

International Standard Valve, Inc.



ISV Series BT3EU, BT3E & BT3G

Trunnion Mounted Ball Valve *Forged Construction*

2" through 56"

ASME Class 150 - 2500

Bolted or Welded Body

Flanged & Weld Ends

API 6D

Fire Safe

NACE

**CE marked on
*international production.***



QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV

ISO 9001:2008



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Bulletin No. ISV-SB600.4b Issue 11/2013

ISV Series BT3EU, BT3E & BT3G 3 Piece Forged Construction Trunnion Mounted Ball Valves

All ISV bolted body and welded body *pipeline style* 3 PC designed trunnion mounted ball valves are designed to meet the demands of the oil & gas process, gathering, natural gas transmission, storage, distribution, LNG, petrochemical and related industries.

Whether produced in Stafford or internationally, all ISV trunnion mounted ball valves are designed and manufactured in strict accordance to industry standards and ISV Product Design Specifications.

ISV trunnion mounted ball valves are used in on-shore, off-shore, above & below ground applications.

Stafford, TX facility photos



Pressure testing



Component Inventory



Finished Valve Inventory



Finished Valve Inventory

Quality Systems and Quality Assurance



High reliability at globally competitive cost of ownership

ISV Series BT3EU, BT3E & BT3G production facilities' Quality Management Systems are maintained at all levels of production in accordance with ISO 9001 and API Q1.

Critical inspections are conducted at ISV in Stafford, Texas.

Each valve is uniquely serialized providing traceability of key production milestones.

Material test reports including chemical, mechanical characteristics of the materials and pressure test results are available with each valve per EN.10204 type 3.1.

ISV engineering, sales, product service, field service and warranty related services are conducted from Stafford for all ISV products.



ISV Series BT3EU, BT3E & BT3G 3 Piece Forged Construction Trunnion Mounted Ball Valves

ISV pipeline style ball valves are manufactured in strict accordance to API 6D, API Q1 and ISO 9001 quality standards with design criteria to API 6D, API 608, ASME B16.34 and applicable industry standards.

All ISV Series BT3EU, BT3E and BT3G ball valves are API 6D monogrammed.

Design Standards and Specifications of products in this bulletin:

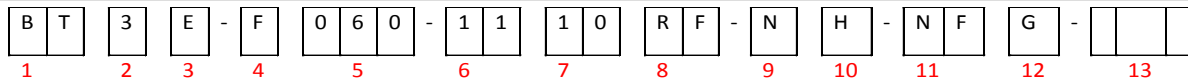
API 6D/ISO 14313 – Specification for pipeline valves
 API 607/ISO 10497 – Fire test for soft seated valves
 API 6FA – Specification for tire test for valves
 API Q1 – Specification for quality programs...
 API 608 – Metal ball Valves
 ASME B16.5 – Steel pipe flanges and fittings
 ASME B16.10 – Face to face & end to end dim.
 ASME B16.47 – Large diameter steel flanges: NPS 26—60

ASME B16.34 – Steel valves-flanged and butt weld end
 ASME B31.1 - Power piping
 ASME B31.3 – Process piping
 ASME B31.4 – Pipeline transportation systems...
 ASME B31.8 – Gas transmission and distribution piping syst.
 NACE MR-01-75 / ISO 15156
 ASME B16.25 – Buttwelding ends
 MSS SP-55 – Steel Pipe Flanges

Specifying ISV Three Piece Trunnion Mounted Ball Valves

Example ISV figure number : **BT3EU-F060-1110RF-NH-NFG** USA Production
BT3E-F060-1110RF-NH-NFG International Production

Describes an ASME class 600, 3 piece bolted body design, full port, trunnion supported ball valve, raised face flange ends, with ASTM A182 Gr.A105N body material, carbon steel + Electroless Nickel Plated ball & stem, Nylon seat inserts, HNBR seals, gear operated, meets NACE and is fire safe tested.



1 Valve Type		2 Service / Design style		3 Body Design		4 Bore		5 Pressure Rating (ASME)		6 Body Material		7 Trim Material	
Code	Type	Code	Design style	Code	Body style	Code	Port	Code	Class	Code	Material	Code	Material
BT	Ball Valve Trunnion	1	Adjustable Stem Packing	B	2 pc Split Bolted Body	R	Reduced	015	150	11	A105N (-20 Deg. F. Service)	10	C.S. + ENP
BF	Ball Valve Floating	3	O-Ring Stem Seal	E	3 pc Bolted Body	F	Full	030	300	21	A105N / LF2 (-20 Deg. F. Service)	20	Lt. C.S. + ENP (-50 Deg. F. Service)
		4	Metal Seated	G	3 pc Welded Body	S	Standard	040	400	22	LF2 (-50 Deg. F. Service)	30	Stainless Steel
		5	Weld Overlay Body	H	Top Entry			060	600	34	304SS	34	304SS / CF8
		7	Cryogenic Service	K	Tandem			090	900	36	316SS	36	316SS / CF8M
				L	Double Ball			150	1500	51	F51 / 318	51	F51 / 318
		M	Compact Design			250	2500	60	Inconel	60	Inconel 625		
		+ U	USA production:							91	CS + Inconel Seat Pocket	61	410SS
			Example BT3EU							92	CS + SS Seat Pocket	71	Monel
										95	CS + ENP Seat Pocket		

8 End Connections		9 Seat		10 Body Seals		11 Features		12 Operator		13 Modifier Code	
Code	Ends	Code	Material	Code	Material	Code	Description	Code	Description	Code	Description
RF	Flg-RF	N	Nylon	V	Viton	NF	NACE Compliant, Fire Safe	L	Locking Lever		
RJ	Flg-RJ	T	PTFE	H	HNBR			B	Bare Stem		
FF	Flg-FF	D	Devlon V	L	Low Temp Viton (-50 Deg. F.) O-Rings	NW	NACE Compliant, Non Fire Safe Tested	S	Spring Return Lever		
WW	WE X WE	H	HNBR	K	PCTFE			G	Locking Manual Gear		
WF	WE X RF	R	RPTFE	G	Graphite	WF	Without NACE, Fire Safe	H	Non Locking Lever		
WJ	WE X RTJ	C	TFM 4215	T	PTFE			C	Chain Wheel	XXX	Special Configurations such as exotic materials, specific seat or sealing compounds. Consult ISV representative for modifier code identification.
		K	PCTFE	M	TFM	WW	Without NACE, Non Fire Safe Tested	O	Oval Hand Wheel		
		P	PEEK	E	EPDM			A	Actuated		
		V	Viton	8	PEEK - Lip Seal						
		1	Tung. Carbide	9	PTFE - Lip Seal						
		2	Cr. Carbide								

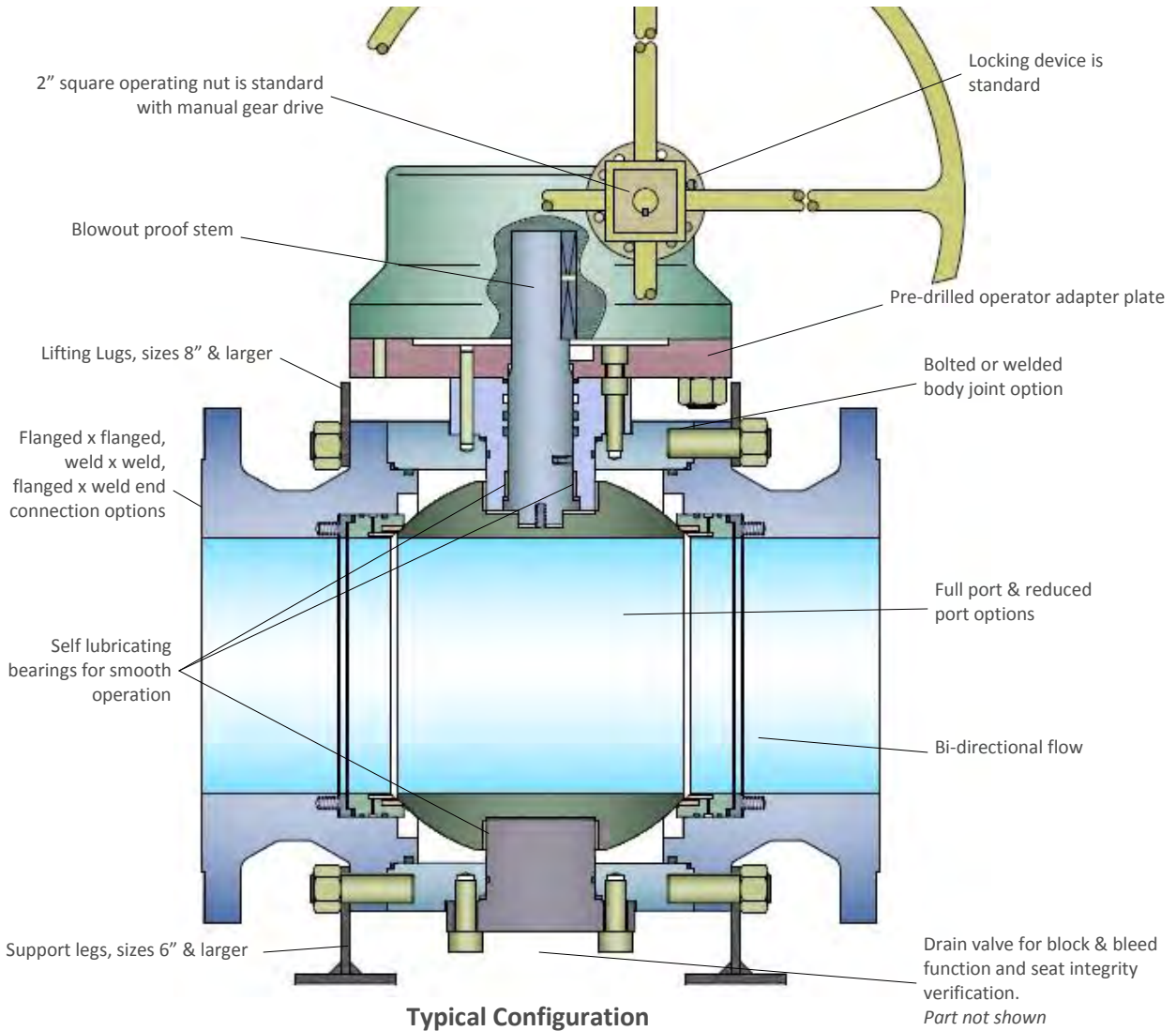
Applicable Design Standards	
Basic Design	API 6D, API 608
	ASME B16.34
Pressure Test	API 6D
End to End	ASME B16.10
	API 6D
Flange Ends	ASME B16.5, B16.47
Weld Ends	ASME B16.25



Product Certifications
API 6D
API 607
PED 97/23/EC—International Production

STANDARD FEATURES:

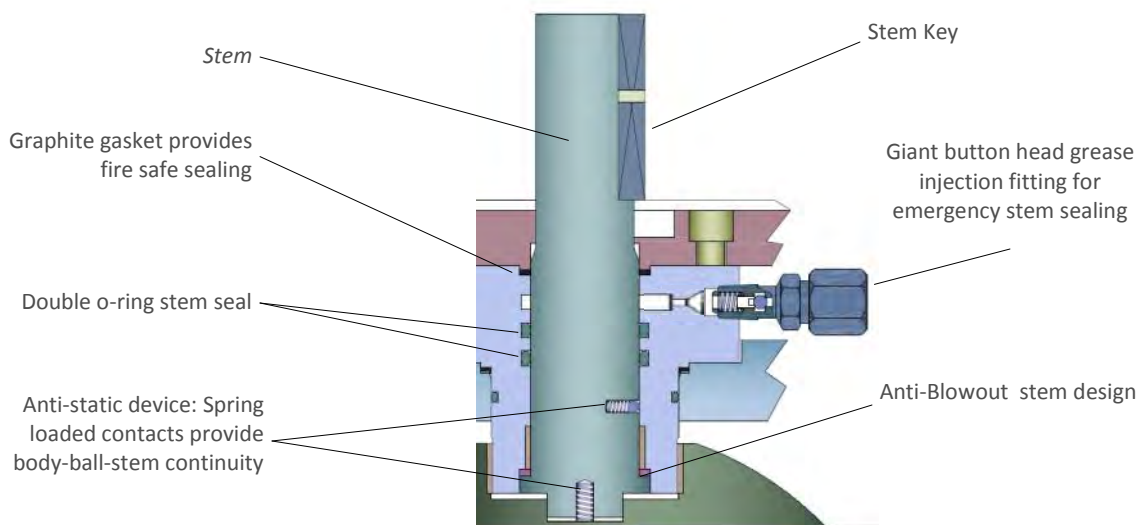
- Constructed of forged materials
- Three piece body design
- Trunnion supported ball design for lower torque
- Rugged polymeric seat inserts
- Double Block and Bleed capability
- Emergency sealant injection system
- Solid forged ball
- Anti-Static, Anti blow-out stem design
- Fire-tested to API 607
- Metal lip for fire-safe & emergency sealing
- Static secondary body graphite fire-safe seals
- NACE compliant materials



Production Range		Body size (inches)																			
Class	2	3	4	6	8	10	12	14	16	18	20	22	24	26	30	34	36	40	42	48	56
150	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
300	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
600	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
900	X	X	X	X	X	X	X	X	X	X	X	-	X	-	-	-	-	-	-	-	-
1500	X	X	X	X	X	X	X	X	X	X	X	-	X	-	-	-	-	-	-	-	-
2500	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DESIGN FEATURES - DETAIL

Stem Detail & Emergency Stem Sealant Injection System

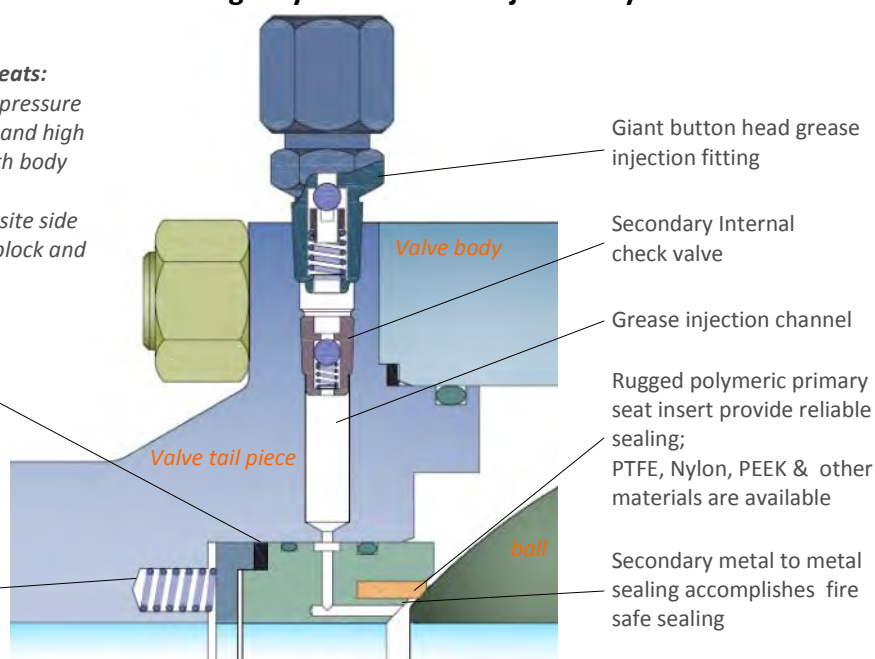


Seat Detail & Emergency Seat Sealant Injection System

Double Block & Bleed Seats:
 Independent piston action, pressure responsive seats insure low and high pressure sealing along with body cavity self relieve.
 Identical seats on the opposite side of the ball provides double block and bleed functionality.

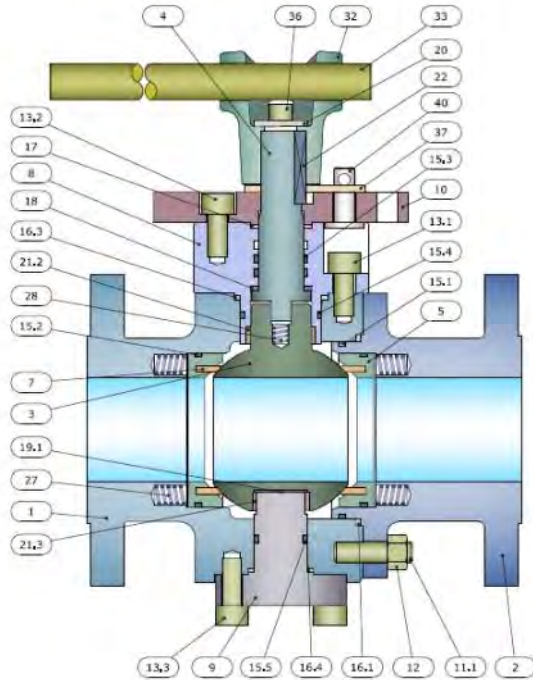
Graphite secondary seat assembly seal accomplishes fire safe seal

Coil spring loaded seats assembly for low pressure sealing

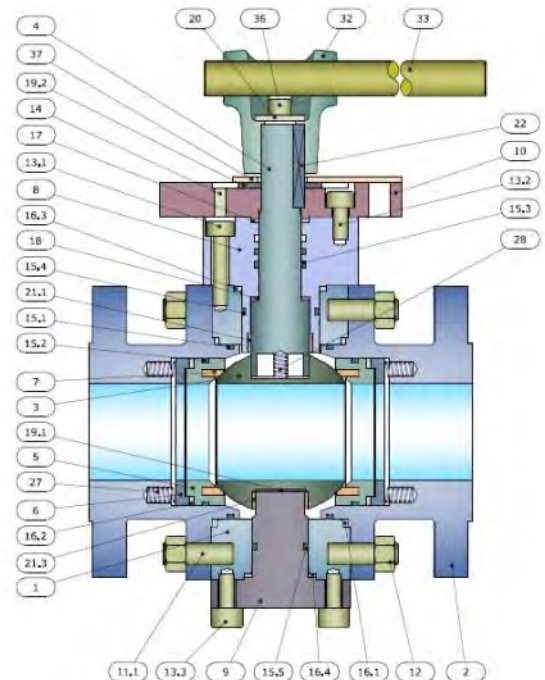


Typical Configurations - Series BT3EU & BT3E (Full Port, Bolted Body)

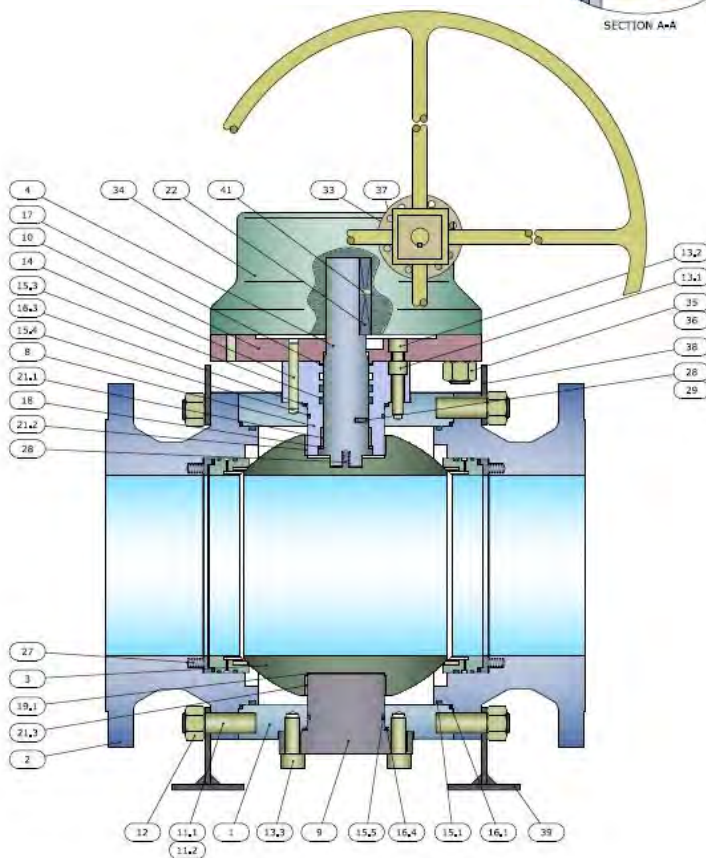
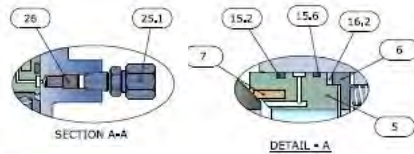
Features & configurations of Reduced Port valves and Series BT3G (Welded Body) are similar, as applicable.



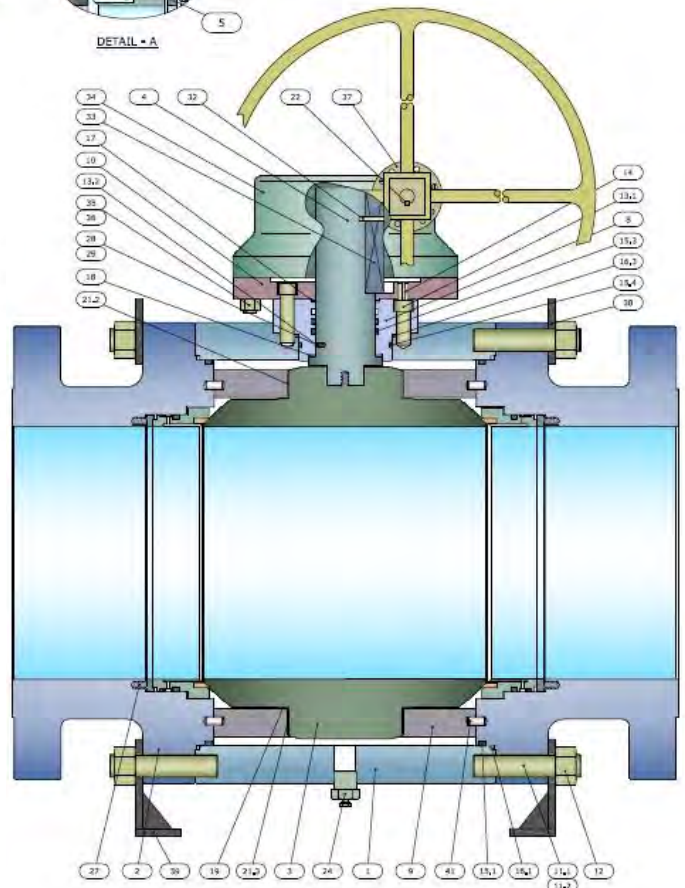
2" size class 150 & 300 (Typical)



4" and smaller sizes (Typical)



6" - 12 sizes (Typical)



14" & larger sizes (Typical)

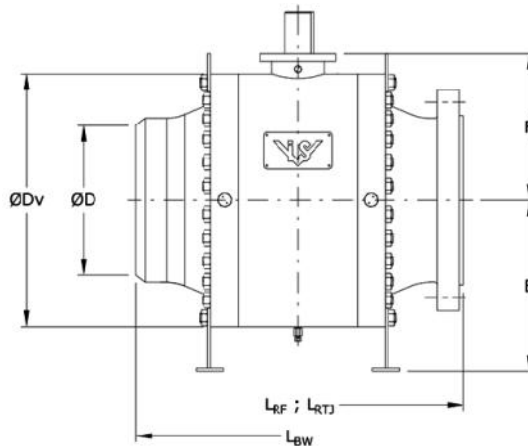
Standard Materials - Series BT3EU, BT3E & BT3G

Item No.	Part Description	Materials <i>(Other materials are available on request)</i>			
		<i>Oil & Gas Service</i>	<i>Low Temp (-50 F) Service</i>	<i>Corrosive Trim</i>	<i>S.S. Body & Trim</i>
1	Body	A105N	A350 LF2	A105N	F316SS
2	End Cap	A105N	A350 LF2	A105N	F316SS
3	Ball	A105N+ENP (3Mil)	A350 LF2+ENP (3Mil)	F316SS *	F316SS *
4	Stem	A105N+ENP (3Mil)	A350 LF2+ENP (3Mil)	F316SS *	F316SS *
5	Seat	A105N+ENP (3Mil)	A350 LF2+ENP (3Mil)	F316SS *	F316SS *
6	Seat Pusher	A105N+ENP (3Mil)	A350 LF2+ENP (3Mil)	F316SS *	F316SS *
7	Seat Insert	RPTFE: 2" - 8" class 150 and class 300 body sizes			
		Nylon or Devlon: all other sizes			
8	Gland	A105N+ENP (3Mil) *	A350 LF2+ENP (3Mil) *	A105N+ENP (3Mil) *	F316SS *
9	Trunnion	A105N+ENP (3Mil) *	A350 LF2+ENP (3Mil) *	A105N+ENP (3Mil) *	F316SS *
10	Top Plate	C.S.	A350 LF2	C.S.	S.S.
11.1	Stud: End cap-Body	A193 B7M	A320 L7M	A193 B7M	A193 B8
11.2	Stud: Lifting Eye/Support Leg	A193 B7M	A320 L7M	A193 B7M	A193 B8
12	Nut: End Cap-Body	A194 2HM	A194 7M	A194 2HM	A194 8
13.1	Cap Screw: Top Plate-Body	A193 B7M	A320 L7M	A193 B7M	A193 B8
13.2	Cap Screw: Trunnion-Body	A193 B7M	A320 L7M	A193 B7M	A193 B8
13.3	Cap Screw: Gland-Body	A193 B7M	A320 L7M	A193 B7M	A193 B8
14	Alignment Pin	C.S.	C.S.	C.S.	C.S.
15.1	O-Ring: End Cap	HNBR	Low Temp HNBR	HNBR	HNBR
15.2	O-Ring: Seat	HNBR	Low Temp HNBR	HNBR	HNBR
15.3	O-Ring: Stem	HNBR	Low Temp HNBR	HNBR	HNBR
15.4	O-Ring: Gland	HNBR	Low Temp HNBR	HNBR	HNBR
15.5	O-Ring: Trunnion	HNBR	Low Temp HNBR	HNBR	HNBR
15.6	O-Ring: Seat (secondary)	HNBR	Low Temp HNBR	HNBR	HNBR
16.1	Gasket: End Cap	S.S.+ Graphite	S.S.+ Graphite	S.S.+ Graphite	S.S.+ Graphite
16.2	Gasket: Seat	Graphite	Graphite	Graphite	Graphite
16.3	Gasket: Gland	Graphite	Graphite	Graphite	Graphite
16.4	Gasket: Trunnion	Graphite	Graphite	Graphite	Graphite
17	Stem Packing	Graphite	Graphite	Graphite	Graphite
18	Stem Thrust Washer **	PTFE / PEEK	PTFE / PEEK	PTFE / PEEK	PTFE / PEEK
19	Spacer: Ball	PTFE	PTFE	PTFE	PTFE
21.1	Bearing: Stem	C.S.+PTFE	C.S.+PTFE	C.S.+PTFE	S.S.+PTFE
21.2	Bearing: Ball-Upper	C.S.+PTFE	C.S.+PTFE	C.S.+PTFE	S.S.+PTFE
21.3	Bearing: Ball-Lower	C.S.+PTFE	C.S.+PTFE	C.S.+PTFE	S.S.+PTFE
22	Key	C.S.	C.S.	C.S.	C.S.
23	Vent Plug	C.S. + zinc	Low temp. steel	C.S. + zinc	316SS
24	Drain Valve	C.S. + zinc	Low temp. steel	C.S. + zinc	316SS
25.1	Seat Injection Fitting	C.S. + zinc	Low temp. steel	C.S. + zinc	316SS
25.2	Stem Injection Fitting	C.S. + zinc	Low temp. steel	C.S. + zinc	316SS
26	Internal Check Valve	S.S.	S.S.	S.S.	S.S.
27	Seat Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
28	Anti-Static Spring	S.S.	S.S.	S.S.	S.S.
29	Anti-Static Ball	S.S.	S.S.	S.S.	S.S.
33	Key	C.S.	C.S.	C.S.	C.S.
34	Gear Box	D.I or C.S.	D.I or C.S.	D.I or C.S.	D.I or C.S.
35	Gear Stud	C.S.	C.S.	C.S.	C.S.
36	Gear Nut	C.S.	C.S.	C.S.	C.S.
37	Locking device	C.S.	C.S.	C.S.	C.S.
38	Lifting Eye	C.S.	C.S.	C.S.	C.S. + zinc
39	Support Leg	C.S.	C.S.	C.S.	C.S. + zinc
41	Pin	C.S.	C.S.	C.S.	C.S.

* High strength materials may be provided to satisfy design requirements. ** DU bearings may be used on higher pressures.

Note: For product quality improvements - designs and materials are subject to change without notice.

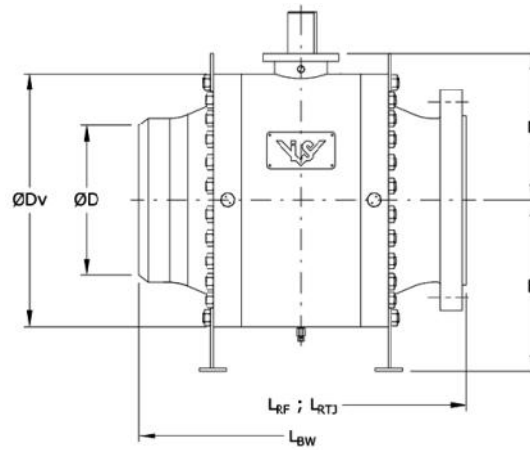
Dimensional Data



Class 150		inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50.00	2.00	7.00	7.50	8.50	6.00	3.90	4.10	62.00	48.00	490
3" x 2"	80 x 50	3.0 x 2.0	8.00	8.50	11.13	6.00	3.90	4.10	68.00	57.00	200
3"	80.00	3.00	8.00	8.50	11.13	7.40	4.90	6.10	117.00	106.00	1320
4" x 3"	100 x 80	4.0 x 3.0	9.00	9.50	12.00	7.40	4.90	6.10	139.00	115.00	550
4"	100.00	4.00	9.00	9.50	12.00	9.00	6.30	7.90	198.00	174.00	2450
6" x 4"	150 x 100	6.0 x 4.0	15.50	16.00	18.00	9.00	6.30	7.90	225.00	170.00	785
6"	150.00	6.00	15.50	16.00	18.00	12.00	7.20	9.80	359.00	304.00	5200
8" x 6"	200 x 150	8.0 x 6.0	18.00	18.50	20.50	12.00	7.30	9.80	414.00	359.00	2100
8"	200.00	8.00	18.00	18.50	20.50	15.40	8.70	10.90	551.00	496.00	10300
10" x 8"	250 x 200	10.0 x 8.0	21.00	21.50	22.00	15.40	8.70	10.90	639.00	564.00	4200
10"	250.00	10.00	21.00	21.50	22.00	18.40	11.00	12.70	849.00	774.00	17150
12" x 10"	300 x 250	12.0 x 10.0	24.00	24.50	25.00	18.40	11.00	12.70	1025.00	915.00	7200
14" x 10"	350 x 250	13.3 x 10.0	27.00	27.50	30.00	18.40	11.00	12.70	1153.00	1010.00	*
12"	300.00	12.00	24.00	24.50	25.00	21.30	11.90	13.40	1239.00	1129.00	25800
14" x 12"	350 x 300	13.3 x 12.0	27.00	27.50	30.00	21.30	11.90	13.40	1371.00	1228.00	13300
16" x 12"	400 x 300	15.2 x 12.0	30.00	30.50	33.00	21.30	11.90	13.40	1559.00	1184.00	*
14"	350.00	13.30	27.00	27.50	30.00	23.90	13.00	14.80	1687.00	1544.00	31200
16" x 14"	400 x 350	15.2 x 13.3	30.00	30.50	33.00	23.90	13.00	14.80	1830.00	1455.00	14500
16"	400.00	15.20	30.00	30.50	33.00	26.60	14.00	16.10	2271.00	1896.00	42400
18" x 16"	450 x 400	17.2 x 15.2	34.00	34.50	36.00	26.60	14.00	16.10	2381.00	1896.00	20000
20" x 16"	500 x 400	19.3 x 15.2	36.00	36.50	39.00	26.60	14.00	16.10	2579.00	2416.00	*
18"	450.00	17.20	34.00	34.50	36.00	29.60	15.40	17.30	2685.00	2380.00	56150
20" x 18"	500 x 450	19.3 x 17.2	36.00	36.50	39.00	29.60	15.40	17.30	2862.00	2699.00	27600
20"	500.00	19.30	36.00	36.50	39.00	33.30	16.90	19.50	3964.00	3801.00	73000
24" x 20"	600 x 500	23.3 x 19.3	42.00	42.50	45.00	33.30	16.90	19.50	4515.00	4272.00	27500
22"	550.00	21.30	39.00	-	43.00	36.60	18.70	20.70	5218.00	4777.00	*
24"	600.00	23.30	42.00	42.50	45.00	39.80	20.50	23.00	6828.00	6585.00	110050
30" x 24"	750 x 600	29.0 x 23.3	51.00	-	55.00	39.80	20.50	23.00	7379.00	6702.00	48960
26"	650.00	25.00	45.00	-	49.00	42.10	22.00	24.80	8128.00	7621.00	114450
28"	700.00	27.00	49.00	-	53.00	44.90	25.60	25.40	9910.00	*	134100
30"	750.00	29.00	51.00	-	55.00	48.00	27.60	27.20	11530.00	10853.00	158500
36" x 30"	900 x 750	34.5 x 29.0	60.00	-	68.00	48.00	27.60	27.20	13911.00	12753.00	89830
32"	800.00	30.70	54.00	-	60.00	51.60	29.30	29.10	15036.00	*	179000
34"	850.00	32.80	58.00	-	64.00	54.30	30.50	29.90	17218.00	16226.00	203600
36"	900.00	34.50	60.00	-	68.00	56.70	31.70	31.90	19423.00	18265.00	229100
40"	1000.00	38.50	69.00	-	77.00	63.40	35.40	35.20	27756.00	26406.00	282300
42"	1050.00	40.20	73.00	-	82.00	66.30	36.80	37.40	31548.00	29564.00	312350
48"	1200.00	46.00	84.00	-	94.00	76.00	42.10	43.10	48347.00	46143.00	412500
56"	1400.00	54.50	98.00	-	98.00	89.50	49.20	51.20	75222.00	59976.69	605150

* Consult an ISV representative for specific information

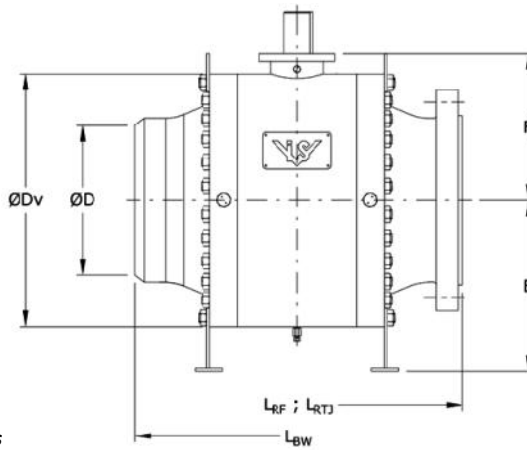
Dimensional Data



Class 300		inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	2.00	8.50	9.13	8.50	6.00	3.90	4.10	64	51	450
3" x 2"	80 x 50	3.0 x 2.0	11.13	11.75	11.13	6.00	3.90	4.10	75	44	195
3"	80	3.00	11.13	11.75	11.13	7.40	4.90	6.10	126	95	1130
4" x 3"	100 x 80	4.0 x 3.0	12.00	12.63	12.00	7.40	4.90	6.10	143	101	540
4"	100	4.00	12.00	12.63	12.00	9.00	6.30	7.90	209	167	2160
6" x 4"	150 x 100	6.0 x 4.0	15.88	16.50	18.00	9.00	6.30	7.90	260	188	770
6"	150	6.00	15.88	16.50	18.00	12.00	8.00	9.80	408	336	5180
8" x 6"	200 x 150	8.0 x 6.0	19.75	20.38	20.50	12.00	8.00	9.80	489	383	2100
8"	200	8.00	19.75	20.38	20.50	15.40	9.10	10.90	633	527	9400
10" x 8"	250 x 200	10.0 x 8.0	22.38	23.00	22.00	15.40	9.10	10.90	655	496	4100
10"	250	10.00	22.38	23.00	22.00	18.80	11.70	13.10	1118	959	16400
12" x 10"	300 x 250	12.0 x 10.0	25.50	26.13	25.00	18.80	11.70	13.10	1316	1096	7100
14" x 10"	350 x 250	13.3 x 10.0	30.00	30.63	30.00	18.80	11.70	13.10	1429	1142	*
12"	300	12.00	25.50	26.13	25.00	21.30	13.10	14.20	1631	1411	25000
14" x 12"	350 x 300	13.3 x 12.0	30.00	30.63	30.00	21.30	13.10	14.20	1808	1521	13250
16" x 12"	400 x 300	15.2 x 12.0	33.00	33.63	33.00	21.30	13.10	14.20	2138	1587	*
14"	350	13.30	30.00	30.63	30.00	24.80	13.80	15.60	2288	2001	29450
16" x 14"	400 x 350	15.2 x 13.3	33.00	33.63	33.00	24.80	13.80	15.60	2491	1940	14450
16"	400	15.20	33.00	33.63	33.00	27.50	15.70	17.00	3148	2597	41750
18" x 16"	450 x 400	17.2 x 15.2	36.00	36.63	36.00	27.50	15.70	17.00	3523	2817	19800
20" x 16"	500 x 400	19.3 x 15.2	39.00	39.75	39.00	27.50	15.70	17.00	3677	3302	*
18"	450	17.20	36.00	36.63	36.00	30.30	16.10	18.10	3532	2826	54260
20" x 18"	500 x 450	19.3 x 17.2	39.00	39.75	39.00	30.30	16.10	18.10	3962	3587	27550
20"	500	19.30	39.00	39.75	39.00	33.70	18.50	19.90	4866	4491	70850
24" x 20"	600 x 500	23.3 x 19.3	45.00	45.88	45.00	33.70	18.50	19.90	5880	5439	27450
22"	550	21.30	43.00	43.88	43.00	37.00	19.10	20.90	6166	5593	*
24"	600	23.30	45.00	45.88	45.00	40.40	21.70	23.20	7650	7209	106950
30" x 24"	750 x 600	29.0 x 23.3	55.00	56.00	55.00	40.40	21.70	23.20	9899	8587	48400
26"	650	25.00	49.00	50.00	49.00	42.70	23.00	25.00	10296	9590	109700
28"	700	27.00	53.00	54.00	53.00	45.30	26.40	25.40	12743	*	129000
30"	750	29.00	55.00	56.00	55.00	48.80	28.70	27.60	14550	13238	152500
36" x 30"	900 x 750	34.5 x 29.0	68.00	69.13	68.00	48.80	28.70	27.60	18056	16014	86880
32"	800	30.70	60.00	61.13	60.00	52.00	30.30	29.50	17505	*	170100
34"	850	32.80	64.00	65.13	64.00	54.80	31.50	30.10	19952	18563	193800
36"	900	34.50	68.00	69.13	68.00	57.10	32.50	31.90	22267	20225	215300
40"	1000	38.50	77.00	-	77.00	63.80	36.20	35.60	30402	29013	282300
42"	1050	40.20	82.00	-	82.00	66.50	37.60	37.80	35538	33554	312350
48"	1200	46.00	85.38	-	85.38	76.50	43.50	43.30	53065	50596	412500
56"	1400	54.50	108.00	-	108.00	89.80	50.20	51.20	84150	83645	605150

* Consult an ISV representative for specific information

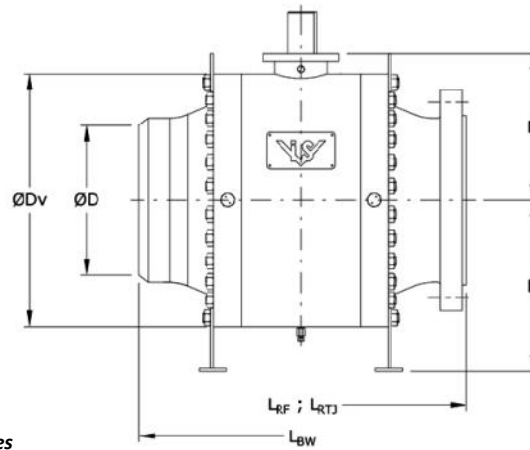
Dimensional Data



Class 600		inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	2.00	11.50	11.63	11.50	6.30	3.90	4.10	73	60	400
3" x 2"	80 x 50	3.0 x 2.0	14.00	14.13	14.00	6.30	3.90	4.10	88	33	190
3"	80	3.00	14.00	14.13	14.00	7.50	5.10	6.50	141	86	1030
4" x 3"	100 x 80	4.0 x 3.0	17.00	17.13	17.00	7.50	5.10	6.50	176	113	540
4"	100	4.00	17.00	17.13	17.00	9.20	6.40	8.30	251	188	1850
6" x 4"	150 x 100	6.0 x 4.0	22.00	22.13	22.00	9.20	6.40	8.30	337	213	740
6"	150	6.00	22.00	22.13	22.00	12.00	8.00	10.00	562	438	4600
8" x 6"	200 x 150	8.0 x 6.0	26.00	26.13	26.00	12.00	8.00	10.00	639	456	2100
8"	200	8.00	26.00	26.13	26.00	15.90	10.10	11.40	1074	891	9000
10" x 8"	250 x 200	10.0 x 8.0	31.00	31.13	31.00	15.90	10.10	11.40	1206	897	4000
10"	250	10.00	31.00	31.13	31.00	19.30	12.20	13.10	1676	1367	14700
12" x 10"	300 x 250	12.0 x 10.0	33.00	33.13	33.00	19.30	12.20	13.10	1786	1431	7100
14" x 10"	350 x 250	13.3 x 10.0	35.00	35.13	35.00	19.30	12.20	13.10	2017	1671	*
12"	300	12.00	33.00	33.13	33.00	22.80	13.80	15.00	2359	2004	22500
14" x 12"	350 x 300	13.3 x 12.0	35.00	35.13	35.00	22.80	13.80	15.00	2513	2167	13200
16" x 12"	400 x 300	15.2 x 12.0	39.00	39.13	39.00	22.80	13.80	15.00	2976	2358	*
14"	350	13.30	35.00	35.13	35.00	24.80	14.20	15.60	2392	2046	27800
16" x 14"	400 x 350	15.2 x 13.3	39.00	39.13	39.00	24.80	14.20	15.60	2884	2266	14320
16"	400	15.20	39.00	39.13	39.00	27.60	16.30	17.00	3366	2748	37350
18" x 16"	450 x 400	17.2 x 15.2	43.00	43.13	43.00	27.60	16.30	17.00	3708	3068	19750
20" x 16"	500 x 400	19.3 x 15.2	47.00	47.25	47.00	27.60	16.30	17.00	4601	3688	*
18"	450	17.20	43.00	43.13	43.00	30.50	16.90	18.50	4623	3983	49930
20" x 18"	500 x 450	19.3 x 17.2	47.00	47.25	47.00	30.50	16.90	18.50	5240	4327	27500
20"	500	19.30	47.00	47.25	47.00	34.00	19.30	19.90	5820	4907	64250
24" x 20"	600 x 500	23.3 x 19.3	55.00	55.38	55.00	34.00	19.30	19.90	7165	5970	27400
22"	550	21.30	51.00	51.38	51.00	37.40	20.10	21.50	8356	7276	*
24"	600	23.30	55.00	55.38	55.00	40.60	22.40	23.40	10450	9255	96200
30" x 24"	750 x 600	29.0 x 23.3	65.00	65.50	65.00	40.60	22.40	23.40	12721	11326	47060
26"	650	25.00	57.00	57.50	57.00	43.00	24.40	25.00	12456	10935	101700
28"	700	27.00	61.00	61.50	61.00	46.00	27.20	26.20	14903	*	120200
30"	750	29.00	65.00	65.50	65.00	49.40	29.50	28.00	18475	17080	140300
36" x 30"	900 x 750	34.5 x 29.0	82.00	82.63	82.00	49.40	29.50	28.00	22884	20990	83500
32"	800	30.70	70.00	70.63	70.00	52.20	30.70	29.70	21473	*	157250
34"	850	32.80	76.00	76.63	76.00	55.30	32.10	30.70	25000	22134	178100
36"	900	34.50	82.00	82.63	82.00	57.70	33.10	32.10	29321	27427	195900
40"	1000	38.50	92.00	92.00	92.00	64.60	37.00	36.00	40433	37909	271550
42"	1050	40.20	96.00	96.00	96.00	67.70	38.60	38.20	47091	43244	297100
48"	1200	46.00	100.00	100.00	100.00	77.60	44.10	43.50	68784	63956	393150
56"	1400	54.50	116.13	116.13	116.13	90.70	50.80	51.20	104697	*	587750

* Consult an ISV representative for specific information

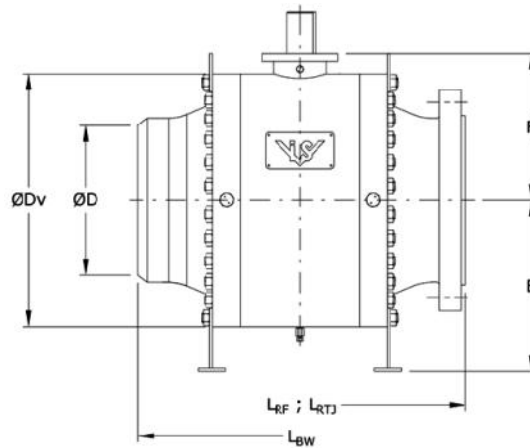
Dimensional Data



Class 900		inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	2.00	14.50	14.63	14.50	6.30	4.10	4.10	110	59	330
3" x 2"	80 x 50	3.0 x 2.0	15.00	15.13	15.00	6.30	4.10	4.10	117	86	185
3"	80	3.00	15.00	15.13	15.00	7.50	5.10	6.50	168	137	920
4" x 3"	100 x 80	4.0 x 3.0	18.00	18.13	18.00	7.50	5.10	6.50	214	177	530
4"	100	4.00	18.00	18.13	18.00	9.30	6.60	8.30	331	294	1800
6" x 4"	150 x 100	6.0 x 4.0	24.00	24.13	24.00	9.30	6.60	8.30	463	339	735
6"	150	6.00	24.00	24.13	24.00	12.60	8.30	10.20	809	685	4380
8" x 6"	200 x 150	8.0 x 6.0	29.00	29.13	29.00	12.60	8.30	10.20	985	776	2000
8"	200	8.00	29.00	29.13	29.00	16.50	10.50	11.60	1323	1114	8500
10" x 8"	250 x 200	10.0 x 8.0	33.00	33.13	33.00	16.50	10.50	11.60	1543	1191	4000
10"	250	10.00	33.00	33.13	33.00	20.30	13.00	13.60	2264	1912	14500
12" x 10"	300 x 250	12.0 x 10.0	38.00	38.13	38.00	20.30	13.00	13.60	2531	2046	7000
14" x 10"	350 x 250	12.8 x 10.0	40.50	40.88	40.50	20.30	13.00	13.60	2723	2127	*
12"	300	12.00	38.00	38.13	38.00	23.80	15.00	15.40	3435	2950	21400
14" x 12"	350 x 300	12.8 x 12.0	40.50	40.88	40.50	23.80	15.00	15.40	3622	3026	13100
16" x 12"	400 x 300	14.8 x 12.0	44.50	44.88	44.50	23.80	15.00	15.40	3832	2818	*
14"	350	12.80	40.50	40.88	40.50	25.20	14.60	15.70	3256	2660	26260
16" x 14"	400 x 350	14.8 x 12.8	44.50	44.88	44.50	25.20	14.60	15.70	3785	2771	14170
16"	400	14.80	44.50	44.88	44.50	28.10	17.10	17.30	4755	3741	35960
18" x 16"	450 x 400	16.7 x 14.8	48.00	48.50	48.00	28.10	17.10	17.30	5373	4359	19200
20" x 16"	500 x 400	18.6 x 14.8	52.00	52.50	52.00	28.10	17.10	17.30	6365	4998	*
18"	450	16.70	48.00	48.50	48.00	31.50	19.70	19.00	6305	5291	47700
20" x 18"	500 x 450	18.6 x 16.7	52.00	52.50	52.00	31.50	19.70	19.00	7187	5820	27000
20"	500	18.60	52.00	52.50	52.00	35.40	19.70	20.90	9303	7936	61250
24" x 20"	600 x 500	22.5 x 18.6	61.00	61.75	61.00	35.40	19.70	20.90	11905	9877	26300
22"	550	-	-	-	-	-	-	-	-	-	-
24"	600	22.50	61.00	61.75	61.00	41.70	24.80	24.20	15102	13074	92100
30" x 24"	750 x 600	28.1 x 22.5	74.00	74.88	74.00	41.70	24.80	24.20	19290	15740	43600
26"	650	24.40	65.00	65.88	65.00	44.10	25.60	25.60	17725	*	93240
28"	700	26.30	69.00	69.88	69.00	48.40	28.00	26.40	21980	*	112200
30"	750	28.10	74.00	74.88	74.00	51.20	30.70	28.50	26918	23368	131500
36" x 30"	900 x 750	33.7 x 28.1	90.00	91.13	90.00	51.20	30.70	28.50	33995	28240	77110
32"	800	30.00	80.00	80.88	80.00	53.50	31.90	30.90	26169	*	151250
34"	850	31.90	85.00	86.13	85.00	57.90	33.50	31.70	37986	*	172950
36"	900	33.70	90.00	91.13	90.00	60.20	35.40	33.30	43916	38161	148650

* Consult an ISV representative for specific information

Dimensional Data

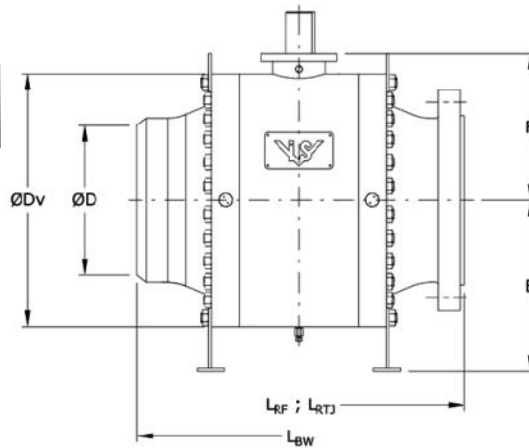


Class 1500		inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	2.00	14.50	14.63	14.50	6.30	4.10	4.10	117	14	330
3" x 2"	80 x 50	3.0 x 2.0	18.50	18.63	18.50	6.30	4.10	4.10	146	86	180
3"	80	3.00	18.50	18.63	18.50	7.50	5.10	6.50	216	156	820
4" x 3"	100 x 80	4.0 x 3.0	21.50	21.63	21.50	7.50	5.10	6.50	278	234	520
4"	100	4.00	21.50	21.63	21.50	9.60	6.60	8.50	441	397	1700
6" x 4"	150 x 100	5.7 x 4.0	27.75	28.00	27.80	9.60	6.60	8.50	639	484	730
6"	150	5.70	27.75	28.00	27.80	13.60	9.10	10.20	1069	914	4000
8" x 6"	200 x 150	7.6 x 5.7	32.75	33.13	32.80	13.60	9.10	10.20	1268	1004	1900
8"	200	7.60	32.75	33.13	32.80	17.70	11.20	11.80	1823	1559	7850
10" x 8"	250 x 200	9.5 x 7.6	39.00	39.38	39.00	17.70	11.20	11.80	2275	1846	3900
10"	250	9.50	39.00	39.38	39.00	21.90	13.80	14.40	3322	2893	12900
12" x 10"	300 x 250	11.4 x 9.5	44.50	45.13	44.50	21.90	13.80	14.40	3896	3345	6900
14" x 10"	350 x 250	12.5 x 9.5	49.50	50.25	49.50	21.90	13.80	14.40	4744	4049	*
12"	300	11.40	44.50	45.13	44.50	28.00	16.70	16.50	5009	4458	18000
14" x 12"	350 x 300	12.5 x 11.4	49.50	50.25	49.50	28.00	16.70	16.50	5593	4898	12600
16" x 12"	400 x 300	14.3 x 11.4	54.50	55.38	54.50	28.00	16.70	16.50	6188	5306	*
14"	350	12.50	49.50	50.25	49.50	30.30	16.90	17.30	6349	5654	23780
16" x 14"	400 x 350	14.3 x 12.5	54.50	55.38	54.50	30.30	16.90	17.30	7231	6349	13400
16"	400	14.30	54.50	55.38	54.50	33.50	19.70	18.90	9083	8201	32550
18" x 16"	450 x 400	16.0 x 14.3	60.50	61.38	60.50	33.50	19.70	18.90	10979	9767	18700
20" x 16"	500 x 400	18.0 x 14.3	65.50	66.38	65.50	33.50	19.70	18.90	11354	9722	*
18"	450	16.00	60.50	61.38	60.50	38.60	23.60	21.70	13801	12589	42500
20" x 18"	500 x 450	18.0 x 16.0	65.50	66.38	65.50	38.60	23.60	21.70	16623	14991	21100
20"	500	18.00	65.50	66.38	65.50	40.20	25.60	24.40	20106	18474	54800
24" x 20"	600 x 500	21.0 x 18.0	80.38	81.50	80.38	40.20	25.60	24.40	24141	21672	25100
22"	550	-	-	-	-	-	-	-	-	-	-
24"	600	21.00	80.38	81.50	80.38	50.80	28.30	27.60	31570	29101	82350

* Consult an ISV representative for specific information

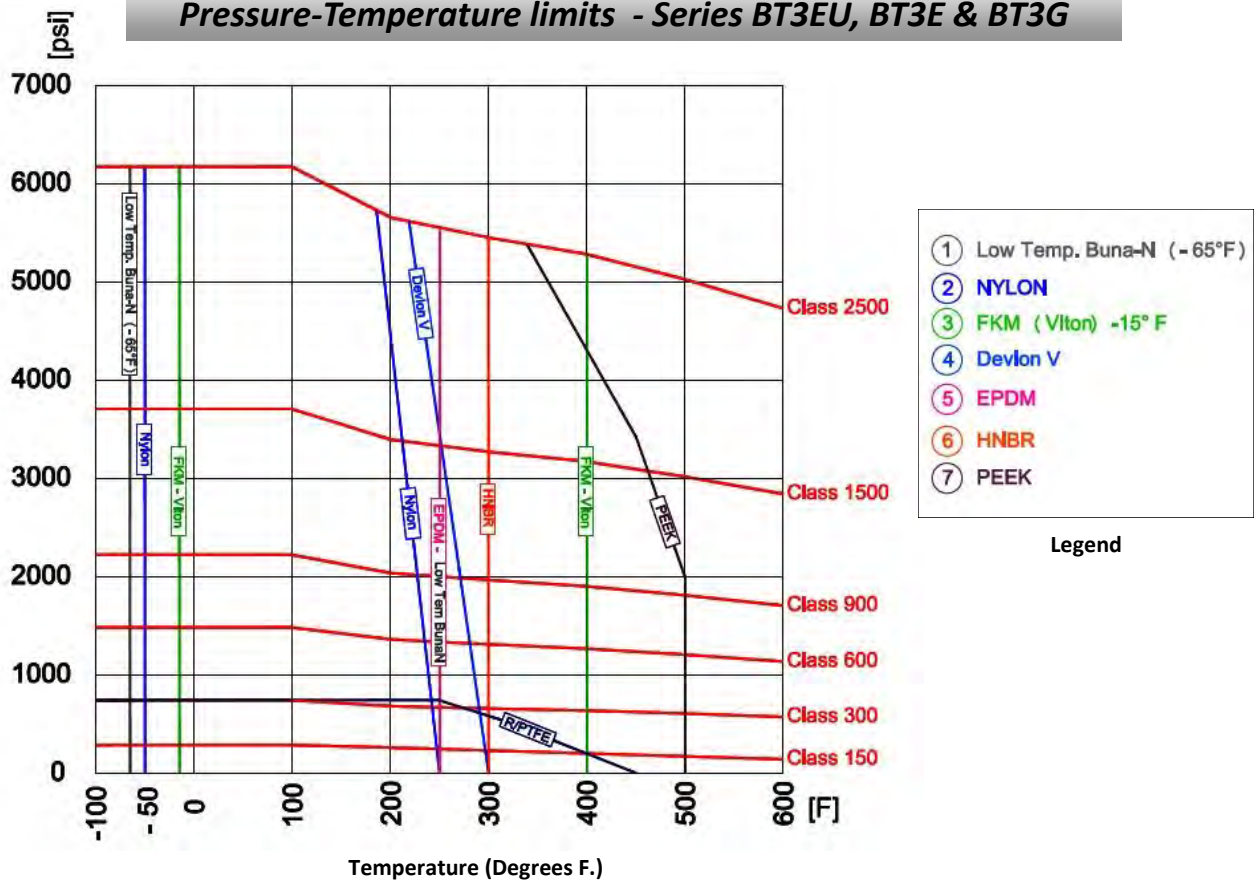


Dimensional Data



Class 2500						Weight (lbs)					
inches											
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	1.80	17.75	17.88	17.75	6.70	4.90	4.70	198	137	290
3" x 2"	80 x 50	2.5 x 1.8	22.75	23.00	22.75	6.70	4.90	4.70	348	216	160
3"	80	2.50	22.75	23.00	22.75	9.40	7.90	6.90	441	309	700
4" x 3"	100 x 80	3.6 x 2.5	26.50	26.88	26.50	9.40	7.90	6.90	595	395	420
4"	100	3.60	26.50	26.88	26.50	13.00	9.10	8.90	849	649	1200
6" x 4"	150 x 100	5.2 x 3.6	36.00	36.50	36.00	13.00	9.10	8.90	1140	632	580
6"	150	5.20	36.00	36.50	36.00	17.70	9.80	10.20	1715	1207	2550
8" x 6"	200 x 150	7.1 x 5.2	40.25	40.88	40.25	17.70	9.80	10.20	2421	1704	1600
8"	200	7.10	40.25	40.88	40.25	24.60	13.40	15.00	2981	2264	5350
10" x 8"	250 x 200	8.9 x 7.1	50.00	50.88	50.00	24.60	13.40	15.00	3675	2327	3200
10"	250	8.90	50.00	50.88	50.00	29.50	16.70	17.70	4711	3363	8500
12" x 10"	300 x 250	10.5 x 8.9	56.00	56.88	56.00	29.50	16.70	17.70	5659	3766	5400
12"	300	10.50	56.00	56.88	56.00	34.60	18.90	20.30	7202	5309	13000

Pressure-Temperature limits - Series BT3EU, BT3E & BT3G



ISV Series BT3EU, BT3E & BT3G - Actuation Data: Valve torques

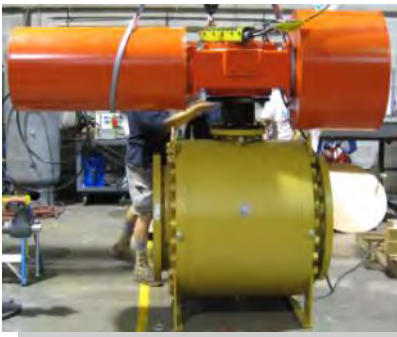
NPS	CLASS 150		CLASS 300		CLASS 600		CLASS 900		CLASS 1500		CLASS 2500	
	ΔP	285 psi	ΔP	740 psi	ΔP	1480 psi	ΔP	2220 psi	ΔP	3705 psi	ΔP	6170 psi
2	700+0.44*ΔP	825	700+0.44*ΔP	1026	700+0.41*ΔP	1307	700+0.40*ΔP	1588	700+0.40*ΔP	2182	700+0.73*ΔP	5204
3	1505+1.87*ΔP	2038	1505+1.87*ΔP	2889	1505+1.74*ΔP	4080	1505+1.74*ΔP	5368	1505+1.74*ΔP	7952	1505+2.02*ΔP	13968
4	2656+2.20*ΔP	3283	2656+2.20*ΔP	4284	2656+2.22*ΔP	5942	2656+2.24*ΔP	7629	2656+2.24*ΔP	10955	2656+5.25*ΔP	35049
6	3541+7.29*ΔP	5619	3541+7.29*ΔP	8936	3541+7.26*ΔP	14286	3541+7.25*ΔP	19636	3541+7.25*ΔP	30402	3541+7.25*ΔP	48273
8	5532+11.24*ΔP	8735	5532+11.24*ΔP	13850	5532+11.23*ΔP	22152	5532+11.23*ΔP	30463	5532+11.23*ΔP	47139	5532+16*ΔP	104252
10	7745+13.98*ΔP	11729	7745+13.98*ΔP	18090	7745+14.0*ΔP	28465	7745+14.0*ΔP	38825	7745+14.0*ΔP	59615	7745+17.68*ΔP	116831
12	10046+16.16*ΔP	14652	10046+16.16*ΔP	22004	10046+16.49*ΔP	34451	10046+24.88*ΔP	65280	10046+24.90*ΔP	102301	10046+23.55*ΔP	155350
14	17702+26.48*ΔP	25249	17702+26.48*ΔP	37297	17702+27.02*ΔP	57692	17702+27.19*ΔP	78064	17702+27.35*ΔP	119034		
16	23012+36.30*ΔP	33358	23012+36.30*ΔP	49874	23012+36.39*ΔP	76869	23012+36.43*ΔP	103887	23012+36.43*ΔP	157985		
18	27880+60.84*ΔP	45219	27880+60.84*ΔP	72902	27880+60.96*ΔP	118101	27880+61.76*ΔP	164987	27880+62.76*ΔP	260406		
20	31420+89.20*ΔP	56842	31420+89.20*ΔP	97428	31420+89.35*ΔP	163658	31420+89.43*ΔP	229955	31420+89.32*ΔP	362350		
22	46024+113.66*ΔP	78417	46024+113.66*ΔP	130132	46024+113.48*ΔP	213974	46024+113.35*ΔP	297661	46024+116.85*ΔP	478953		
24	70806+136.12*ΔP	109600	70806+136.12*ΔP	171535	70806+136.81*ΔP	273285	70806+136.95*ΔP	374835	70806+136.94*ΔP	578169		
26	*	133644	*	201432	*	311700	*	421212	*			
28	*	151788	*	225744	*	345132	*	464508	*			
30	*	164532	*	243108	*	370320	*	499248	*			
32	*	175956	*	261540	*	400008	*	539004	*			
34	*	191004	*	281916	*	432060	*	581472	*			
36	*	203604	*	302592	*	464508	*	624276	*			

Unit of measure: inch / lbs

* Consult ISV for specific torque at certain pressures

1. No safety factor is included.
2. Class 150 through class 1500: Torques are provided for Nylon seated valves.
3. Class 2500: Torques are provided for PEEK seated valves.

To calculate the stem torque at any pressure, use the formula for the pressure class and size of the valve body.
 Example: A 12" Class 600 at 1080 psi = 10046 + (16.49 x 1080) = 27,855.2 inch/lbs.



ISV trunnion mounted ball valve being mounted with pneumatic actuator



API 6D test inspection at ISV-Stafford: Hydraulic shell & seats, pneumatic seats, double block & bleed test.

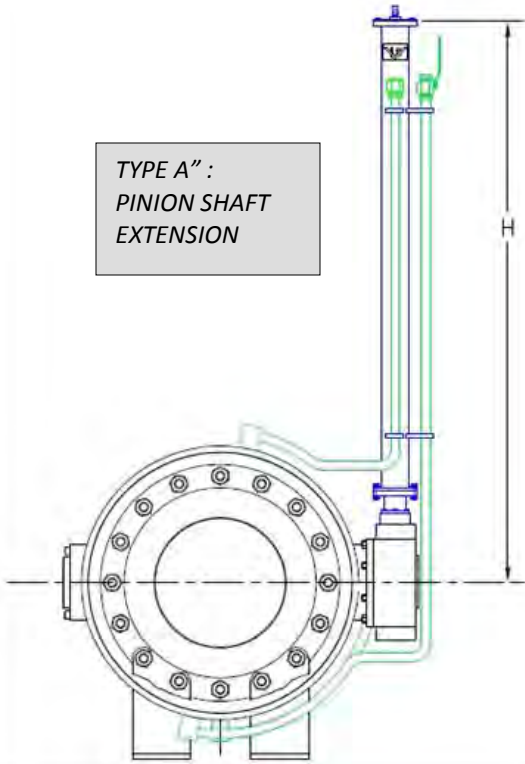


Cavity relieve pneumatic inspection at ISV

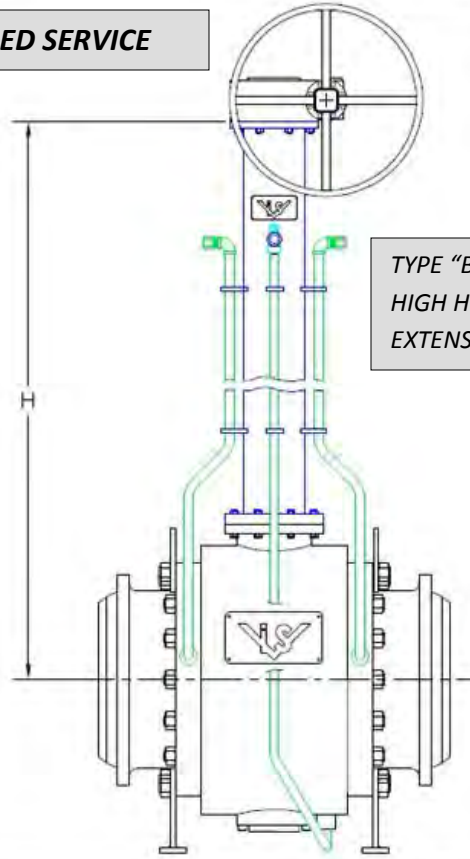
Customer specific external coating systems, High-Head or Pinion Shaft extensions for below ground service and pipe pups are available. Please specify pipe pup length and extension length (H-dimension) at time of order.

EXTENSIONS for BURIED SERVICE

TYPE "A":
PINION SHAFT
EXTENSION



TYPE "B":
HIGH HEAD
EXTENSION



OTHER ISV PRODUCTS



Oil & Gas Floating Ball valves



2PC Cast Trunnion mounted Ball valves

ISV — Texas





Contact Sales Representative:

International Standard Valve, Inc.

10749 Cash Road, Stafford, Texas 77477

713-983-7600, sales@isvalve.com



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