143	45.88	1165	45.00	1143	23.25×23.25	591×591	36.00	915	23.46	596	23.75	603
30X24	55.00	1397	56.00	1422	55.00	1397	29.00×23.25	736.5×591	43.00	1092	23.46	596	23.75	603
30	55.00	1397	56.00	1422	55.00	1397	29.00×29.00	736.5×736.5	43.00	1092	28.15	715	29.75	756
36X30	68.00	1727	69.12	1756	68.00	1727	34.50×29.00	876×736.5	50.00	1270	28.15	715	29.75	756
36	68.00	1727	69.12	1756	68.00	1727	34.50×34.50	876×876	50.00	1270	32.09	815	34.20	869

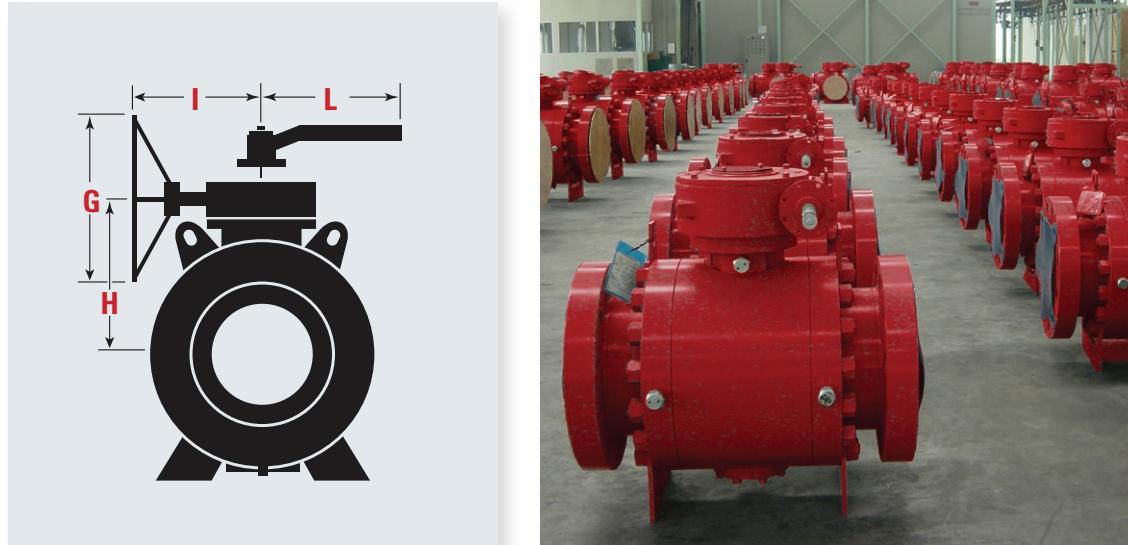


SIZE inch	G		H		I		L		FL	WEIGHT		BW
	inch	mm	inch	mm	inch	mm	inch	mm		LBS	KG	
2	-	-	-	-	-	-	8.65	220	55	25	44	20
3X2	-	-	-	-	-	-	8.65	220	75	34	55	25
3	-	-	-	-	-	-	14.95	380	101	46	84	38
4X3	-	-	-	-	-	-	14.95	380	123	56	99	45
4	-	-	-	-	-	-	17.75	450	194	88	165	75
6X4	-	-	-	-	-	-	17.75	450	256	116	187	85
6	15.75	400	10.60	269	12.85	327	-	-	406	184	353	160
8X6	15.75	400	10.60	269	12.85	327	-	-	485	220	419	190
8	19.70	500	12.85	327	14.15	360	-	-	811	368	705	320
10X8	19.70	500	12.85	327	14.15	360	-	-	985	447	871	395
10	19.70	500	15.25	387	14.15	360	-	-	1301	590	1124	510
12X10	19.70	500	15.25	387	14.15	360	-	-	1446	656	1268	575
12	23.65	600	16.80	427	16.45	418	-	-	1931	876	1775	805
14X12	23.65	600	16.80	427	16.45	418	-	-	2154	977	1962	890
14	27.50	700	17.95	456	22.65	575	-	-	2579	1170	2337	1060
16X14	27.50	700	17.95	456	22.65	575	-	-	2919	1324	2491	1130
16	27.50	700	19.65	499	22.65	575	-	-	3298	1496	2712	1230
18X16	27.50	700	19.65	499	22.65	575	-	-	3494	1585	2976	1350
18	27.50	700	22.40	569	22.65	575	-	-	4916	2230	4321	1960
20X18	27.50	700	22.40	569	22.65	575	-	-	5203	2360	4586	2080
20	27.50	700	23.70	602	22.80	579	-	-	5886	2670	5225	2370
24X20	27.50	700	23.70	602	22.80	579	-	-	7165	3250	6349	2880
24	27.50	700	28.40	721	26.40	670	-	-	9480	4300	8378	3800
30X24	27.50	700	28.40	721	26.40	670	-	-	13669	6200	12125	5500
30	27.50	700	35.65	906	26.40	670	-	-	14771	6700	13140	5960
36X30	27.50	700	35.65	906	26.40	670	-	-	17417	7900	15653	7100
36	27.50	700	40.12	1019	27.15	690	-	-	21605	9800	19621	8900

# Dimensions and Weights ANSI Class 600

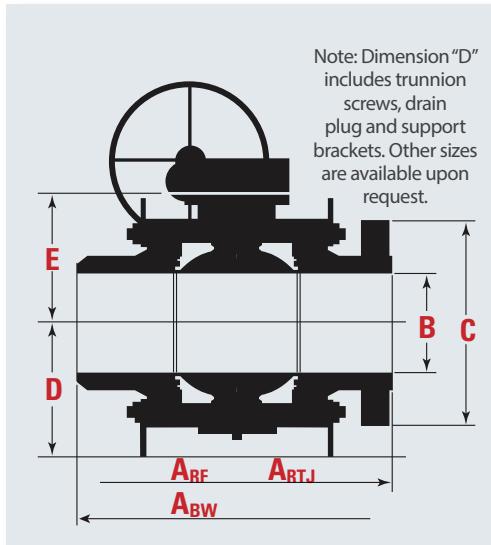


SIZE	A RF		A RTJ		A BW		B	C	D	E
	inch	mm	inch	mm	inch	mm				
<b>2</b>	11.50	292	11.62	295	11.50	292	2.00×2.00	50.8×50.8	6.50	165
<b>3X2</b>	14.00	356	14.12	359	14.00	356	3.00×2.00	76.2×50.8	8.25	210
<b>3</b>	14.00	356	14.12	359	14.00	356	3.00×3.00	76.2×76.2	8.25	210
<b>4X3</b>	17.00	432	17.12	435	17.00	432	4.05X3.00	103×76.2	10.75	273
<b>4</b>	17.00	432	17.12	435	17.00	432	4.05×4.05	103×103	10.75	273
<b>6X4</b>	22.00	559	22.12	562	22.00	559	6.00×4.05	152.4×103	14.00	356
<b>6</b>	22.00	559	22.12	562	22.00	559	6.00×6.00	152.4×152.4	14.00	356
<b>8X6</b>	26.00	660	26.12	664	26.00	660	8.00×6.00	203.2×152.4	16.50	419
<b>8</b>	26.00	660	26.12	664	26.00	660	8.00×8.00	203.2×203.2	16.50	419
<b>10X8</b>	31.00	787	31.12	791	31.00	787	10.00×8.00	254×203.2	20.00	510
<b>10</b>	31.00	787	31.12	791	31.00	787	10.00×10.00	254×254	20.00	510
<b>12X10</b>	33.00	838	33.12	841	33.00	838	12.00×10.00	304.8×254	22.00	560
<b>12</b>	33.00	838	33.12	841	33.00	838	12.00×12.00	304.8×304.8	22.00	560
<b>14X12</b>	35.00	889	35.12	892	35.00	889	13.25×12.00	337×304.8	23.75	605
<b>14</b>	35.00	889	35.12	892	35.00	889	13.25×13.25	337×337	23.75	605
<b>16X14</b>	39.00	991	39.12	994	39.00	991	15.25×13.25	387×337	27.00	685
<b>16</b>	39.00	991	39.12	994	39.00	991	15.25×15.25	387×387	27.00	685
<b>18X16</b>	43.00	1092	43.12	1095	43.00	1092	17.25×15.25	438×387	29.25	745
<b>18</b>	43.00	1092	43.12	1095	43.00	1092	17.25×17.25	438×438	29.25	745
<b>20X18</b>	47.00	1194	47.25	1200	47.00	1194	19.25×17.25	489×438	32.00	815
<b>20</b>	47.00	1194	47.25	1200	47.00	1194	19.25×19.25	489×489	32.00	815
<b>24X20</b>	55.00	1397	55.38	1407	55.00	1397	23.25×19.25	591×489	37.00	940
<b>24</b>	55.00	1397	55.38	1407	55.00	1397	23.25×23.25	591×591	37.00	940
<b>30X24</b>	65.00	1651	65.50	1664	65.00	1651	29.00×23.25	736.5×591	44.50	1130
<b>30</b>	65.00	1651	65.50	1664	65.00	1651	29.00×29.00	736.5×736.5	44.50	1130
<b>36X30</b>	82.00	2083	82.64	2099	82.00	2083	34.50×29.00	876×736.5	51.75	1314
<b>36</b>	82.00	2083	82.64	2099	82.00	2083	34.50×34.50	876×876	51.75	1314
									33.46	850
									35.00	889

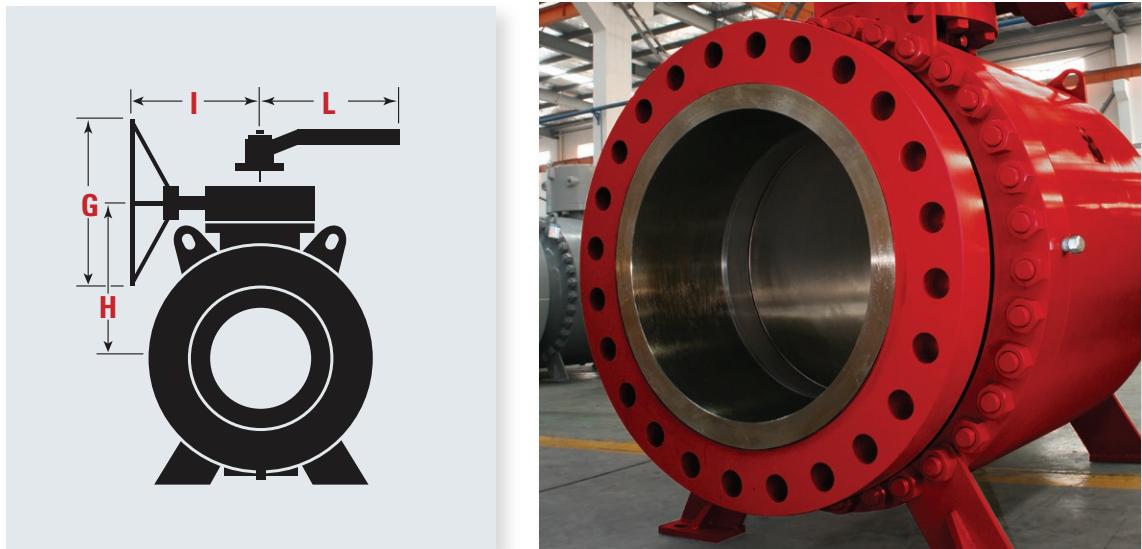


SIZE	G		H		I		L		FL	WEIGHT		BW
	inch	inch	mm	mm	inch	mm	inch	mm		LBS	KG	
<b>2</b>	-	-	-	-	-	-	22.5	575	84	38	66	30
<b>3X2</b>	-	-	-	-	-	-	22.5	575	108	49	77	35
<b>3</b>	-	-	-	-	-	-	27.5	700	168	76	143	65
<b>4X3</b>	-	-	-	-	-	-	27.5	700	220	100	176	80
<b>4</b>	15.75	400	9.30	236	12.85	327	33.5	850	287	130	231	105
<b>6X4</b>	15.75	400	9.30	236	12.85	327	33.5	850	392	178	287	130
<b>6</b>	15.75	400	10.60	269	12.85	327	-	-	589	267	463	210
<b>8X6</b>	15.75	400	10.60	269	12.85	327	-	-	723	328	595	270
<b>8</b>	23.65	600	12.85	326	14.85	377	-	-	1045	474	904	410
<b>10X8</b>	23.65	600	12.85	326	14.85	377	-	-	1279	580	1080	490
<b>10</b>	23.65	600	15.45	393	16.45	418	-	-	1786	810	1455	660
<b>12X10</b>	23.65	600	15.45	393	16.45	418	-	-	1949	884	1631	740
<b>12</b>	27.50	700	17.55	446	21.45	545	-	-	2793	1267	2315	1050
<b>14X12</b>	27.50	700	17.55	446	21.45	545	-	-	3146	1427	2624	1190
<b>14</b>	27.50	700	18.50	470	22.65	575	-	-	3020	1370	2734	1240
<b>16X14</b>	27.50	700	18.50	470	22.65	575	-	-	3384	1535	2954	1340
<b>16</b>	27.50	700	20.25	514	22.65	575	-	-	4228	1918	3616	1640
<b>18X16</b>	27.50	700	20.25	514	22.65	575	-	-	4674	2120	4012	1820
<b>18</b>	27.50	700	22.95	583	22.80	579	-	-	6217	2820	5423	2460
<b>20X18</b>	27.50	700	22.95	583	22.80	579	-	-	6691	3035	5864	2660
<b>20</b>	27.50	700	25.95	659	26.40	670	-	-	8267	3750	7275	3300
<b>24X20</b>	27.50	700	25.95	659	26.40	670	-	-	9414	4270	8686	3940
<b>24</b>	27.50	700	29.70	754	27.15	690	-	-	13779	6250	12699	5760
<b>30X24</b>	27.50	700	29.70	754	27.15	690	-	-	16755	7600	15653	7100
<b>30</b>	27.50	700	36.05	916	27.15	690	-	-	20062	9100	18298	8300
<b>36X30</b>	27.50	700	36.05	916	27.15	690	-	-	22708	10300	20944	9500
<b>36</b>	27.50	700	40.90	1039	32.70	830	-	-	28440	12900	25353	11500

# Dimensions and Weights ANSI Class 900

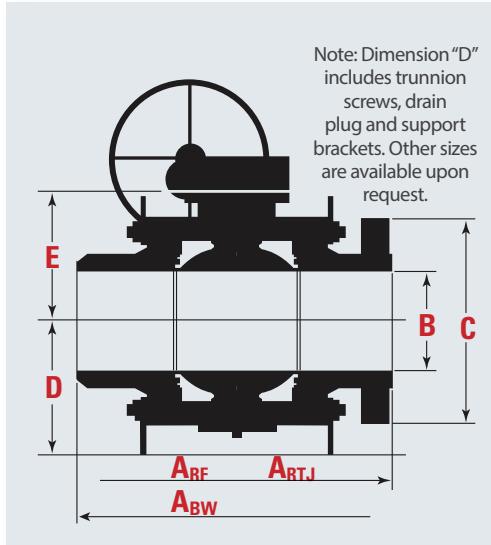


SIZE	A <sub>RF</sub>	A <sub>RTJ</sub>	A <sub>BW</sub>	B		C		D		E		
inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
<b>2</b>	14.50	368	14.62	371	14.50	368	2.00×2.00	50.8×50.8	8.50	216	4.29	109
<b>3X2</b>	15.00	381	15.12	384	15.00	381	3.00×2.00	76.2×50.8	9.50	241	4.29	109
<b>3</b>	15.00	381	15.12	384	15.00	381	3.00×3.00	76.2×76.2	9.50	241	5.47	139
<b>4X3</b>	18.00	457	18.12	460	18.00	457	4.05X3.00	103×76.2	11.50	292	5.47	139
<b>4</b>	18.00	457	18.12	460	18.00	457	4.05×4.05	103×103	11.50	292	6.42	163
<b>6X4</b>	24.00	610	24.12	613	24.00	610	6.00×4.05	152.4×103	15.00	381	6.42	163
<b>6</b>	24.00	610	24.12	613	24.00	610	6.00×6.00	152.4×152.4	15.00	381	7.09	180
<b>8X6</b>	29.00	737	29.12	740	29.00	737	8.00×6.00	203.2×152.4	18.50	470	7.09	180
<b>8</b>	29.00	737	29.12	740	29.00	737	8.00×8.00	203.2×203.2	18.50	470	12.09	307
<b>10X8</b>	33.00	838	33.12	841	33.00	838	10.00×8.00	254×203.2	21.50	546	12.09	307
<b>10</b>	33.00	838	33.12	841	33.00	838	10.00×10.00	254×254	21.50	546	14.02	356
<b>12X10</b>	38.00	965	38.12	968	38.00	965	12.00×10.00	304.8×254	24.00	610	14.02	356
<b>12</b>	38.00	965	38.12	968	38.00	965	12.00×12.00	304.8×304.8	24.00	610	14.96	380
<b>14X12</b>	40.50	1029	40.88	1038	40.50	1029	12.75×12.00	324×304.8	25.25	641	14.96	380
<b>14</b>	40.50	1029	40.88	1038	40.50	1029	12.75×12.75	324×324	25.25	641	16.06	408
<b>16X14</b>	44.50	1130	44.88	1140	44.50	1130	14.75×12.75	374.65×324	27.75	705	16.06	408
<b>16</b>	44.50	1130	44.88	1140	44.50	1130	14.75×14.75	374.65×374.65	27.75	705	18.31	465
<b>18X16</b>	48.00	1219	48.5	1232	48.00	1219	16.75×14.75	425.5×374.65	31.00	787	18.31	465
<b>18</b>	48.00	1219	48.5	1232	48.00	1219	16.75×16.75	425.5×425.5	31.00	787	20.08	510
<b>20X18</b>	52.00	1321	52.5	1334	52.00	1321	18.62×16.75	473×425.5	33.75	855	20.08	510
<b>20</b>	52.00	1321	52.5	1334	52.00	1321	18.62×18.62	473×473	33.75	855	22.05	560
<b>24X20</b>	61.00	1549	61.75	1568	61.00	1549	22.50×18.62	572×473	41.00	1041	22.05	560
<b>24</b>	61.00	1549	61.75	1568	61.00	1549	22.50×22.50	572×572	41.00	1041	24.41	620

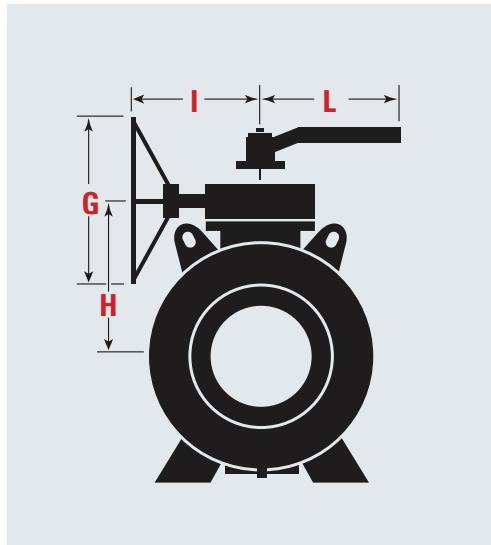


SIZE	G		H		I		L		FL	WEIGHT	BW	
inch	inch	mm	inch	mm	inch	mm	inch	mm	LBS	KG	LBS	KG
<b>2</b>	7.85	200	7.30	186	9.05	230	22.65	575	115	52	75	34
<b>3X2</b>	7.85	200	7.30	186	9.05	230	22.65	575	132	60	110	50
<b>3</b>	7.85	200	8.50	216	9.05	230	27.55	700	216	98	154	70
<b>4X3</b>	7.85	200	8.50	216	9.05	230	27.55	700	265	120	198	90
<b>4</b>	15.75	400	10.05	255	12.85	327	33.45	850	386	175	276	125
<b>6X4</b>	15.75	400	10.05	255	12.85	327	33.45	850	540	245	430	195
<b>6</b>	23.65	600	12.10	307	14.85	377	-	-	783	355	573	260
<b>8X6</b>	23.65	600	12.10	307	14.85	377	-	-	970	440	661	300
<b>8</b>	27.50	700	14.15	360	21.45	545	-	-	1389	630	1080	490
<b>10X8</b>	27.50	700	14.15	360	21.45	545	-	-	1631	740	1323	600
<b>10</b>	27.50	700	16.15	410	22.65	575	-	-	2138	970	1653	750
<b>12X10</b>	27.50	700	16.15	410	22.65	575	-	-	2480	1125	1984	900
<b>12</b>	27.50	700	19.25	489	22.65	575	-	-	3064	1390	2425	1100
<b>14X12</b>	27.50	700	19.25	489	22.65	575	-	-	3285	1490	2579	1170
<b>14</b>	27.50	700	18.65	474	22.65	575	-	-	3638	1650	2866	1300
<b>16X14</b>	27.50	700	18.65	474	22.65	575	-	-	4034	1830	3197	1450
<b>16</b>	27.50	700	21.25	540	22.80	579	-	-	5071	2300	4034	1830
<b>18X16</b>	27.50	700	21.25	540	22.80	579	-	-	5788	2580	4497	2040
<b>18</b>	27.50	700	24.85	631	26.40	670	-	-	8598	3900	6878	3120
<b>20X18</b>	27.50	700	24.85	631	26.40	670	-	-	9259	4200	7408	3360
<b>20</b>	27.50	700	26.00	660	26.38	670	-	-	11244	5100	8995	4080
<b>24X20</b>	27.50	700	26.00	660	26.40	670	-	-	13448	6100	9480	4300
<b>24</b>	27.50	700	30.70	780	27.15	690	-	-	17196	7800	13118	5950

# Dimensions and Weights ANSI Class 1500

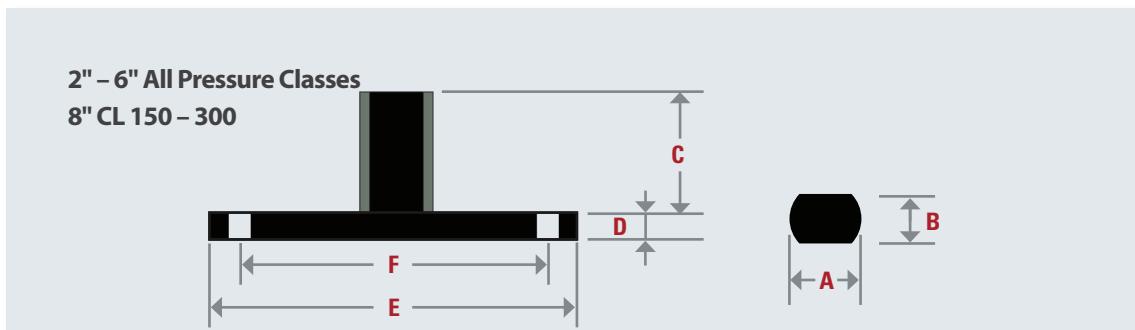


SIZE	A <sub>RF</sub>	A <sub>RTJ</sub>	A <sub>BW</sub>	B	C	D	E					
inch	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
<b>2</b>	14.50	368	14.62	371	14.50	368	2.00×2.00	50.8×50.8	8.50	216	5.08	129
<b>3X2</b>	18.50	470	18.62	473	18.50	470	3.00×2.00	76.2×50.8	10.51	267	5.08	129
<b>3</b>	18.50	470	18.62	473	18.50	470	3.00×3.00	76.2×76.2	10.51	267	6.89	175
<b>4X3</b>	21.50	546	21.62	549	21.50	546	4.00×3.00	101.6×76.2	12.25	311	6.89	175
<b>4</b>	21.50	546	21.62	549	21.50	546	4.00×4.00	101.6×101.6	12.25	311	7.36	187
<b>6X4</b>	27.75	705	27.75	711	27.75	705	5.75×4.00	146×101.6	15.51	394	7.36	187
<b>6</b>	27.75	705	27.75	711	27.75	705	5.75×5.75	146×146	15.51	394	8.27	210
<b>8X6</b>	32.75	832	32.75	841	32.75	832	7.63×5.75	194×146	19.02	483	8.27	210
<b>8</b>	32.75	832	32.75	841	32.75	832	7.63×7.63	194×194	19.02	483	13.74	349
<b>10X8</b>	39.00	991	39.38	1000	39.00	991	9.50×7.63	241×194	23.00	584	13.74	349
<b>10</b>	39.00	991	39.38	1000	39.00	991	9.50×9.50	241×241	23.00	584	14.72	374
<b>12X10</b>	44.50	1130	45.12	1146	44.50	1130	11.38×9.50	289×241	26.50	673	14.72	374
<b>12</b>	44.50	1130	45.12	1146	44.50	1130	11.38×11.38	289×289	26.50	673	15.75	400
<b>14X12</b>	49.50	1257	50.25	1276	49.50	1257	12.40×11.38	315×289	29.53	750	15.75	400
<b>14</b>	49.50	1257	50.25	1276	49.50	1257	12.40×12.40	315×315	29.53	750	16.54	420
<b>16X14</b>	54.50	1384	55.38	1407	54.50	1384	14.25×12.40	360×315	32.52	826	16.54	420
<b>16</b>	54.50	1384	55.38	1407	54.50	1384	14.25×14.25	360×360	32.52	826	22.05	560
											19.80	503

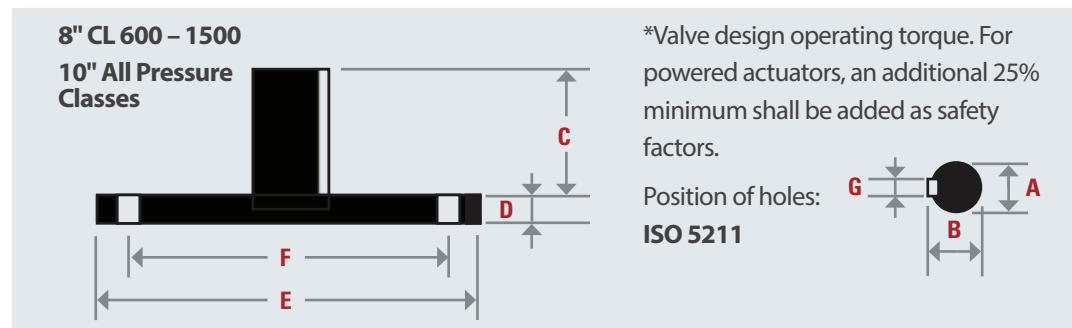


SIZE	G inch	G mm	H inch	H mm	I inch	I mm	L inch	L mm	FL	WEIGHT LBS	BW KG
2	7.85	200	8.45	215	9.05	230	22.65	575	170	77	110
3X2	7.85	200	8.45	215	9.05	230	22.65	575	221	100	198
3	15.75	400	10.15	258	12.85	327	-	-	386	175	298
4X3	15.75	400	10.15	258	12.85	327	-	-	448	203	375
4	19.70	500	11.40	290	14.15	360	-	-	622	282	419
6X4	19.70	500	11.40	290	14.15	360	-	-	851	386	706
6	27.50	700	13.40	340	21.45	545	-	-	1279	580	970
8X6	27.50	700	13.40	340	21.45	545	-	-	1557	706	1058
8	27.50	700	16.40	417	22.65	575	-	-	2326	1055	1632
10X8	27.50	700	16.40	417	22.65	575	-	-	2833	1285	1852
10	27.50	700	18.75	476	22.65	575	-	-	2977	1350	2205
12X10	27.50	700	18.75	476	22.65	575	-	-	4300	1950	3021
12	27.50	700	22.00	559	22.65	575	-	-	6240	2830	4322
14X12	27.50	700	22.00	559	22.65	575	-	-	6880	3120	5733
14	27.50	700	23.55	598	26.38	670	-	-	7387	3350	6174
16X14	27.50	700	23.55	598	26.38	670	-	-	7828	3550	6615
16	27.50	700	24.25	621	26.38	670	-	-	9923	4500	8379

# Top Mounting Dimensions and Stem Torque



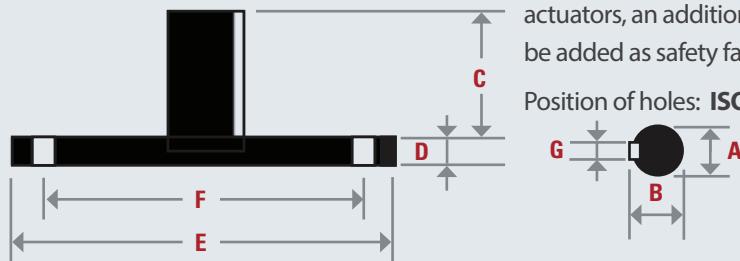
SIZE	CLASS	A	B	C	D	E					
inch		inch	mm	inch	mm	inch	mm	inch	mm		
2	150	0.870	22.1	0.555	14.1	0.98	25	0.39	10	4.13	104.8
	300	0.870	22.1	0.555	14.1	1.18	30	0.39	10	4.13	104.8
	600	0.870	22.1	0.555	14.1	1.57	40	0.71	18	5.91	150
	900	0.870	22.1	0.555	14.1	1.57	40	0.71	18	5.91	150
	1500	1.232	31.3	0.748	19	1.57	40	0.94	24	5.91	150
3	150	1.232	31.3	0.748	19	1.57	40	0.71	18	4.33	110
	300	1.232	31.3	0.748	19	1.57	40	0.71	18	4.33	110
	600	1.378	35	0.992	25.2	1.97	50	0.79	20	6.22	158
	900	1.378	35	0.992	25.2	1.97	50	0.94	24	6.69	170
	1500	1.496	38	0.992	25.2	1.97	50	1.18	30	6.69	170
4	150	1.232	31.3	0.748	19	1.97	50	0.79	20	5.71	145
	300	1.232	31.3	0.748	19	1.97	50	0.79	20	5.71	145
	600	1.496	38	0.992	25.2	1.97	50	0.94	24	6.89	175
	900	1.772	38	0.992	25.2	1.97	50	1.18	30	6.89	175
	1500	1.772	45	1.244	31.6	1.97	50	1.18	30	8.27	210
6	150	1.988	50.5	1.244	31.6	1.97	50	1.18	30	6.89	175
	300	1.988	50.5	1.244	31.6	1.97	50	1.18	30	6.89	175
	600	1.988	50.5	1.244	31.6	1.97	50	1.18	30	6.89	175
	900	1.988	50.5	1.244	31.6	1.97	50	1.18	30	8.27	210
	1500	2.492	63.3	1.744	44.3	2.76	70	1.18	30	11.81	300
8	150	1.988	50.5	1.244	31.6	2.76	70	1.18	30	8.27	210
	300	2.488	63.2	1.744	44.3	2.76	70	1.18	30	8.27	210
	600	2.870	72.9	3.189	81	3.54	90	1.18	30	8.27	210
	900	2.870	72.9	3.189	81	3.74	95	1.18	30	11.81	300
	1500	2.870	72.9	3.189	81	3.74	95	1.38	35	11.81	300
10	150	2.870	72.9	3.189	81	2.95	75	1.18	30	11.81	300
	300	2.870	72.9	3.189	81	2.95	75	1.18	30	11.81	300
	600	3.240	82.3	3.606	91.6	3.54	90	1.18	30	11.81	300
	900	3.240	82.3	3.606	91.6	3.74	95	1.18	30	11.81	300
	1500	3.240	82.3	3.606	91.6	3.74	95	1.38	35	11.81	300
12	150	3.240	82.3	3.606	91.6	3.74	95	1.18	30	11.81	300
	300	3.240	82.3	3.606	91.6	3.74	95	1.18	30	11.81	300
	600	3.992	101.4	4.409	112	4.13	105	1.18	30	11.81	300
	900	3.992	101.4	4.409	112	4.13	105	1.38	35	13.78	350
	1500	3.992	101.4	4.409	112	4.13	105	1.57	40	13.78	350



SIZE	CLASS	F inch	F mm	G inch	G mm	H	I = (DIAMETER)	*TORQUE	
						holes	inch mm	IN-LBS	N-M
<b>2</b>	150	-	-	-	-	-	-	531	60
	300	-	-	-	-	-	-	841	95
	600	4.92	125	-	-	4	0.53	13.5	1328
	900	4.92	125	-	-	4	0.53	13.5	1947
<b>3</b>	1500	4.92	125	-	-	4	0.53	13.5	3717
	150	-	-	-	-	-	-	1239	140
	300	-	-	-	-	-	-	1947	220
	600	5.43	138	-	-	4	0.53	13.5	2921
<b>4</b>	900	5.43	138	-	-	4	0.53	13.5	4337
	1500	5.51	140	-	-	4	0.67	17	7169
	150	4.92	125	-	-	4	0.53	13.5	1947
	300	4.92	125	-	-	4	0.53	13.5	3009
<b>6</b>	600	5.51	140	-	-	4	0.67	17	4071
	900	5.51	140	-	-	4	0.67	17	7346
	1500	6.50	165	-	-	4	0.79	20	13276
	150	5.51	140	-	-	4	0.67	17	3363
<b>8</b>	300	5.51	140	-	-	4	0.67	17	5399
	600	5.51	140	-	-	4	0.67	17	8497
	900	6.50	165	-	-	4	0.79	20	16639
	1500	10.00	254	-	-	8	0.67	17	28765
<b>10</b>	150	6.50	165	-	-	4	0.79	20	5664
	300	6.50	165	-	-	4	0.79	20	10444
	600	6.50	165	0.748	19	4	0.79	20	17701
	900	10.00	254	0.748	19	8	0.67	17	31863
<b>12</b>	1500	10.00	254	0.748	19	8	0.67	17	48679
	150	10.00	254	0.748	19	8	0.67	17	10621
	300	10.00	254	0.748	19	8	0.67	17	18764
	600	10.00	254	0.866	22	8	0.67	17	31686
<b>1500</b>	900	10.00	254	0.866	22	8	0.67	17	46732
	1500	10.00	254	0.866	22	8	0.67	17	66912
	150	10.00	254	0.866	22	8	0.67	17	14692
	300	10.00	254	0.866	22	8	0.67	17	22038
<b>12</b>	600	10.00	254	1.000	25.4	8	0.67	17	47705
	900	11.73	298	1.000	25.4	8	0.79	20	65318
	1500	11.73	298	1.000	25.4	8	0.79	20	94703
									10700

# Top Mounting Dimensions and Stem Torque

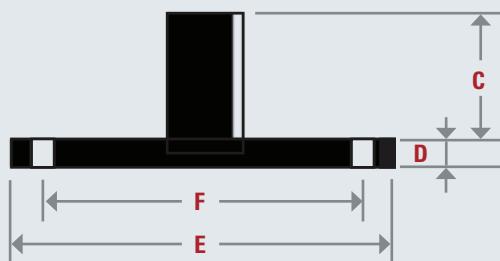
**8" CL 600 – 1500, 10" & above**



\*Valve design operating torque. For powered actuators, an additional 25% minimum shall be added as safety factors.

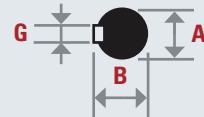
Position of holes: **ISO 5211**

SIZE	CLASS	A inch	A mm	B inch	B mm	C inch	C mm	D inch	D mm	E inch	E mm
14	150	3.240	82.3	3.606	91.6	3.54	90	1.30	33	11.81	300
	300	3.240	82.3	3.606	91.6	3.54	90	1.30	33	11.81	300
	600	3.992	101.4	4.409	112	4.13	105	1.30	33	13.78	350
	900	3.992	101.4	4.409	112	4.13	105	1.38	35	13.78	350
	1500	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
16	150	3.240	82.3	3.606	91.6	3.74	95	1.30	33	11.81	300
	300	3.240	82.3	3.606	91.6	3.74	95	1.30	33	11.81	300
	600	3.992	101.4	4.409	112	4.13	105	1.30	33	13.78	350
	900	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
	1500	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
18	150	3.992	101.4	4.409	112	3.94	100	1.30	33	13.78	350
	300	3.992	101.4	4.409	112	3.94	100	1.30	33	13.78	350
	600	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
	900	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
	1500	3.992	101.4	4.409	112	4.53	115	1.30	33	13.78	350
20	150	3.992	101.4	4.409	112	4.53	115	1.38	35	13.78	350
	300	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
	600	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
	900	4.724	120	5.236	133	4.53	115	1.57	40	16.34	415
	1500	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
24	150	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
	300	4.331	110	4.732	120.2	4.53	115	1.38	35	13.78	350
	600	4.724	120	5.236	133	4.53	115	1.97	50	18.70	475
	900	5.906	150	6.551	166.4	7.87	200	1.97	50	18.70	475
	1500	4.331	110	4.732	120.2	5.91	150	1.38	35	13.78	350
30	300	4.724	120	5.236	133	5.91	150	1.57	40	18.70	475
	600	5.906	150	6.551	166.4	7.87	200	1.97	50	18.70	475
	1500	4.724	120	5.236	133	5.91	150	1.57	40	16.34	415
36	300	4.724	120	5.236	133	7.87	200	1.97	50	18.70	475
	600	5.906	150	6.551	166.4	7.87	200	1.97	50	18.70	475

**8" CL 600 – 1500, 10" & above**


\*Valve design operating torque. For powered actuators, an additional 25% minimum shall be added as safety factors.

Position of holes: ISO 5211



SIZE inch	CLASS	F		G		H	I = ( DIAMETER )		* TORQUE	
		inch	mm	inch	mm		inch	mm	IN-LBS	N-M
14	150	10.00	254	0.866	22	8	0.67	17	24340	2750
	300	10.00	254	0.866	22	8	0.67	17	31686	3580
	600	11.73	298	1.000	25.4	8	0.79	20	57707	6520
	900	11.73	298	1.000	25.4	8	0.79	20	87180	9850
	1500	11.73	298	1.000	25.4	8	0.79	20	144975	16380
16	150	10.00	254	0.866	22	8	0.67	17	32305	3650
	300	10.00	254	0.866	22	8	0.67	17	49564	5600
	600	11.73	298	1.000	25.4	8	0.79	20	76869	8685
	900	11.73	298	1.000	25.4	8	0.79	20	112847	12750
	1500	11.73	298	1.000	25.4	8	0.79	20	172589	19500
18	150	11.73	298	1.000	25.4	8	0.79	20	42926	4850
	300	11.73	298	1.000	25.4	8	0.79	20	69390	7840
	600	11.73	298	1.000	25.4	8	0.79	20	118157	13350
	900	11.73	298	1.000	25.4	8	0.79	20	176838	19980
	1500	11.73	298	1.000	25.4	8	0.79	20	48325	5460
20	300	11.73	298	1.000	25.4	8	0.79	20	84702	9570
	600	11.73	298	1.000	25.4	8	0.79	20	163739	18500
	900	14.02	356	1.000	25.4	8	1.34	34	232951	26320
	150	11.73	298	1.000	25.4	8	0.79	20	97093	10970
	300	11.73	298	1.000	25.4	8	0.79	20	155596	17580
24	600	15.98	406	1.240	31.5	8	1.50	38	273311	30880
	900	15.98	406	1.496	38	8	1.57	40	375006	42370
	150	11.73	298	1.000	25.4	8	0.79	20	164447	18580
	300	15.98	406	1.240	31.5	8	1.50	38	243041	27460
	600	15.98	406	1.496	38	8	1.57	40	370226	41830
30	150	14.02	356	1.000	25.4	8	1.34	34	199850	22580
	300	15.98	406	1.240	31.5	8	1.50	38	302518	34180
	600	15.98	406	1.496	38	8	1.57	40	462628	52270

# Material Specifications

DESCRIPTION	MATERIALS
<b>Body, Bonnet or Adapter, Top Cover</b>	1. Carbon steel: ASTM A105 2. Low Temp. Carbon steel: ASTM A350-LF2 3. Stainless steel: ASTM A182-F316 ASTMA182-F304 ASTM A182-F316L ASTM A182-F304L ASTM A182-F51 4. Monel
<b>Ball, Stem, Seat ring, Trunnion</b>	1. Carbon steel with 3 Mil ENP 2. Low Temp. Carbon steel with 3 Mil ENP 3. Stainless steel: ASTM 182-F316 ASTM 182-F304 ASTM A182-316L ASTM A182-F304L ASTM A182-F51 ASTM A182-F6a 5. Monel 6. 17-4PH
Bolting	1. A193-B7M/A194-2HM      4. A193-B8/A194-8 2. A193-B7/A194-2H      5. A193-B8M/A194-8M 3. A320-L7/A194-4      6. A320-L7M/A194-7M
<b>Stem Bearing, Trunnion Bearing</b> <b>Adapter Seal, Stem seal, Bonnet Seal</b> <b>Seat Seal, Trunnion Seal</b> <b>Adapter Sub-Seal, Bonnet Sub-Seal,</b> <b>Stem Sub-Seal, Trunnion Sub-Seal</b> <b>Seat Insert</b> <b>Thrust Bearing</b> <b>Seat Spring</b> <b>Injection Fittings</b> <b>Bleed Valve, Drain Plug</b> <b>Key, Pin</b> <b>Gear Operator</b>	DU 1. Buna-N 3. Low Temp. Buna-N 2. Viton 4. HNBR 5. EPDM 1. 316SS Spiral Wound Graphite 2. Graphite 1. Devlon 2. Nylon 3. Peek PTFE Inconel X-750 1. Carbon steel 2. Stainless steel 1. Carbon steel 2. Stainless steel 1. Carbon steel 2. Stainless steel Cast Iron case, Carbon Steel worm & segment gear

## Specifications for Seat Materials

PROPERTIES	Devlon*	NYLON	PEEK
Type	Cast or Machined	Molded, Cast or Machined	Molded or Machined
Specific Gravity	1.14	1.02±0.02	130-1.34
Hardness (ASTM D2240)	D78/80	D75±5	D85±5
Tensile strength (psi)	11592	8000(min)	11000(min)
Ultimate elongation (%)	5.37	250min( $\leq$ 6") 16min(>6")	30(min)
Temperature Limitations (F°)	-50 to 392	-50 to 200	-50 to 450
Color Code	Yellow	Natural	Various

## Specifications for Seal Materials

PROPERTIES	VITON	BUNA-N	LOW TEMP. BUNA-N	EPDM	HNBR*
Type	Molded	Molded	Molded	Molded	Molded
Specific Gravity	1.85±0.02	1.31	1.31±0.03	1.23	1.33±0.03
Hardness (ASTM D2240)	D75±5	D90±5	D75±5	D90±5	D80±5
Tensile strength (psi)	—	—	1450	1960	2450(min)
Ultimate elongation (%)	—	—	125(min)	101	225(min)
Temperature Limitations (F°)	-20 to 400	-15 to 250	-65 to 250	-50 to 500	-50 to 300
Color Code	Orange	No Color Code	Yellow	Flourescent Orange	Green

## Specifications for Gasket

TYPE	USE	Temp. Range (°F)	PH
Spiral Wound 316SS+Graphite*	100% Fire-safe	-328 to 500	0-14w
Solid Graphite	100% Fire-safe	-328 to 500	0-14

\*Standard Stocking

# Specifications for Flow Coefficient

Flow Coefficients (CV) Rating

SIZE	CL 150	CL 300	CL 600	CL 900	CL 1500
2x2	180	180	180	180	180
3x2	180	195	180	187	180
3x3	1350	1150	1050	935	180
4x3	545	535	550	510	180
4x4	2500	2200	1850	1760	180
6x4	790	765	745	740	180
6x6	5300	5290	4460	4405	180
8x6	1945	1945	2220	2035	180
8x8	10500	9600	8730	8475	180
10x8	4050	4040	4065	4060	180
10x10	17500	16750	14250	14205	180
12x10	6900	7100	7150	7135	180
12x12	26300	25500	22550	21430	180
14x12	13100	13200	14350	14290	180
14x14	31850	30050	28400	26800	180
16x14	14600	14580	14350	14315	180
16x16	43300	41700	38150	36700	180
18x16	19750	19800	20350	19750	
18x18	57300	55370	50950	48700	
20x18	27750	28050	29500	29430	
20x20	74500	72300	65600	62500	
24x20	44700	44650	48900	48710	
24x24	112300	109150	98150	94050	
30x24	76000	75900	73850		
30x30	179300	171200	158900		
36x30	123000	121550	118300		
36x36	180	180	180		

## Method of Calculating Flow

The Flow Coefficient "Cv" of a valve is the flow rate of water (gallons/minute) through a full opened valve with a pressure drop of 1 psi across the valve. To find the flow of liquid through the valve from the Cv, use the following formulas.

### Liquid Flow

where

$$Q_L = C_v \sqrt{\frac{\Delta P}{G}}$$

QL=flow rate of liquid (gal./min.)

ΔP=differential pressure across the vale (psi)

G=specific gravity of liquid (for water,G=1)

### Gas Flow

where

$$Q_g = 61 C_v \sqrt{\frac{P_2 \Delta P}{g}} \quad |$$

Qg=flow rate of gas (CFH at STP)

P<sub>2</sub>=outlet pressure (psia)

g=specific gravity of gas (for air,g=1.0)

For non-critical flow

$$\left\{ \frac{\Delta P}{P_2} < 1.0 \right\}$$

# Trunnion Ball Valve



## Ball Valves

- Flanged Trunnion Ball Valves
- Flanged Floating Ball Valves
- Metal Seated

## Shut-Off Pig Valves

- Launchers
- Catchers
- Receivers

## Butterfly Valves

- Soft Seat
- Sizes 2" thru 24"
- Pressure Rating 200psi
- Wafer body
- Lugged body

## Actuators

- Rack & Pinion
- Max. Torque D.A. – 55,600 lbs. in.
- Max. Torque S.R. – 20,700 lbs. in.
- Scotch Yoke per application

Parts for all Products and Technical Engineering Support Available



## API-6A Wellheads

- Casing Heads
- Casing Hangers
- Tubing Heads
- Tubing Hangers
- Spools
- Components
  - Tees (Standard)
  - Crosses
  - Tree Caps
  - Goat Heads
  - Seal Subs
- Additional Components Available

## Actuated Safety Valves

- Hydraulic
- Piston
- Diaphragm
- Upper Assembly
- Automated Valve Assembly
- Electro/hydraulic

## Limited Product Warranty



Tiger Valve Company (TVC) manufactured products warrants for, (a) twelve (12) months from date of installation or (b) eighteen (18) months from date of sales, whichever period expires first, to be free from defects in workmanship and materials, not caused or resulting from improper usage or application, provided all equipment is maintained in accordance with TVC "Valve & Equipment Storage Procedure".

Any repair work performed by TVC is warranted for twelve (12) months after completion of such repairs and applies only to work performed. Should TVC receive notice from Buyer within these twelve (12) months of any alleged defect in or nonconformance of any repair, then Buyer shall return the part or product to TVC specified service location at TVC request.

In the event TVC shall determine that the product is defective as a result of factory workmanship based upon such examination of the product which TVC may deem appropriate, TVC shall thereupon, at its sole option, (a) cause the defective product to be repaired, (b) replace with a substantially identical

product, or (c) accept the return of a defective product and refund the purchasing price to the original purchaser. TVC shall bear all normal surface transportation costs to the original purchaser but shall in no event bear any installation, re-installation, engineering or other costs incurred in connection with repair or replacement.

TVC warranty liability shall be limited to repair, replacement or refund and shall not include claims for labor costs, expenses of Buyer resulting from defects, recovery under general tort law or strict liability or for damages resulting from delays, loss of use or other direct, indirect, incidental or consequential damages of any kind.

TVC will not be responsible for failures of products which have been in any way tampered with or altered by anyone other than an authorized representative of TVC utilizing the TVC Installation and Maintenance Procedure (IOM).

**THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE WHICH EXCEED THE FOREGOING WARRANTY.**

If you have questions regarding this warranty or if you need additional information concerning Tiger Valve Company products or services, please contact us at the address and number below.

15862 Diplomatic Plaza Dr.  
Houston, Tx. 77032  
281-227-9911 Phone • 281-227-9912 Fax  
[www.tigervalve.com](http://www.tigervalve.com)



## TRUNNION MOUNTED BALL VALVE



Trunnion-mounted ball valves for pipeline, process, power, oil & gas and other flow control applications where quality, design, safety, and environmental protection are paramount.

281.227.9911 • fax 281.227.9912  
15862 Diplomatic Plaza Drive • Houston, TX 77032  
[sales@tigervalve.com](mailto:sales@tigervalve.com) • [www.tigervalve.com](http://www.tigervalve.com)