ISV

Trunnion Mounted Ball Valve

ISV Series

BT3BEU, BT3EU, BT3GU, BT4EU, BT9EU, BT7EU,
BT3BE, BT3E, BT3G

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International Standard Valves headquarters is located in Stafford, Texas, a Houston Suburb, near the center of the world's largest collection of Oil and Gas headquarters for exploration, production, and pipelines, so therefore also a major design center for the most prestigious Engineering Contractors in the world.

Our team of design, manufacturing, and quality engineers have over 100 years combined experience in the Valve Industry, allowing us to make deliberate and proven decisions to advance ISV forward at a remarkable pace.

Our 78,500 sq. ft. plant houses equipment utilizing the latest technologies for assembly, and testing. It is the hub for our engineering, manufacturing, sales, and warehousing.

Bearing in mind that the market necessitates shortened lead times; ISV has a comprehensive and massive inventory of components to build our world class products, allowing minimal lead times in most cases.

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

Our valves are utilized in both on shore and in off shore applications; and both above ground and buried applications.

Each employee at ISV, from the shop floor, to the sales department, and on through shipping, knows that they an integral part of a very special exemplary team where everyone in the company's first priority is superior customer service!

STATE-OF-THE-ART STAFFORD, TEXAS FACILITY

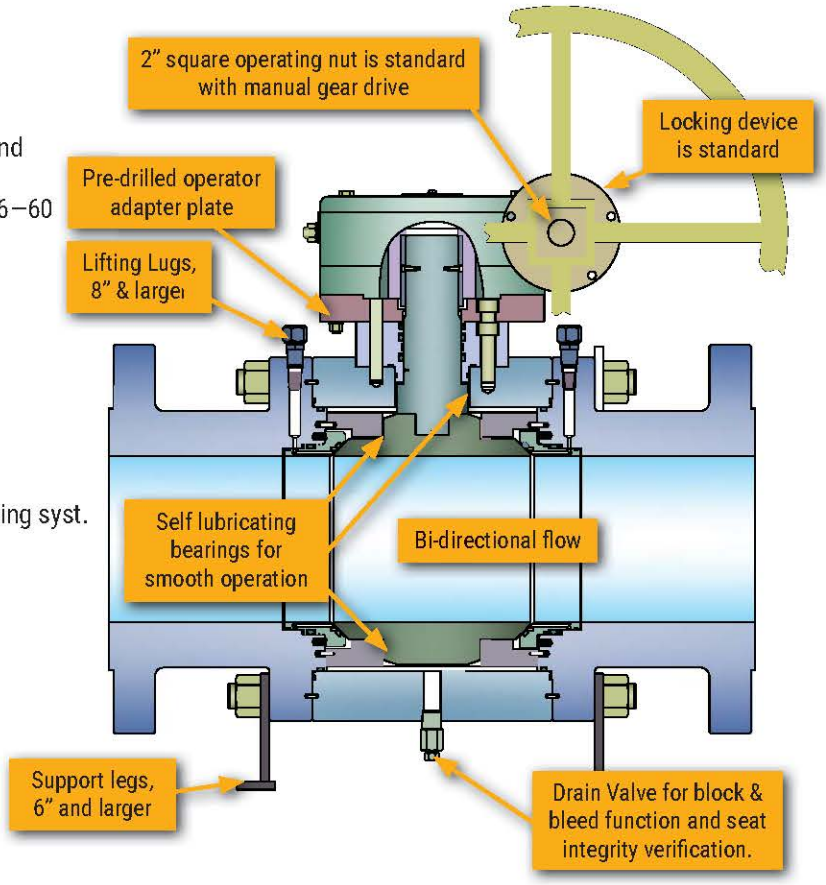
ISV Series BT
Standard Design Features

Two or three piece design, Bolted or Welded Body, Forged materials of construction, a variety of Seat and Seal options. Trunnion mounted. RF, RTJ or Buttweld end connections. Lever Gear operators, Pneumatic, Electric or Hydraulic actuation.

- API Monogrammed
- API 6D: Specification for pipeline valves (Certified)
- API 607/ISO 10497: Fire test for soft seated valves (Certified)
- API 608: Metal ball Valves
- API 6FA: Specification for fire test for valves
- API Q1 Specification for quality programs
- ASME B16.10: Face to face & end to end
- ASME B16.25: Buttweld ends
- ASME B16.34: Steel valves-flanged and butt weld end
- ASME B16.47: Large diameter steel flanges: NPS 26—60
- ASME B16.5: Steel pipe flanges and fittings
- 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.
- Anti-Static, Anti blow-out stem design
- Double Block and Bleed capability
- Emergency sealant injection system
- Metal contact for fire-safe seat sealing
- MSS SP-44 Steel Pipe Flanges
- NACE MR-01-75 / ISO 15156
- PED 97/23/EC Certified-International Production
- Rugged polymeric seat inserts
- Solid forged ball
- Static secondary body graphite fire-safe seals
- Trunnion supported ball design for lower torque

Size Range:
2" through 42"

ANSI Pressure Class 150 through 2500
Reduced & Full Ports



Typical Configuration

Size 6" - 8" full port, bolted body shown.
Welded body design is similar as applicable.

The ISV Difference

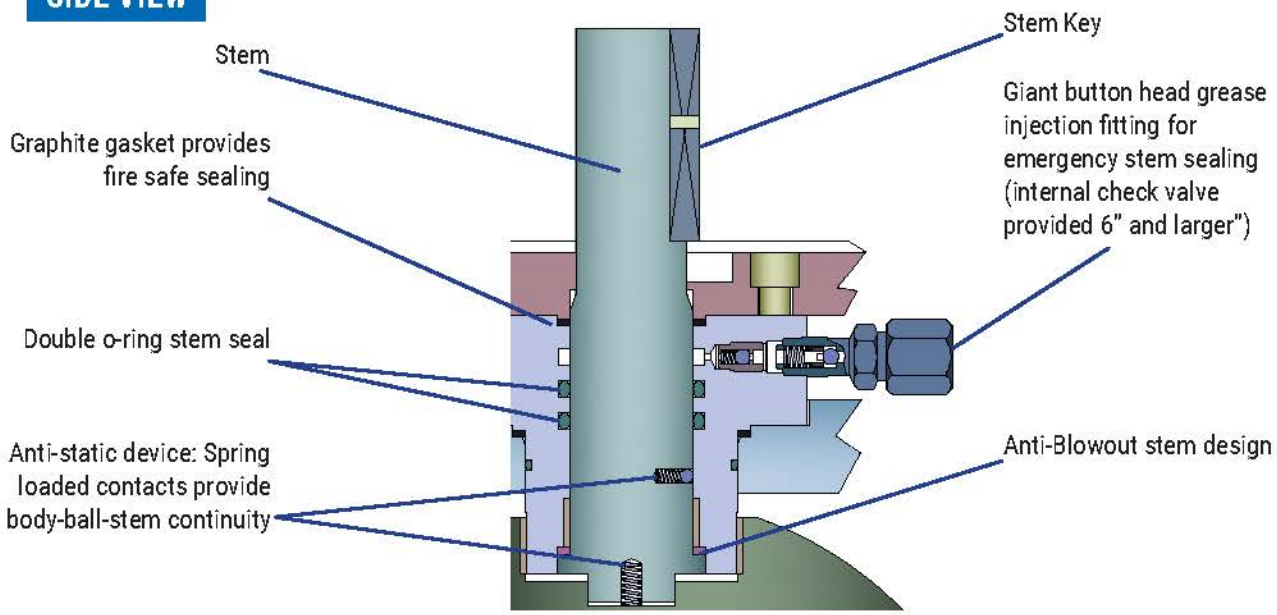
Other manufacturers sometimes claim that their standard features are options with other competitors, but with ISV Trunnion Ball Valves you have much more:

- Double block and bleed in the open position that allows the integrity of the valve to be checked without interrupting product flow.
- Spiral wound fire safe gaskets are used on all exterior joints (end caps, gland, trunnion) instead of graphite or rope seals that are only good for a few cycles.
- True fire safe piston action seat design, including seats, as most manufacturers do not have a graphite fire proof seal on the OD of the seat.
- ENP plating on the trunnion bearing plates and gland adapter plate to resist corrosion.
- Numerous solid pins between adapter plate, gland, and body increasing rigidity, instead of weaker split pins.
- Stem Thrust washers are metallic with PTFE which provide lower torque and longer life.
- Dual stem seals on valves 6" and larger.
- Valve design allows for installation of DPE (DIB I) or SPE (DIB II) seats. Many manufactures require the end pieces to be changed out.
- The standard o-rings are Low Temp HNBR good to -50 F.
- Seat seal to ball is a D-Ring with a Devlon scraper in 6" and larger valves which allows the valve to be more resistant to debris and consistently seal at very low pressures. There is no need for a snap ring that could come loose and scratch the ball.
- Environmental compliance assured by low emission design.

ISV Series BT
Standard Design Features

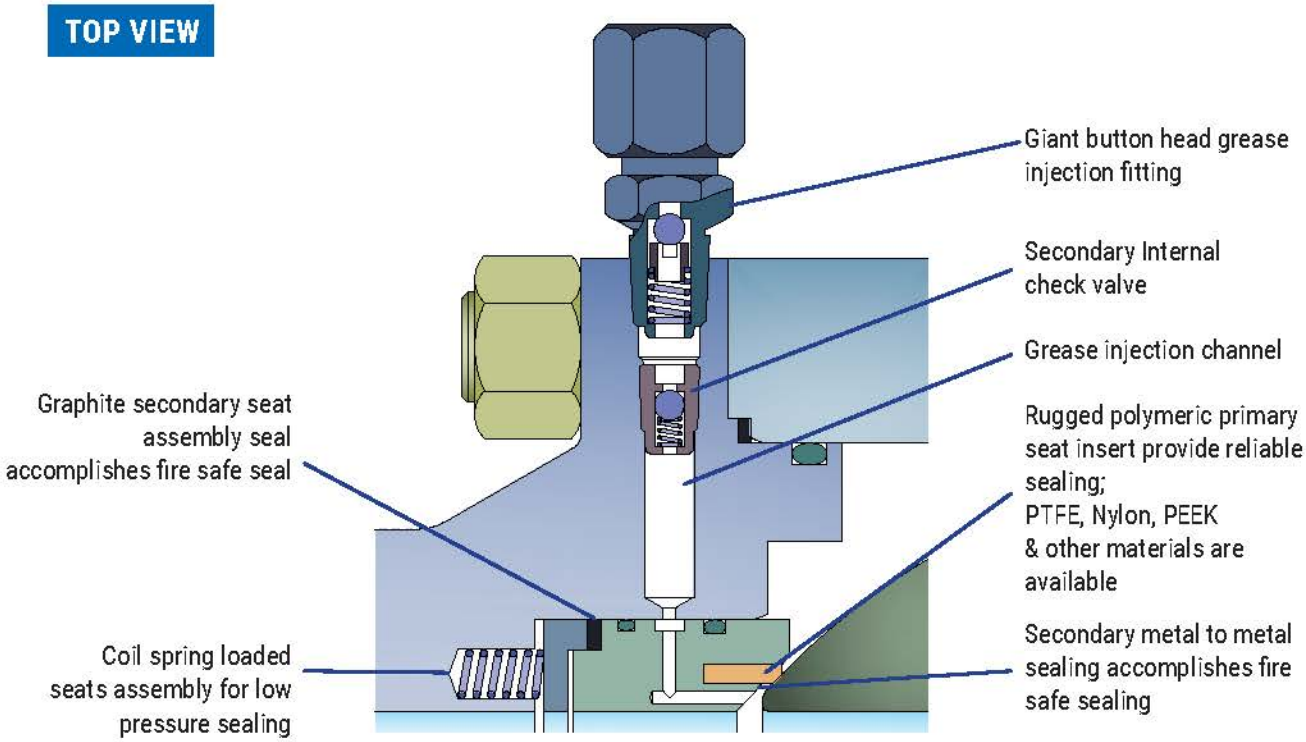
STEM DETAIL AND EMERGENCY SEAT SEALANT INJECTION SYSTEM

SIDE VIEW



SEAT DETAIL & EMERGENCY SEAT SEALANT INJECTION SYSTEM

TOP VIEW

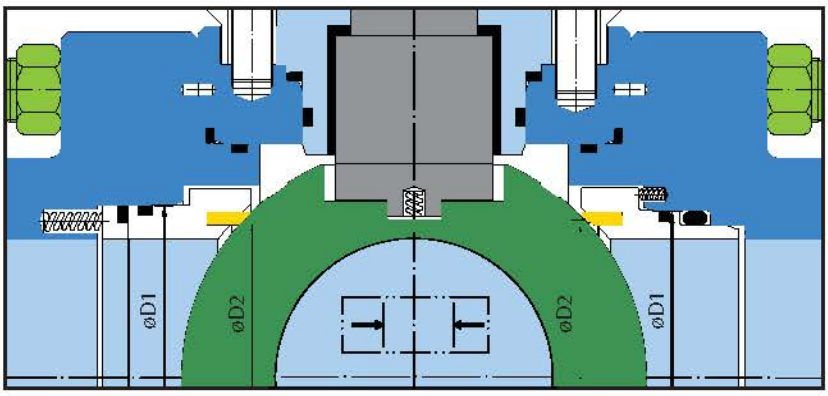


ISV Series BT
Seat Design Details

DOUBLE BLOCK AND BLEED VALVE (both seats are single directional, Single Piston Effect design) SPE x SPE

Self-Relieving Seat

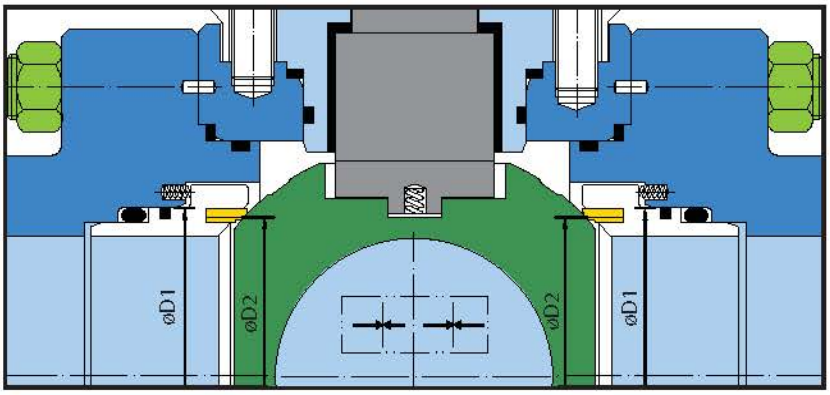
Valve seats are designed to relieve excessive pressure in the valve cavity. The pressure relieved to the low pressure side (downstream) on DBB valves.



DOUBLE ISOLATION AND BLEED VALVE DIB-1
(Both seats are Double Piston Effect seats, sealing on either side of the seat) DPE x DPE

Single valve with two seating surfaces that in the closed position, provides a seal against pressure from both ends of the valve with a means of venting/ bleeding the body cavity between the seating surfaces.

Each seat isolates flow thus the valve is not self relieving without an additional body cavity relief system.

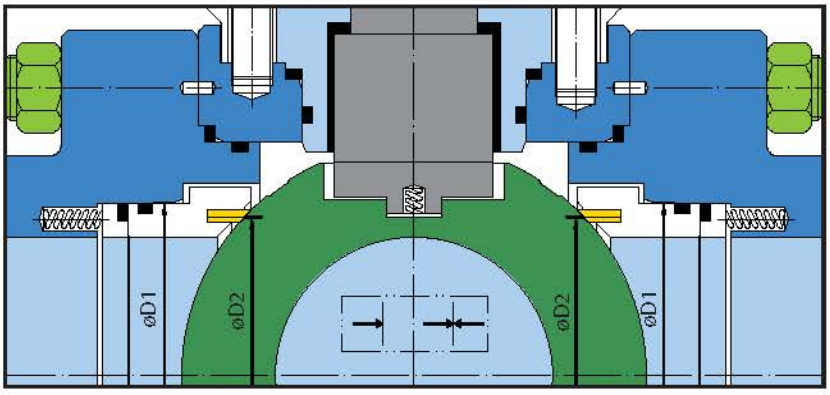


DOUBLE ISOLATION AND BLEED VALVE DIB-2 (one seat is SPE and one seat is DPE) SPE x DPE

Single valve with two seating surfaces, each of which, in the closed position, provides a seal against pressure from a single source, with a means of venting/ bleeding the cavity between the seating surfaces.

Self-Relieving Seat on one side

One seat is designed to relieve valve cavity pressure. The other seat is designed to not self-relieve.



ISV Series BT

How to order

EXAMPLE PART NUMBER: BT3EU2-F060-1110RF-NH-NFG
DESCRIPTION: CL 600, Full Port, Raised Face
DESIGN: 3pc bolted body **BODY:** A105N **TRIM:** Carbon Steel +3mil.ENP **SEAT DESIGN:** (DIB) Double Isolation and Bleed
SEATS: Nylon inserts **SEALS:** HNBR **ACTUATION:** Gear op **CERTIFIED:** NACE, Fire safe tested

BT	3	EU	2	-	F	060	-	11	10	RF	-	N	H	-	NF	G
1	2	3	4		5	6		7	8	9		10	11		12	13

1 Valve Type		2 Service/Design Style		3 Body Design		4 Seat Design		5 Bore	
Code	Type	Code	Design style	Code	Body style	Code	Seat Design	Code	Port
BT	Trunnion	1	Adjustable Stem Packing	E	3 pc Bolted Body		SPE x SPE (DBB)	R	Reduced
		3	O-Ring Stem Seal	G	3 pc Welded Body	1	DPE x DPE (DIB-1)	F	Full
		4	Metal Seated	U	USA Production	2	SPE x DPE (DIB-2)		
		5	Weld Overlay Body	B	2pc Bolted Body				
		7	Cryogenic Service						
		9	Severe Service						

6 Pressure Rating (ASME)		7 Body Material		8 Trim Material		9 End Connections	
Code	Class	Code	Material	Code	Material	Code	Ends
015	150	10	Carbon Steel	10	C.S. + ENP	RF	Flg-RF
030	300	11	A105N	19	XM19	RJ	Flg-RTJ
060	600	21	A105N / LF2 (-20 Deg. F. Service)	20	LT. C.S. + ENP (-50 Deg. F. Service)	FF	Flg-FF
090	900	22	LF2 (-50 Deg. F. Service)	34	304SS / CF8	WW	WE x WE
150	1500	34	304SS	36	316SS / CF8M	WF	WE x RF
250	2500	36	316SS	51	F51 / 318	WJ	WE x RTJ
		51	F51 / 318	60	Inconel 625		
		60	Inconel	61	410SS		
		91	CS + Inconel Seat Pocket	62	Inconel 825		
		92	CS + SS Seat Pocket	71	Monel		
		95	CS + ENP Internal				

10 Seat		11 Body Seals		12 NACE/Fire Safe		13 Operator	
Code	Material	Code	Material	Code	Description	Code	Description
N	Nylon	V	Viton	NF	NACE Compliant, Fire Safe	L	Locking Lever
T	PTFE	H	HNBR	NW	NACE Compliant, Non Fire Safe Tested	B	Bare Stem
D	Devlon V	L	Low Temp	WF	Without NACE, Fire Safe	S	Spring Return Lever
H	HNBR	K	PCTFE	WW	Without NACE, Non Fire Safe Tested	G	Locking Manual Gear
R	RPTFE	G	Graphite			H	Non Locking Lever
C	TFM 4215	T	PTFE			C	Chain Wheel
K	PCTFE	M	TFM			O	Oval Hand Wheel
P	PEEK	E	EPDM			A	Actuated
V	Viton	W	FFKM			E1	Pinion Shaft Extension
1	Tung. Carbide	9	PTFE - Lip Seal			E2	High Head Extension

NOTE: Materials of construction are NACE compliant unless otherwise specified by customer.

ISV Series BT3B

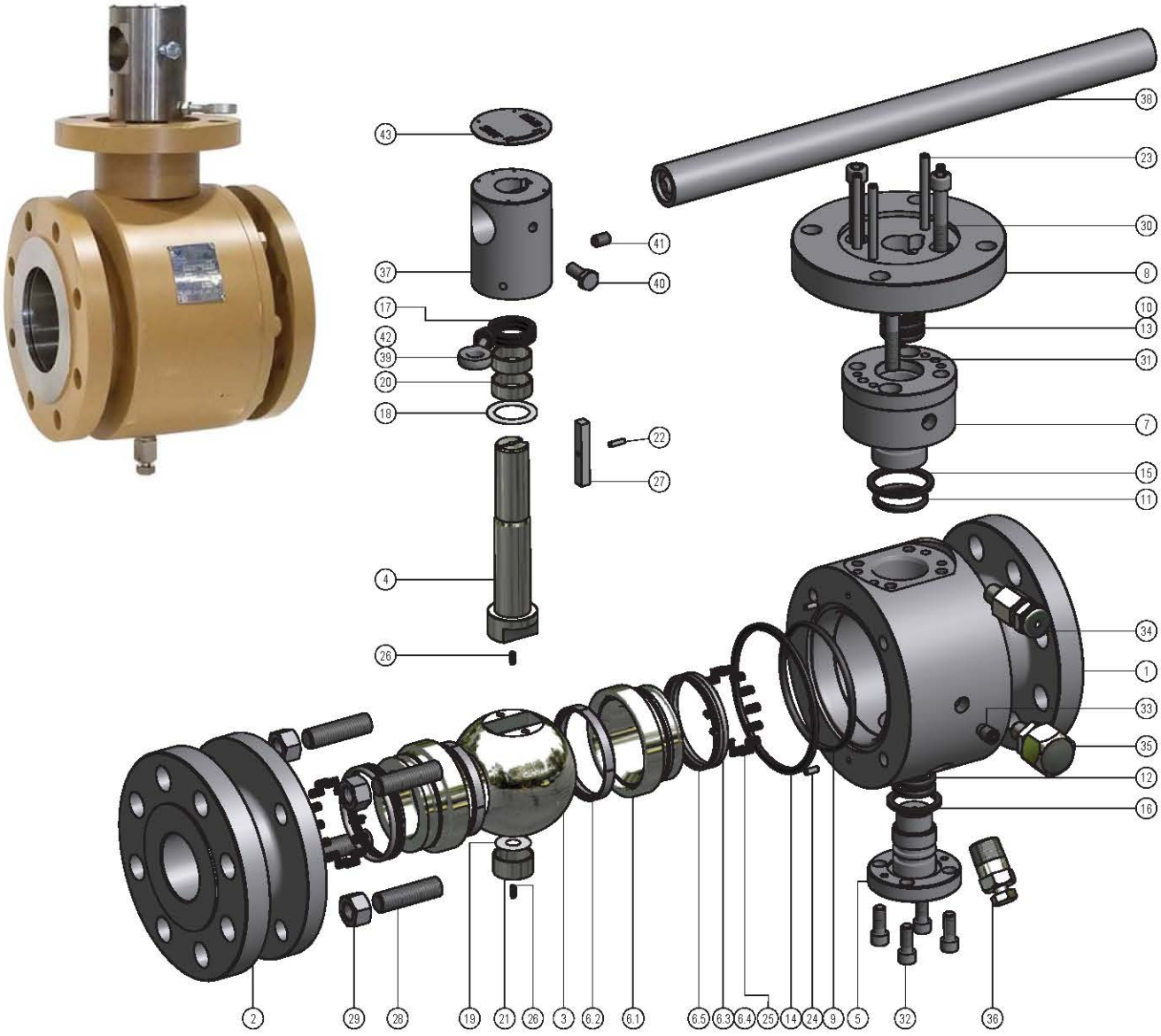
2 pc Bolted Body, Exploded View, Component parts

CLASS 150 & 300 2" - 4"

ITEM NO.	PART DESCRIPTION
1	Body
2	End Cap
3	Ball
4	Stem
5	Trunnion
6	Seat
6.1	Seat Ring
6.2	Seat Insert
6.3	O-Ring, Seat
6.4	Backup Ring, Seat
6.5	Gasket Seat
7	Gland
8	Top Plate
9	Body/End Cap/Lipseal
10	O-Ring, Stem
11	O-Ring, Gland

ITEM NO.	PART DESCRIPTION
12	O-Ring, Trunnion
13	Backup Ring, Stem
14	Body/End Cap Gasket
15	Gland Gasket
16	Trunnion Gasket
17	Stem Packing
18	Thryst Washer, Stem
19	Spacer-Ball Lower
20	Bearing Ball-Upper
21	Bearing Ball-Lower
22	Stem Key Pin
23	Alignment Pin
24	Locating Pin, Body/End Cap
25	Coil Spring, Seat
26	Spring, Anti-Static
27	Key

ITEM NO.	PART DESCRIPTION
28	Studs (Us) (End Cap/Body)
29	Hex Nut (Us)
30	Cap Screws (Us) (Top Plate/Gland
31	Cap Screws (Us) (Gland/Body)
32	Cap Screws (Us) (Trun./Body
33	Internal Check Valve, Seat
34	Stem Injection Fitting
35	Seat Injection Fitting
36	Drain Valve
37	T Lever Adapter
38	Handle
39	Lock Screw
40	Bolt
41	Set Screw-Stem Key
42	Nut, Lock Device
43	Nameplate



ISV Series BT3E

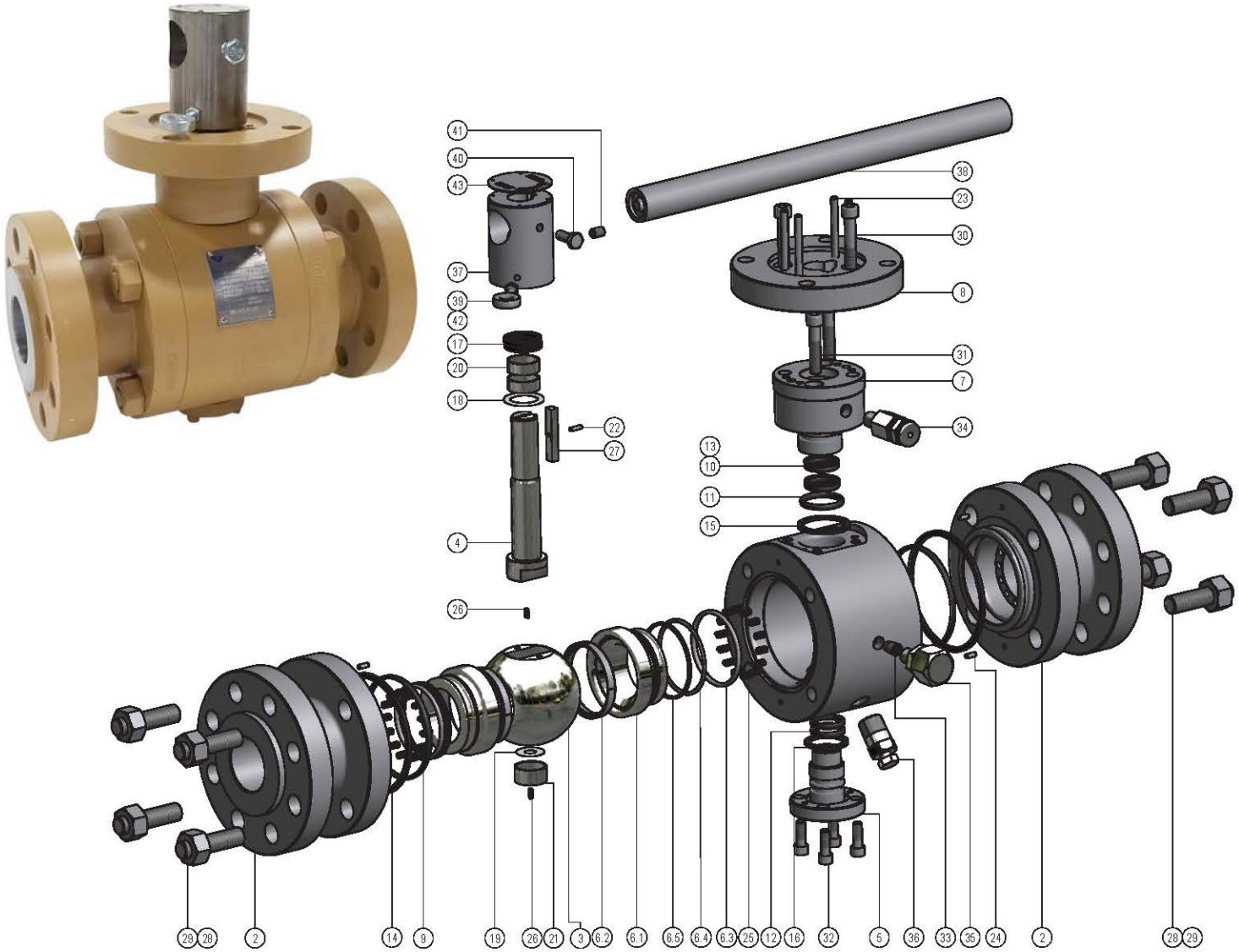
3 pc Bolted Body, Exploded View, Component parts

CLASS 600,900,1500 2" & 3"

ITEM NO.	PART DESCRIPTION
1	Body
2	End Cap
3	Ball
4	Stem
5	Trunnion
6	Seat
6.1	Seat Ring
6.2	Seat Insert
6.3	O-Ring, Seat
6.4	Backup Ring, Seat
6.5	Gasket Seat
7	Gland
8	Top Plate
9	O-Ring, End Cap/Lipseal
10	O-Ring Stem
11	O-Ring,Gland

ITEM NO.	PART DESCRIPTION
12	O-Ring Trunnion
13	Backup Ring, Stem
14	Gasket Body-Endcap
15	Gasket, Gland
16	Gasket, Trunnion
17	Stem Packing
18	Thrust Washer
19	Spacer-Ball-Lower
20	Bearing Ball-Upper
21	Bearing Ball-Upper
22	Stem Key Pin
23	Alignment Pin
24	Body/End Cap Pin
25	Spring, Anti-Static
26	Spring, Seat
27	Key

ITEM NO.	PART DESCRIPTION
28	Studs (End Cap/Body)
29	Nut
30	Cap Screw (Top Plate/Gland)
31	Cap Screw (Gland/Body)
32	Cap Screw (Trunnion/Body)
33	Internal Check Valve, Seat
34	Injection Fitting, Stem
35	Injection Fitting, Seat
36	Drain Valve
37	Lever Adapter
38	Handle
39	Lock Screw
40	Bolt
41	Set Screw-Stem Key
42	Nut, Lock Device
43	Nameplate



ISV Series BT3E

3 pc Bolted Body, Exploded View, Component parts

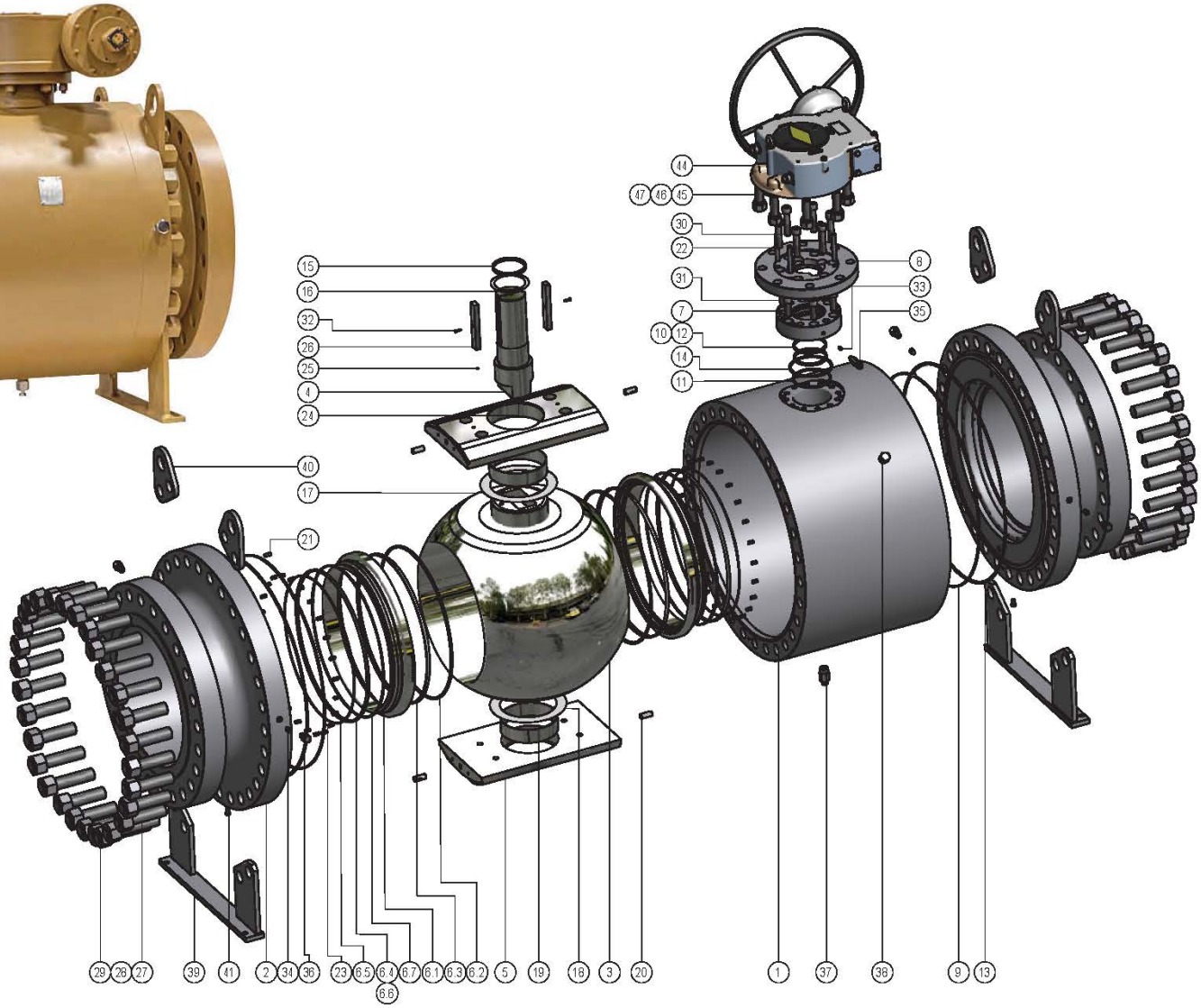
CLASS
600, 900
4"

CLASS
150 - 1500
6" - 42"

ITEM NO.	PART DESCRIPTION
1	Valve Body
2	End Cap
3	Ball
4	Stem
5	Trunnion Plate
6	Seat
6.1	Seat
6.2	Delta Ring
6.3	Seat Insert
6.4	O-Ring, Seat
6.5	O-Ring Seat, (Secondary)
6.6	Backup Ring, Seat
6.7	Gasket Seat
7	Gland
8	Top Plate
9	O-Ring, End Cap/Body (Lipseal)
10	O-Ring Stem
11	O-Ring Gland

ITEM NO.	PART DESCRIPTION
12	Backup Ring, Stem
13	Gasket, Body/End Cap
14	Gasket Gland
15	Stem Packing
16	Thrust Washer, Stem
17	Spacer-Ball-Upper
18	Spacer-Ball-Lower
19	Bearing Ball
20	Pin, Trunnion Plate
21	Body/End Cap Pin
22	Alignment Pin
23	Spring, Seat
24	Spring, Anti-Static
25	Anti-Static Spring Device
26	Key
27	Studs (Support Leg)
28	Studs (End Cap/Body)
29	Nut

ITEM NO.	PART DESCRIPTION
30	Cap Screw (Top Plate/Gland)
31	Cap Screw (Gland/Body)
32	Set Screw, Stem Key
33	Internal Check Valve, Stem
34	Internal Check Valve, Seat
35	Injection Fitting, Stem
36	Injection Fitting, Seat
37	Drain Valve
38	Vent Plug
39	Support Leg
40	Lifting Eye
41	Vent Plug
44	Gear Box
45	Stud, Gear
46	Nut, Gear
47	Washer, Gear



ISV Series BT3E

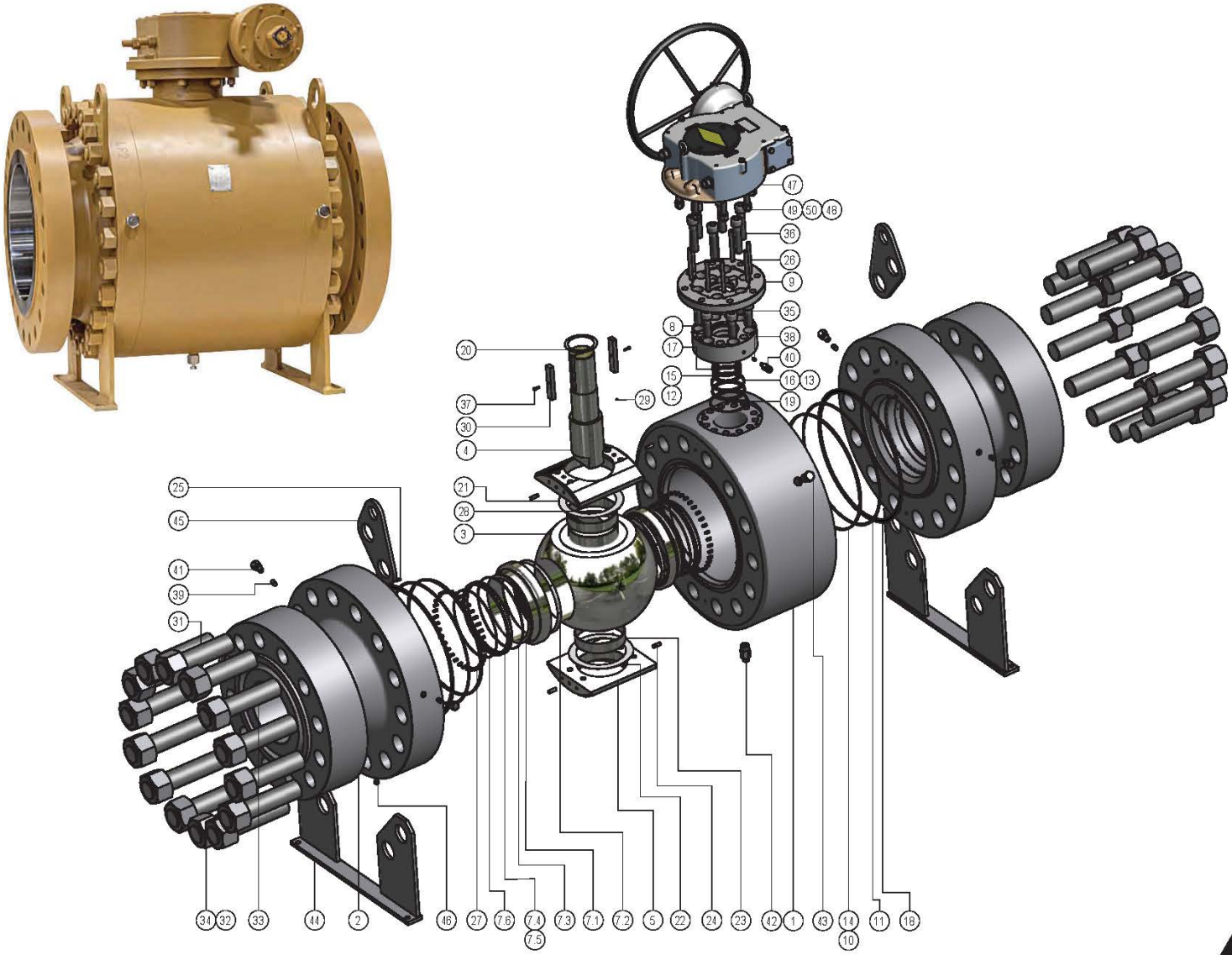
3 pc Bolted Body, Exploded View, Component parts

ALL CLASS 2500

ITEM NO.	PART DESCRIPTION
1	Valve Body
2	End Cap
3	Ball
4	Stem
5	Trunnion Plate
6	Seat
7	Seat
7.1	Seat Ring
7.2	Seat Insert
7.3	Gasket Seal
7.4	Backup Ring, Seal
7.5	O-Ring Seat
7.6	O-Ring Seat, (Secondary)
8	Gland
9	Top Plate
10	O-Ring, End Cap (Lipseal)
11	O-Ring, End Cap (Lipseal)
12	O-Ring, Gland
13	O-Ring Stem

ITEM NO.	PART DESCRIPTION
14	Backup Ring, Body/Endcap
15	Backup Ring, Gland
16	Backup Ring, Stem
17	Stem Packing
18	Gasket Body/End Cap
19	Gasket, Gland
20	Thrust Washer, Stem
21	Spacer-Ball-Upper
22	Spacer-Ball-Lower
23	Bearing Ball
24	Pin-Trunnion Plate
25	Body/End Cap Pin
26	Internal Threaded Pin
27	Alignment Pin
28	Soring, Seat
29	Spring-Anti-Static
30	Key
31	Studs (End Cap/Body)
32	Studs (Support Leg)

ITEM NO.	PART DESCRIPTION
33	Studs (Lifting Lug)
34	Nut
35	Cap Screw (Gland/Body)
36	Cap Screw (Top Pale/Gland)
37	Set Screw-Stem Key
38	Internal Check Valve-Stem
39	Internal Check Valve-Seat
40	Injection Fitting-Stem
41	Injection Fitting-Seat
42	Drain Valve
43	Vent Plug
44	Support Leg
45	Lifting Eye
Vent	Vent Plug
47	Gear Box
48	Stud-Gear
49	Nut-Gear
50	Washer-Gear



ISV Series BT3G

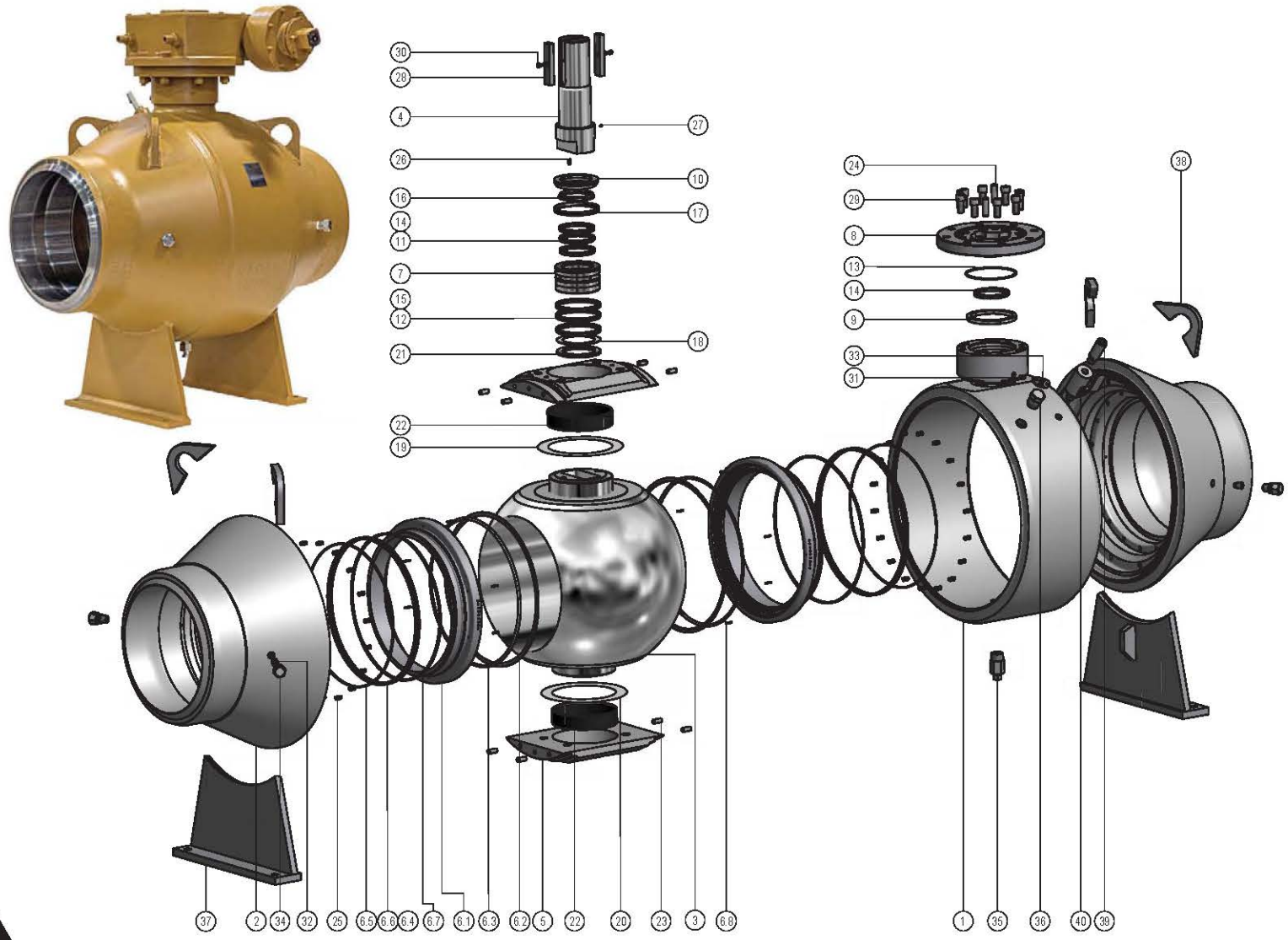
Fully Welded Body, Exploded View, Component parts

ALL CLASSES/ SIZES

ITEM NO.	PART DESCRIPTION
1	Valve Body
2	Left Body
3	Ball
4	Stem
5	Trunnion Plate
6	Seat
6.1	Seat Support
6.2	Delta Ring
6.3	Seat Insert
6.4	O-Ring Seat
6.5	O-Ring Seat, (Secondary)
6.6	Backup Ring, Seat
6.7	Gasket Seat
6.8	Elastic Cylindrical Pin
7	Gland
8	Top plate

ITEM NO.	PART DESCRIPTION
9	Gasket Gland
10	O-Ring, Stem
11	O-Ring Seal
12	O-Ring Seal
13	O-Ring Seal
14	Gasket Gland
15	Stem Packing
16	Backup Ring, Stem
17	O-Ring Backup
18	Spacer-Ball-Upper
19	Spacer Ball, Lower
20	Bearing Ball
21	Thrust Washer
22	Sliding Bearing (Composite)
23	Locating Pin
24	Alignment Pin

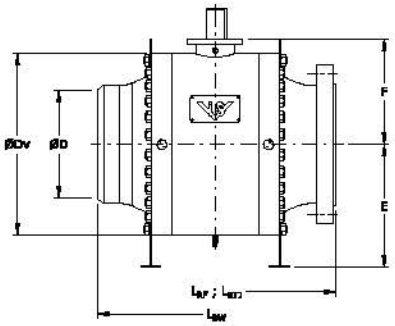
ITEM NO.	PART DESCRIPTION
25	Spring Seat
26	Spring, Anti Static
27	Anti-Static Spring Device
28	Key
29	Cap Screw (Top Plate/Gland)
30	Key
31	Internal Check Valve, Stem
32	Internal Check Valve, Seat
33	Injection Fitting, Stem
34	Injection Fitting, Seat
35	Drain Valve
36	Vent Plug
37	Support Leg
38	Lifting Eye
39	Pressure Relief Valve
40	Ball Valve



ISV Series BT

Dimensional Data Class 150

BOLTED OR WELDED DESIGN

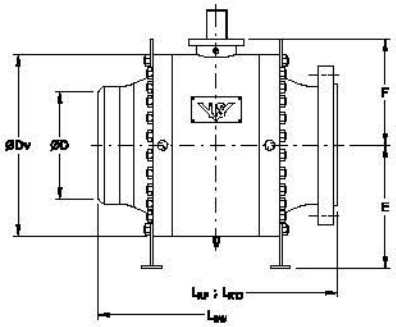


Class 150		Inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50.00	2.00	7.00	7.50	8.50	6.00	3.90	4.10	62.00	48.00	490
3" x 2"	80 x 50	3.0 x 2.0	8.00	8.50	11.13	6.00	3.90	4.10	68.00	57.00	200
3"	80.00	3.00	8.00	8.50	11.13	7.40	4.90	6.10	117.00	106.00	1320
4" x 3"	100 x 80	4.0 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
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

ISV Series BT

Dimensional Data Class 300

BOLTED OR WELDED DESIGN

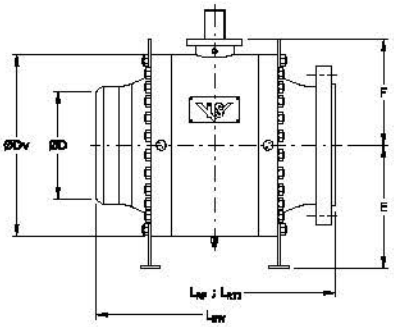


Class 300		Inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	2.00	8.50	9.13	8.50	6.00	3.90	4.10	64	51	450
3" x 2"	80 x 50	3.0 x 2.0	11.13	11.75	11.13	6.00	3.90	4.10	75	44	195
3"	80	3.00	11.13	11.75	11.13	7.40	4.90	6.10	126	95	1130
4" x 3"	100 x 80	4.0 x 3.0	12.00	12.63	12.00	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

ISV Series BT

Dimensional Data Class 600

BOLTED OR WELDED DESIGN

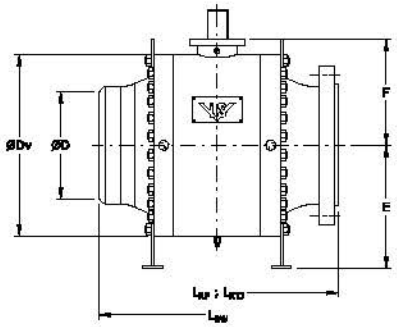


Class 600		Inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	2.00	11.50	11.63	11.50	6.30	3.90	4.10	73	60	400
3" x 2"	80 x 50	3.0 x 2.0	14.00	14.13	14.00	6.30	3.90	4.10	88	33	190
3"	80	3.00	14.00	14.13	14.00	7.50	5.10	6.50	141	86	1030
4" x 3"	100 x 80	4.0 x 3.0	17.00	17.13	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

ISV Series BT

Dimensional Data Class 900

BOLTED OR WELDED DESIGN

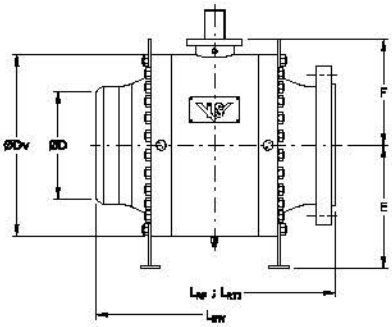


Class 900		Inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	2.00	14.50	14.63	14.50	6.30	4.10	4.10	110	59	330
3" x 2"	80 x 50	3.0 x 2.0	15.00	15.13	15.00	6.30	4.10	4.10	117	86	185
3"	80	3.00	15.00	15.13	15.00	7.50	5.10	6.50	168	137	920
4" x 3"	100 x 80	4.0 x 3.0	18.00	18.13	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
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	*	41.70	24.80	24.20	19290	15740	43600
26"	650	24.40	65.00	65.88	*	44.10	25.60	25.60	17725	*	93240
30"	750	28.10	74.00	74.88	*	51.20	30.70	28.50	26918	23368	131500
36"	900	33.70	90.00	91.13	*	60.20	35.40	33.30	43916	38161	148650

ISV Series BT

Dimensional Data Class 1500 and 2500

BOLTED OR WELDED DESIGN

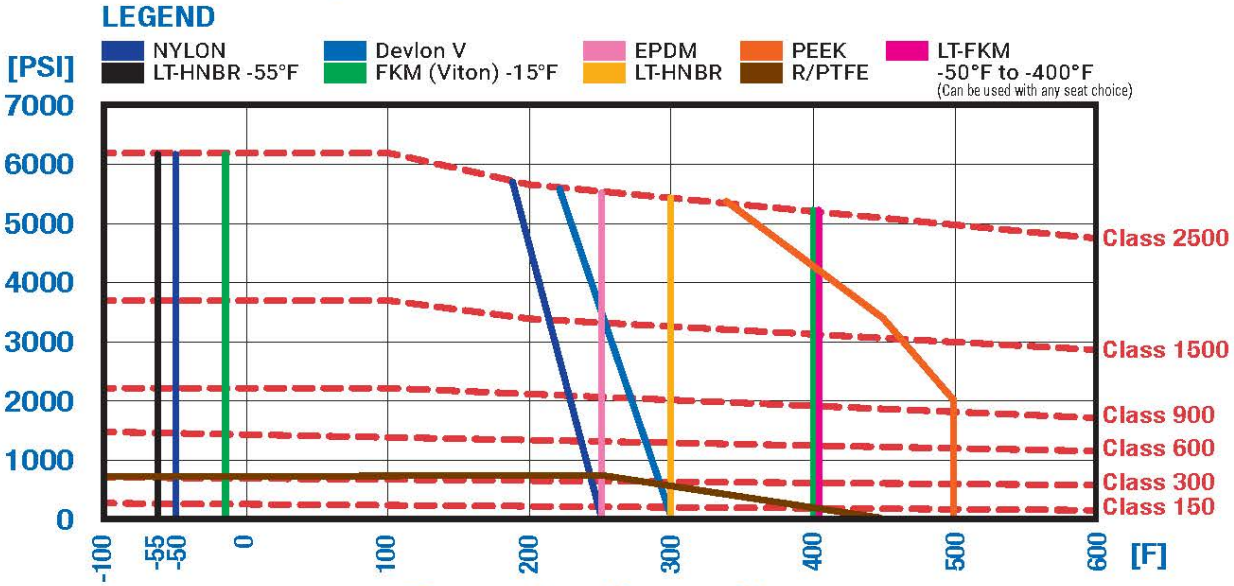


Class 1500		Inches							Weight (lbs)		
NPS	DN	D	L RF	L RTJ	L BW	Dv	E	F	RF, RTJ	BW	Cv
2"	50	2.00	14.50	14.63	14.50	6.30	4.10	4.10	117	14	330
3" x 2"	80 x 50	3.0 x 2.0	18.50	18.63	18.50	6.30	4.10	4.10	146	86	180
3"	80	3.00	18.50	18.63	18.50	7.50	5.10	6.50	216	156	820
4" x 3"	100 x 80	4.0 x 3.0	21.50	21.63	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	27.75	9.60	6.60	8.50	639	484	730
6"	150	5.70	27.75	28.00	27.75	13.60	9.10	10.20	1069	914	4000
8" x 6"	200 x 150	7.6 x 5.7	32.75	33.13	32.75	13.60	9.10	10.20	1268	1004	1900
8"	200	7.60	32.75	33.13	32.75	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	*	33.50	19.70	18.90	10979	9767	18700
20" x 16"	500 x 400	18.0 x 14.3	65.50	66.38	*	33.50	19.70	18.90	11354	9722	*
18"	450	16.00	60.50	61.38	*	38.60	23.60	21.70	13801	12589	42500
20" x 18"	500 x 450	18.0 x 16.0	65.50	66.38	*	38.60	23.60	21.70	16623	14991	21100
20"	500	18.00	65.50	66.38	*	40.20	25.60	24.40	20106	18474	54800
24" x 20"	600 x 500	21.0 x 18.0	*	77.63	*	40.20	25.60	24.40	24141	21672	25100
24"	600	21.00	*	77.63	*	50.80	28.30	27.60	31570	29101	82350

Class 2500		Inches							Weight (lbs)		
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

ISV Series BT

Pressure Temperature Limits*



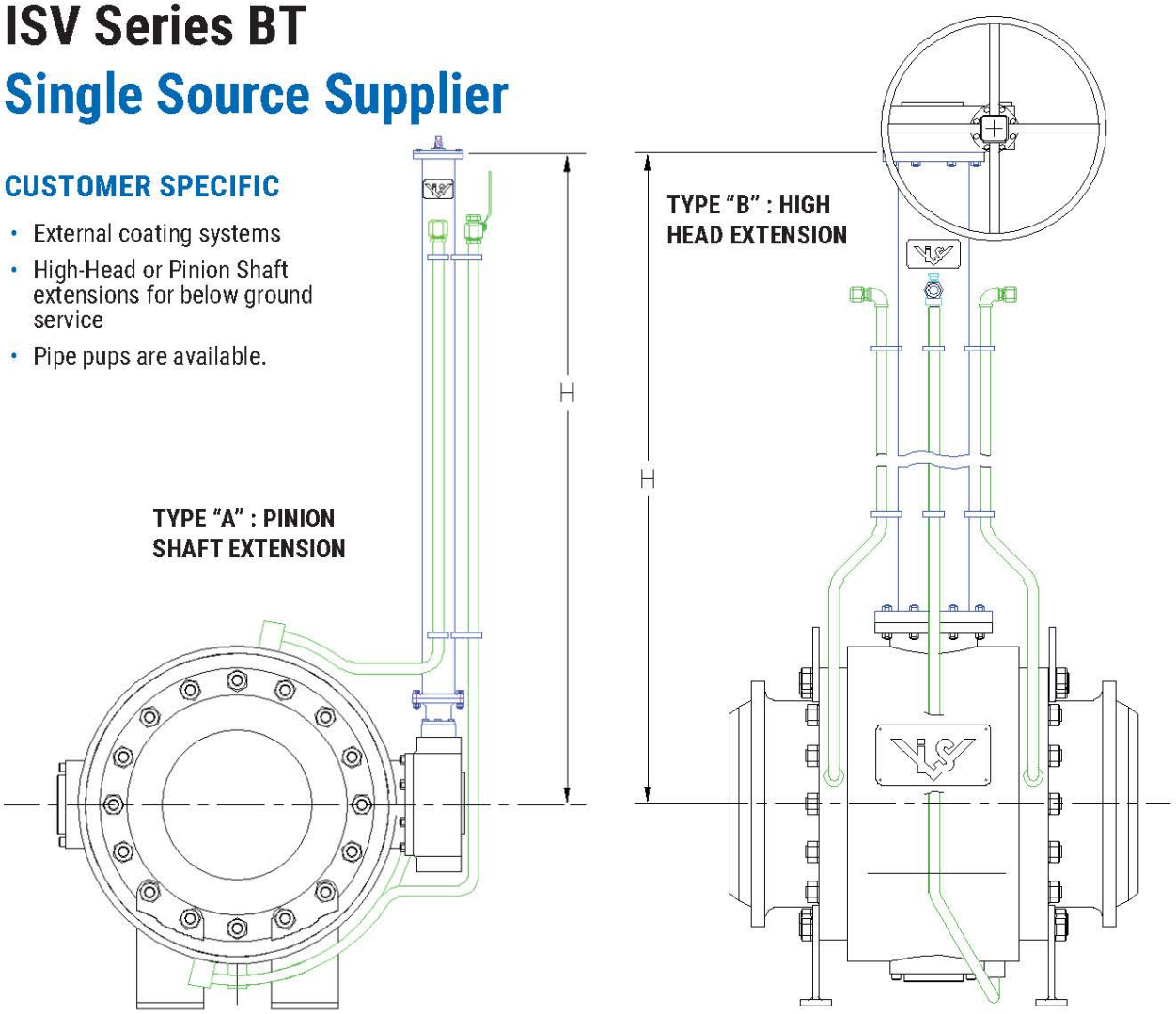
*The Pressure/Temperature Limits of any value are dependent upon the materials selected along with the seat/seal of choice.

ISV Series BT

Single Source Supplier

CUSTOMER SPECIFIC

- External coating systems
- High-Head or Pinion Shaft extensions for below ground service
- Pipe pups are available.



ISV Series BT

Ball Valves for Special Applications: Cryogenic and Metal Seated

Metal Seated ISV Series BT4E/BT9E:

ISV's Metal seated ball valves are designed for the most severe applications where high temperature and or abrasive factors influence the process. They are ideally suited for the mineral and mining processing industries slurry, sandy oil and gas applications.

Available in both floating and trunnion ball valve designs.

The ball and the metal seat contact surfaces are coated with wear resistant materials by HVOF (High Velocity Oxygen Fuel) thermal coating process, which provides a strong metal bonding with minimal impact to the metal deformation.

- -50°F to 932°F (higher on application)
- Seat Leakage Testing ANSI/FCI 70-2 Class V. Class VI is available upon request.
- Metal seat hard face coatings are available in Stellite®, Tungsten Carbide or Chrome Carbide options.
- Seats are lapped to the ball with extremely tight tolerances providing very tight shut-off. Other seat materials are available on request.

Cryogenic ISV Series BT7E:

ISV's Cryogenic three piece ball valves are specifically designed for LNG production, transportation, storage and other low temperature applications. Extended stems with gas columns and bonnets are designed to position the stem packing above the cryogenic process, which then provides a column of warmer vapor that insulates the stem seal from the effects of the low temperatures.

- Designs are in accordance with ASME 16.34, API 6D, API 608, and MSS SP 134.
- 1-PC Extended Stem, Our stem is made of one solid component piece extended to the valves ball. The packing is insulated and there is no leak path in the extension.
- PCTFE (KEL-F®) Seats are standard
- Soft and Metal seated
- Long cycle life
- Low torques.
- Vented Ball Standard
- Live-Loaded Packing and Anti-Static Standard

ISV cryogenic valves are not limited to Ball valves. We also offer Gate and Globe valves for cryogenic applications.

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