



ISV



Trunnion Mounted Ball Valve ISV Series

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

TABLE OF CONTENTS

Standard Design Features	3
ISV Difference	4
Stem/Seat, and Injection details.....	5
Seat Designs	6
How to Order	7
Bolt body Exploded view. Cl 150-300	8
Bolt body Exploded view. Cl 600,900,1500	9
Bolt body Exploded view. Cl 600,900 150-1500... ..	10
Bolt body Exploded view. Cl 2500	11
Welded body Exploded view All sizes/Class	12
Dimensional Data CL.150.....	13
Dimensional Data CL.300.....	14
Dimensional Data CL.600.....	15
Dimensional Data CL.900.....	16
Dimensional Data CL.1500 & 2500.....	17
Pressure Temperature Chart.....	18
Metal Seated and Cryogenic designs	19

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 are 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

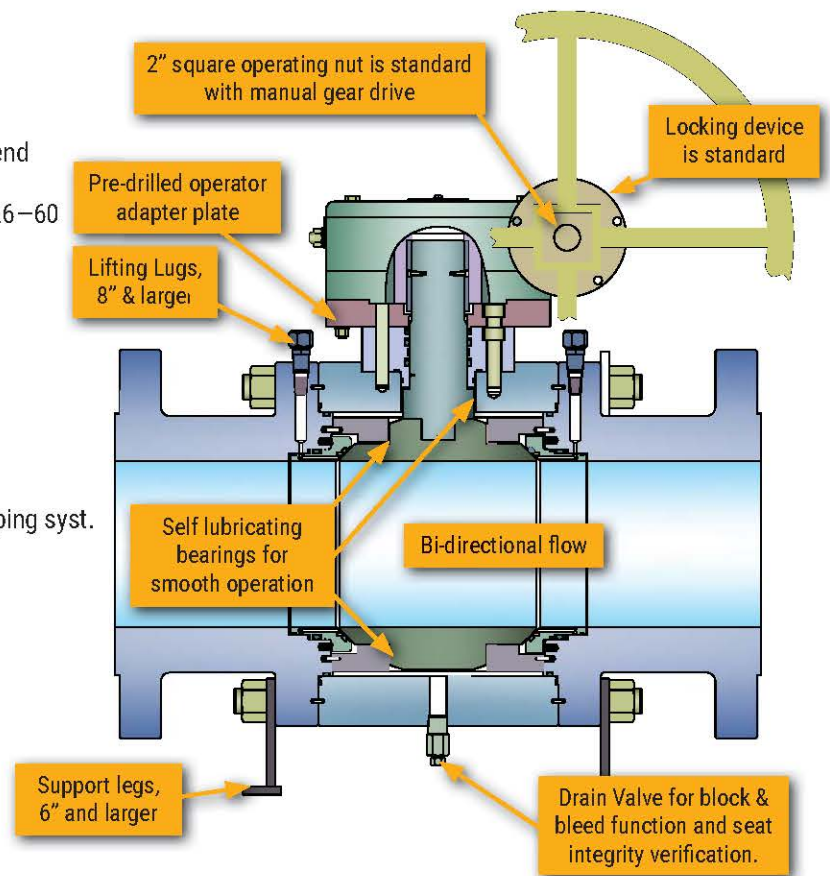
Standard Design Features

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:

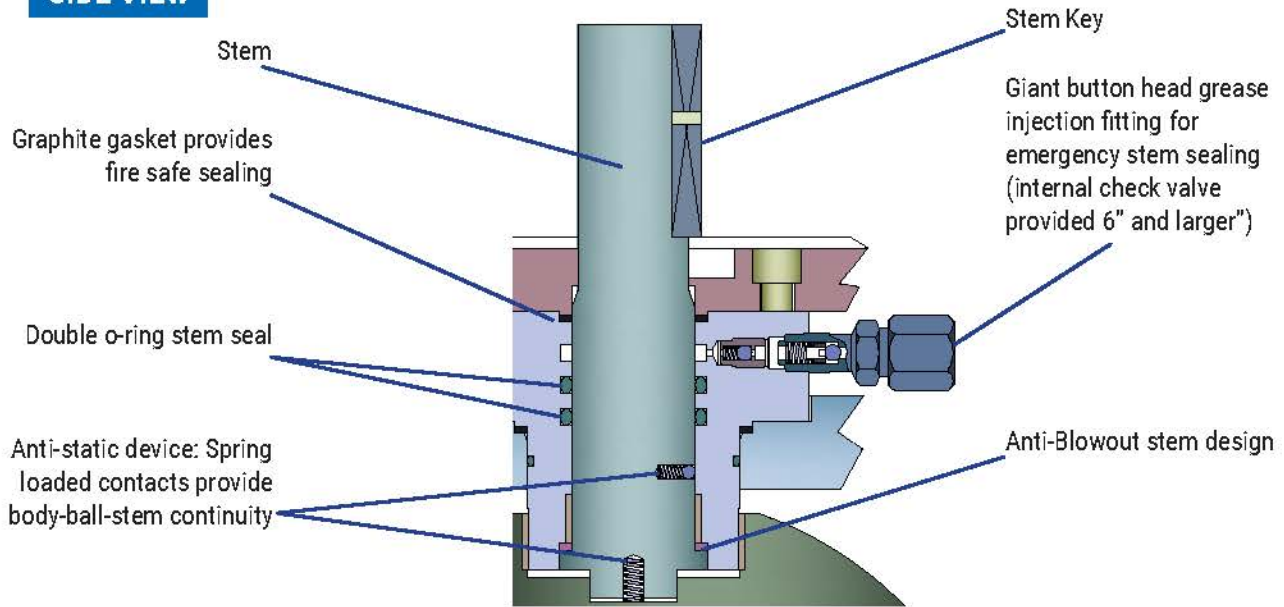
- Double block and bleed in the open position that allows the integrity of the valve to be checked without interrupting product flow.
- Spiral wound fire safe gaskets are used on all exterior joints (end caps, gland, trunnion) instead of graphite or rope seals that are only good for a few cycles.
- True 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

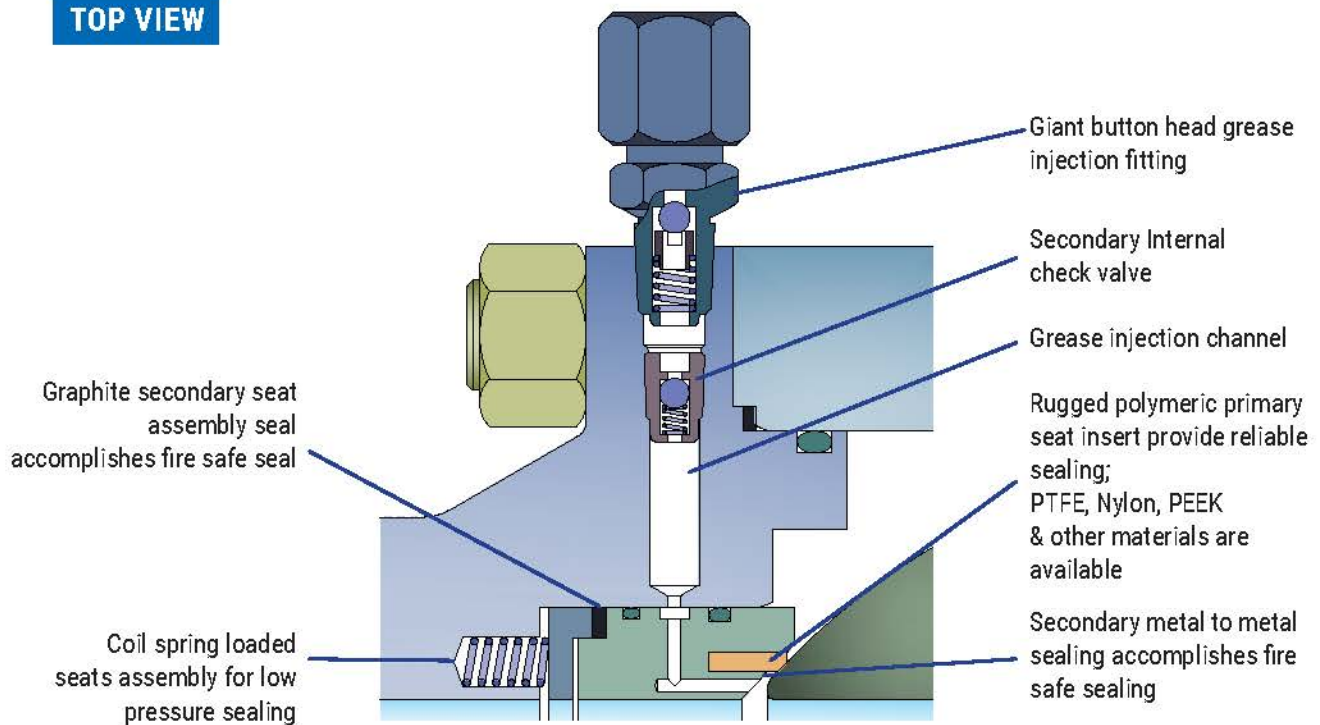
STEM DETAIL AND EMERGENCY SEAT SEALANT INJECTION SYSTEM

SIDE VIEW



SEAT DETAIL & EMERGENCY SEAT SEALANT INJECTION SYSTEM

TOP VIEW



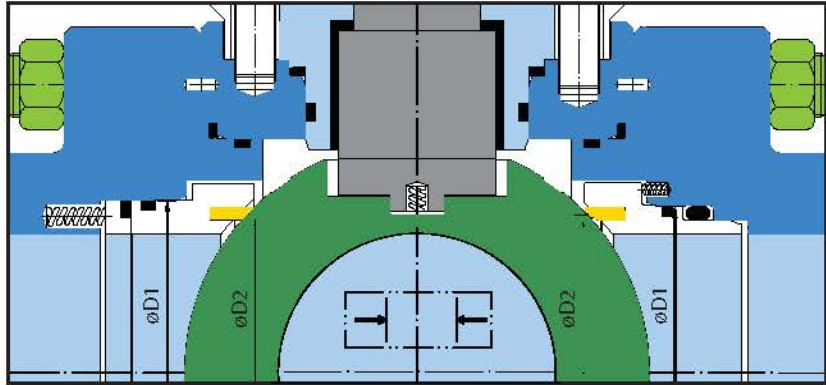
ISV Series BT

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.

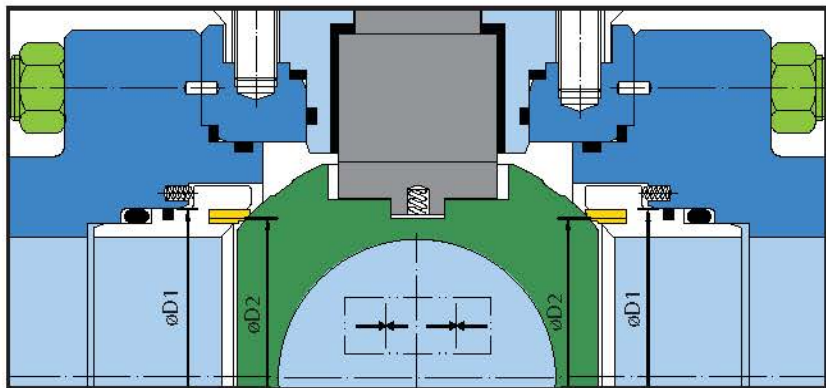


DOUBLE ISOLATION AND BLEED VALVE DIB-1

(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.

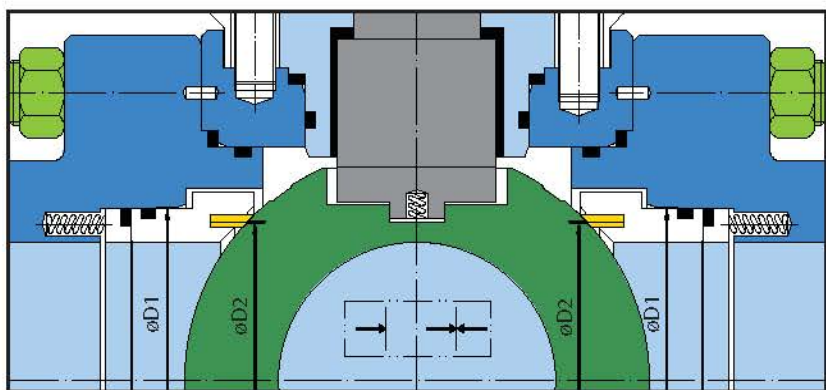


DOUBLE ISOLATION AND BLEED VALVE DIB-2 (one seat is SPE and one seat is DPE) SPE x DPE

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

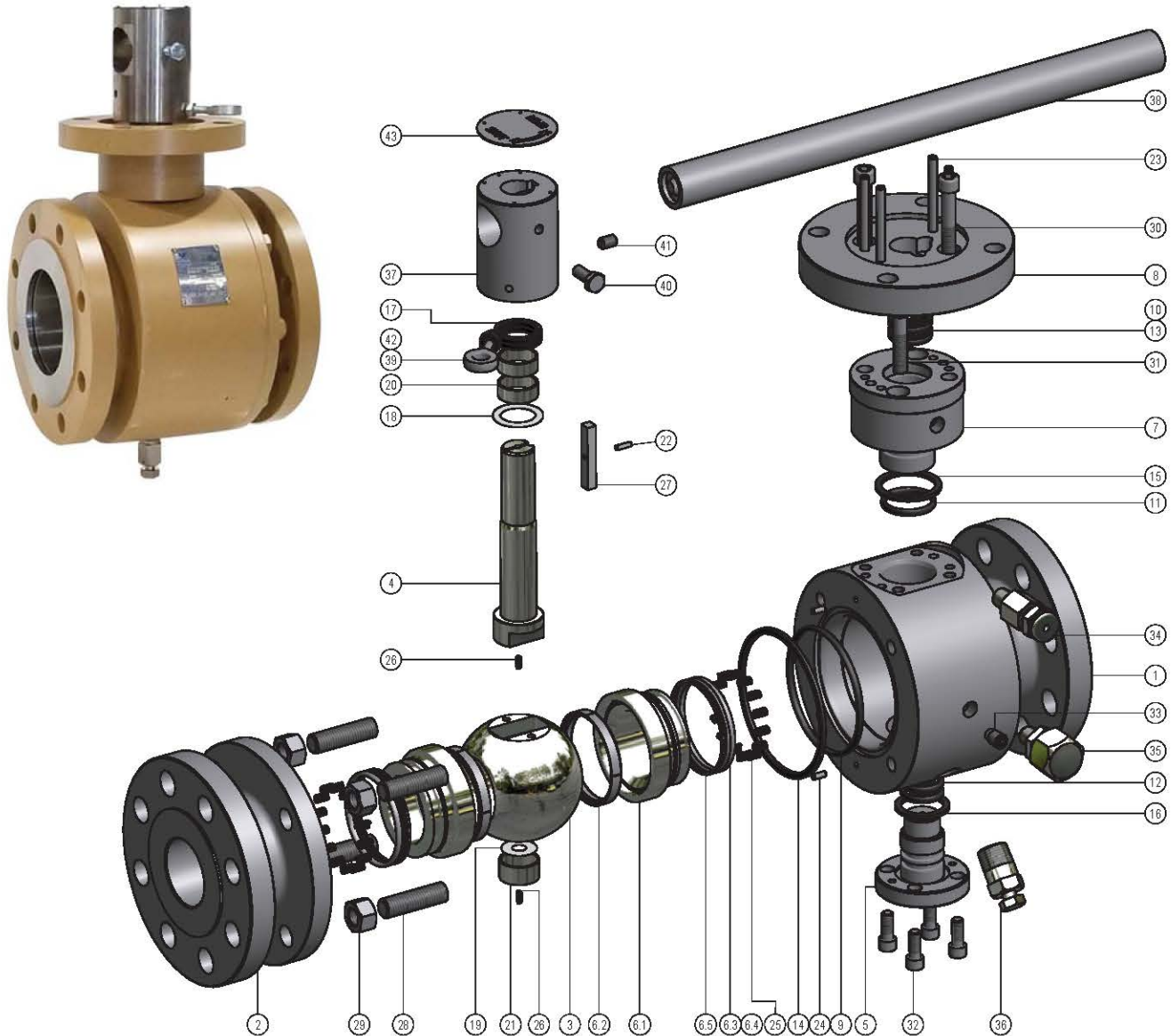
NOTE: Materials of construction are NACE compliant unless otherwise specified by customer.

ISV Series BT3B

2 pc Bolted Body, Exploded View, Component parts

CLASS
150 & 300
2" - 4"

ITEM NO.	PART DESCRIPTION	ITEM NO.	PART DESCRIPTION	ITEM NO.	PART DESCRIPTION
1	Body	12	O-Ring, Trunnion	28	Studs (Us) (End Cap/Body)
2	End Cap	13	Backup Ring, Stem	29	Hex Nut (Us)
3	Ball	14	Body/End Cap Gasket	30	Cap Screws (Us) (Top Plate/Gland)
4	Stem	15	Gland Gasket	31	Cap Screws (Us) (Gland/Body)
5	Trunnion	16	Trunnion Gasket	32	Cap Screws (Us) (Trun./Body)
6	Seat	17	Stem Packing	33	Internal Check Valve, Seat
6.1	Seat Ring	18	Thyrist Washer, Stem	34	Stem Injection Fitting
6.2	Seat Insert	19	Spacer-Ball Lower	35	Seat Injection Fitting
6.3	O-Ring, Seat	20	Bearing Ball-Upper	36	Drain Valve
6.4	Backup Ring, Seat	21	Bearing Ball-Lower	37	T Lever Adapter
6.5	Gasket Seat	22	Stem Key Pin	38	Handle
7	Gland	23	Alignment Pin	39	Lock Screw
8	Top Plate	24	Locating Pin, Body/End Cap	40	Bolt
9	Body/End Cap/Lipseal	25	Coil Spring, Seat	41	Set Screw-Stem Key
10	O-Ring, Stem	26	Spring, Anti-Static	42	Nut, Lock Device
11	O-Ring, Gland	27	Key	43	Nameplate



ISV Series BT3E

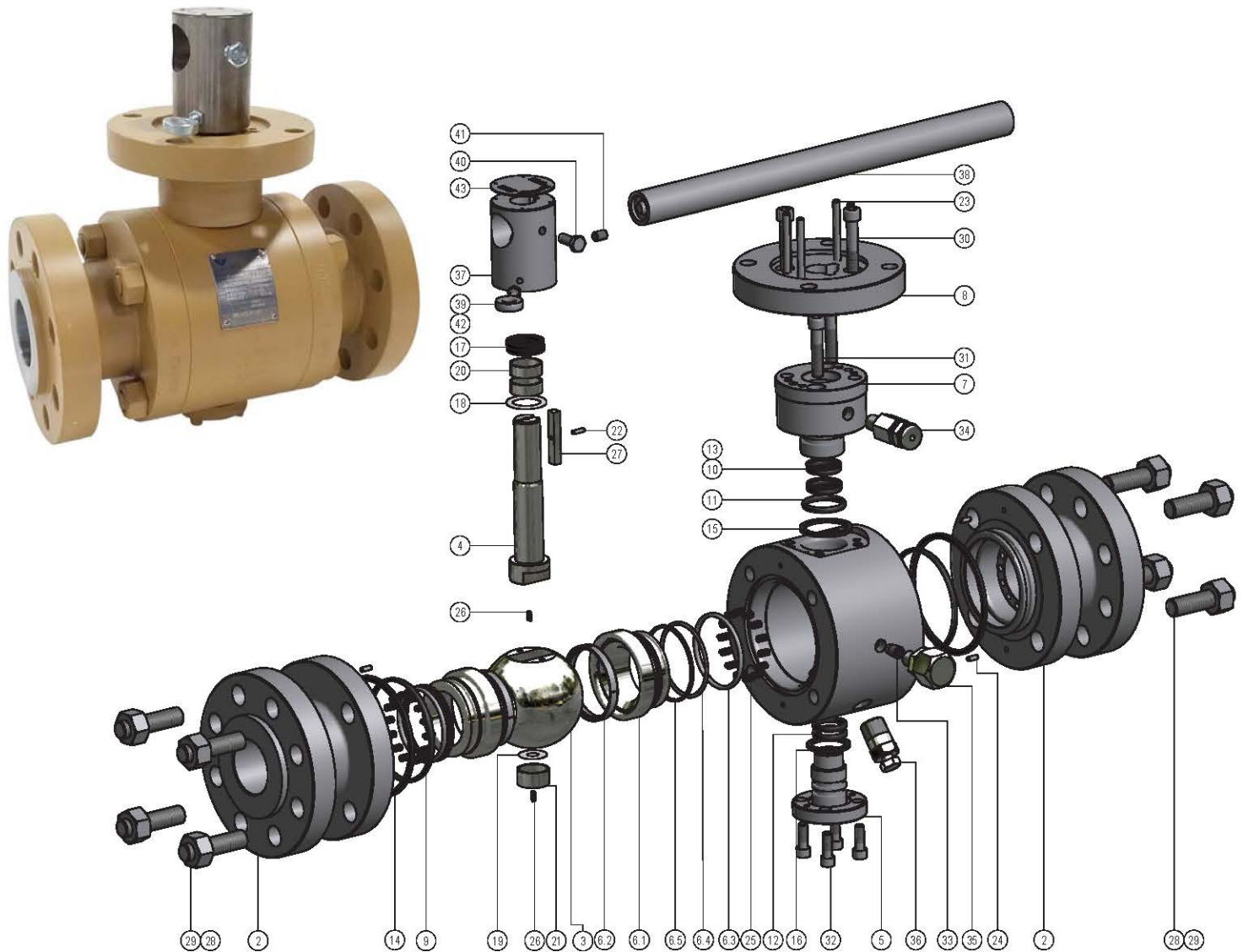
3 pc Bolted Body, Exploded View, Component parts

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

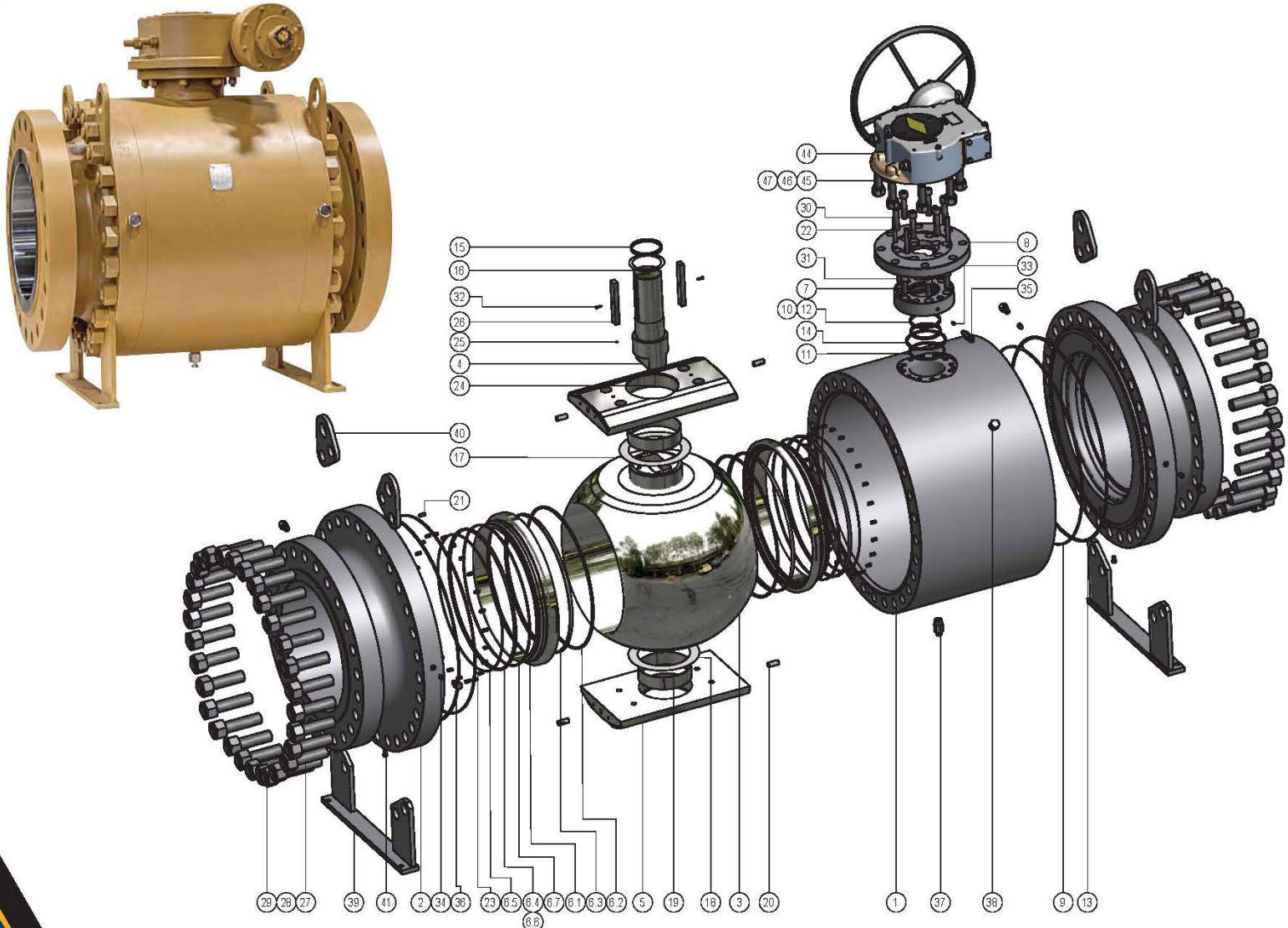
CLASS
600, 900
4"

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

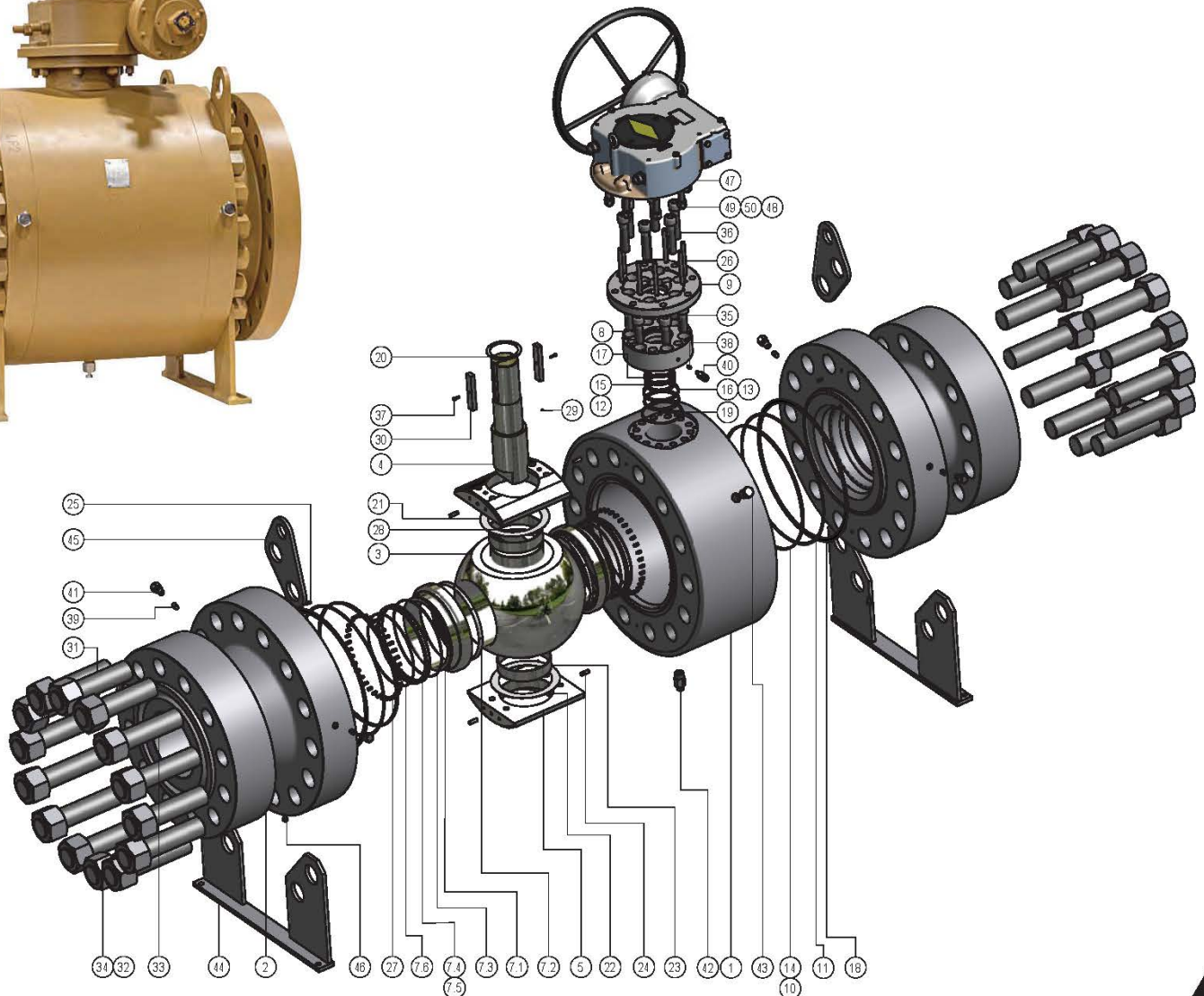


ISV Series BT3E

3 pc Bolted Body, Exploded View, Component parts

ALL CLASS
2500

ITEM NO.	PART DESCRIPTION	ITEM NO.	PART DESCRIPTION	ITEM NO.	PART DESCRIPTION
1	Valve Body	14	Backup Ring, Body/Endcap	33	Studs (Lifting Lug)
2	End Cap	15	Backup Ring, Gland	34	Nut
3	Ball	16	Backup Ring, Stem	35	Cap Screw (Gland/Body)
4	Stem	17	Stem Packing	36	Cap Screw (Top Plate/Gland)
5	Trunnion Plate	18	Gasket Body/End Cap	37	Set Screw-Stem Key
6	Seat	19	Gasket, Gland	38	Internal Check Valve-Stem
7	Seat	20	Thrust Washer, Stem	39	Internal Check Valve-Seat
7.1	Seat Ring	21	Spacer-Ball-Upper	40	Injection Fitting-Stem
7.2	Seat Insert	22	Spacer-Ball-Lower	41	Injection Fitting-Seat
7.3	Gasket Seal	23	Bearing Ball	42	Drain Valve
7.4	Backup Ring, Seal	24	Pin-Trunnion Plate	43	Vent Plug
7.5	O-Ring Seat	25	Body/End Cap Pin	44	Support Leg
7.6	O-Ring Seat, (Secondary)	26	Internal Threaded Pin	45	Lifting Eye
8	Gland	27	Alignment Pin	Vent	Vent Plug
9	Top Plate	28	Spring, Seat	47	Gear Box
10	O-Ring, End Cap (Lipseal)	29	Spring-Anti-Static	48	Stud-Gear
11	O-Ring, End Cap (Lipseal)	30	Key	49	Nut-Gear
12	O-Ring, Gland	31	Studs (End Cap/Body)	50	Washer-Gear
13	O-Ring Stem	32	Studs (Support Leg)		



ISV Series BT3G

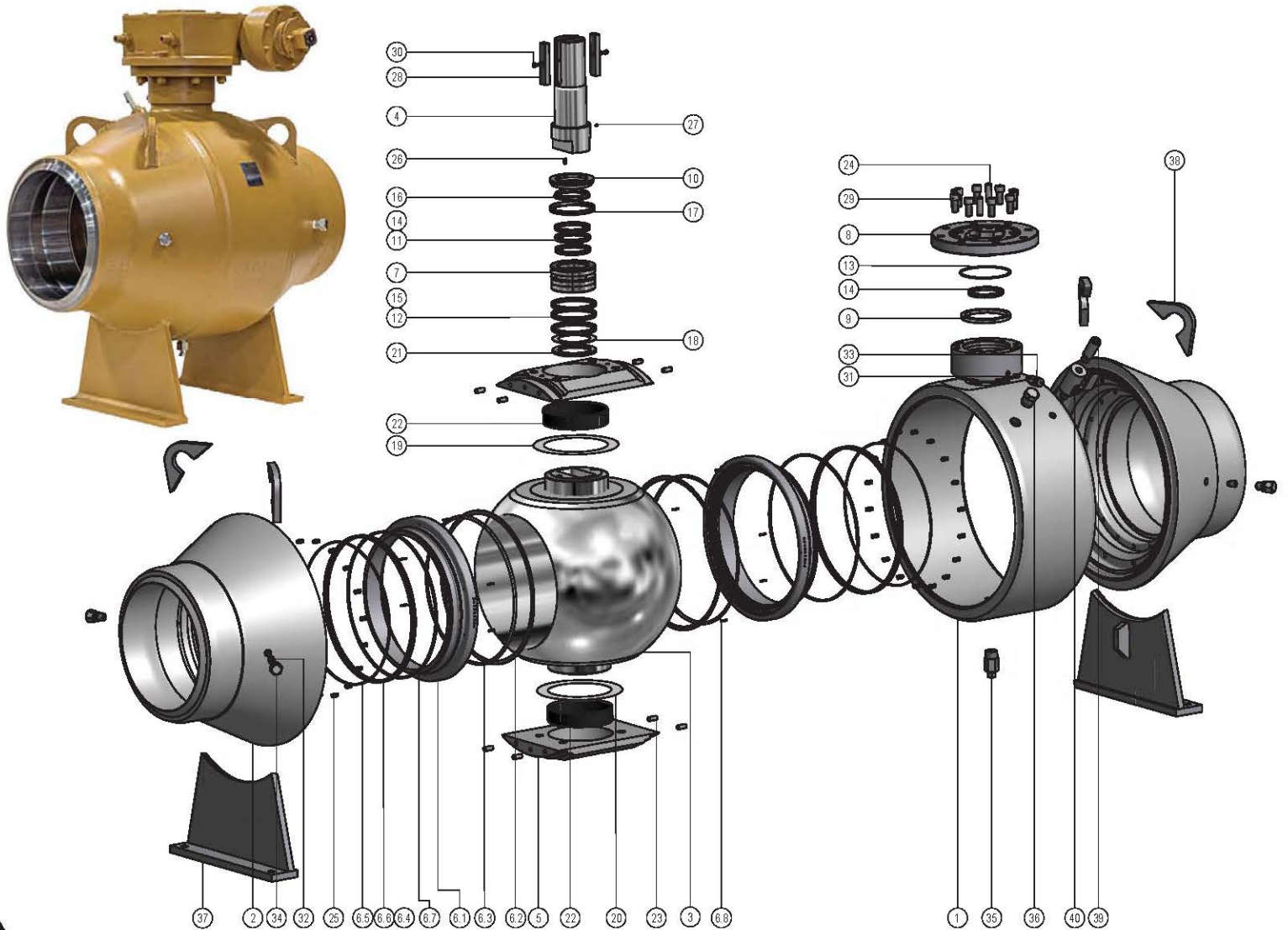
Fully Welded Body, Exploded View, Component parts

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

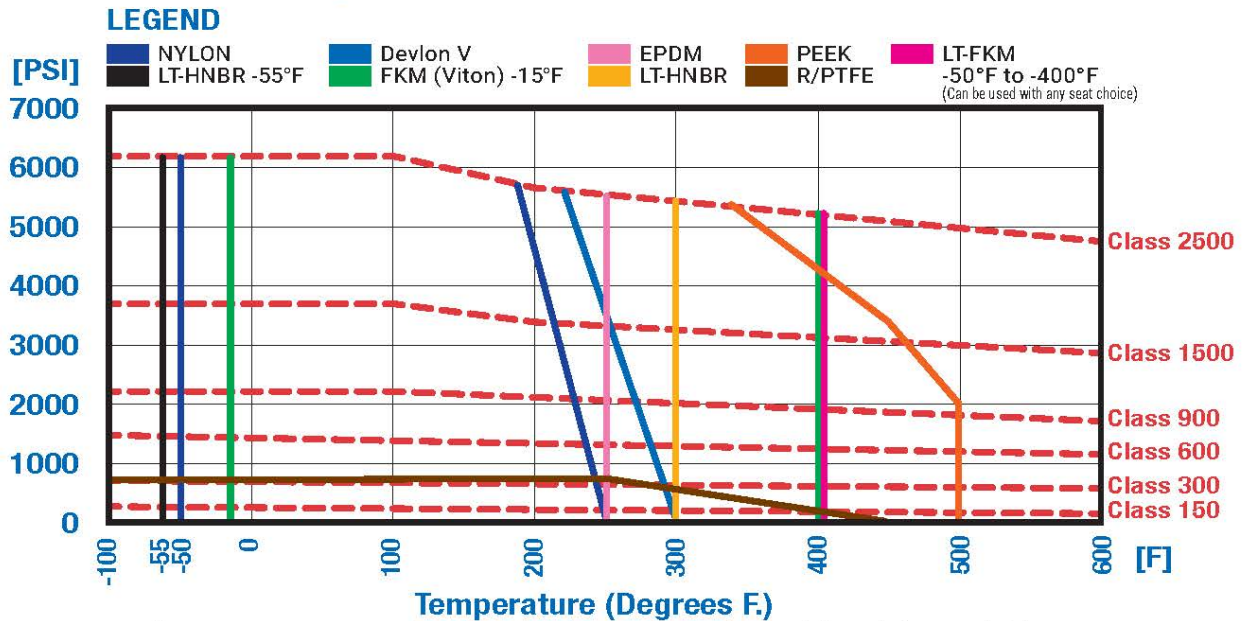
ITEM NO.	PART DESCRIPTION
9	Gasket Gland
10	O-Ring, Stem
11	O-Ring Seal
12	O-Ring Seal
13	O-Ring Seal
14	Gasket Gland
15	Stem Packing
16	Backup Ring, Stem
17	O-Ring Backup
18	Spacer-Ball-Upper
19	Spacer-Ball, Lower
20	Bearing Ball
21	Thrust Washer
22	Sliding Bearing (Composite)
23	Locating Pin
24	Alignment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

ITEM NO.	PART DESCRIPTION
25	Spring Seat
26	Spring, Anti Static
27	AntiStatic 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

Pressure Temperature Limits*

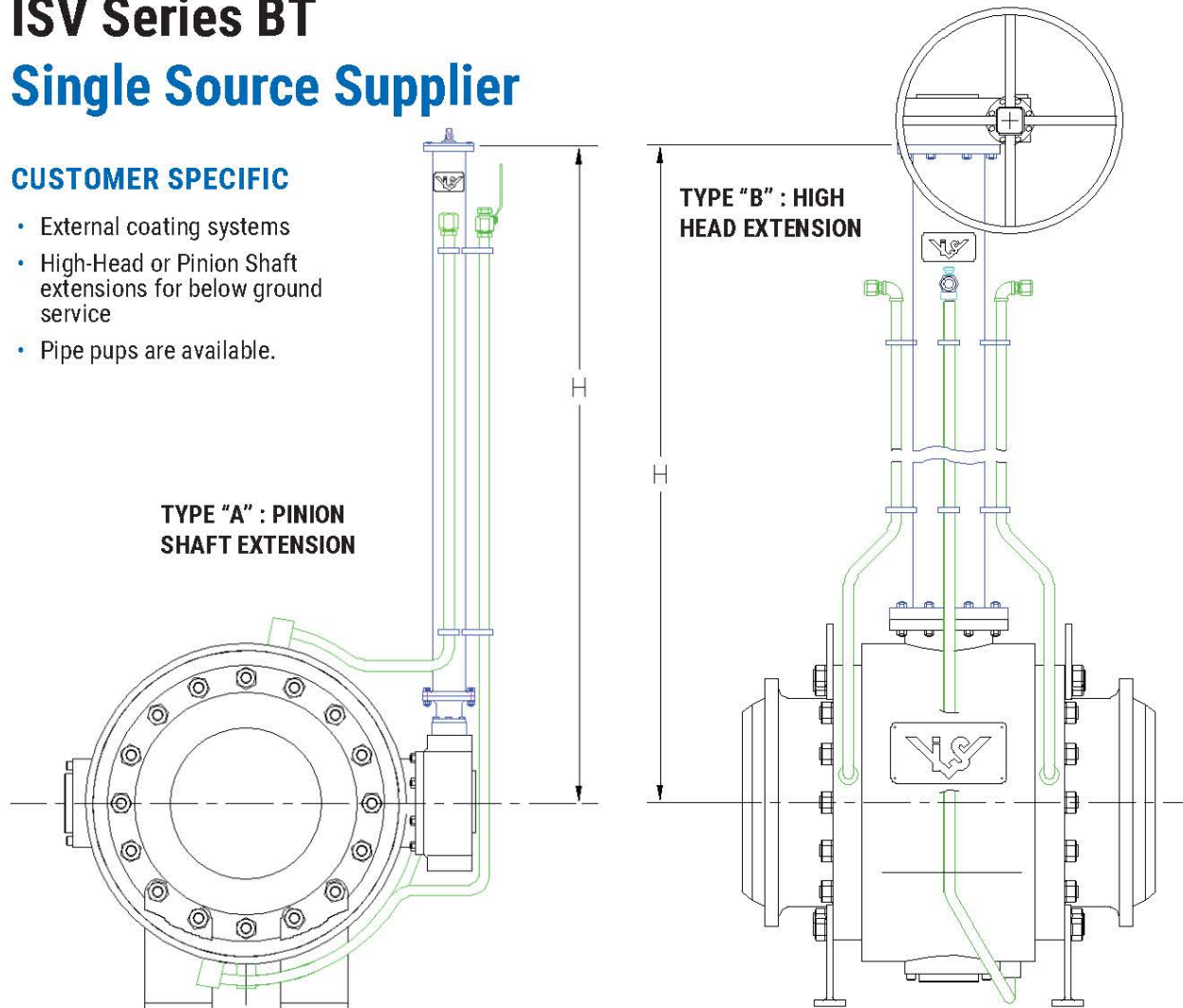


ISV Series BT

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.



Distributed by | Distribuido por :



ANYTHING
≈ FLOWS ≈

INFO@ANYTHINGFLOWS.COM

WWW.ANYTHINGFLOWS.COM

Flow Control , our passion ®

Life Flows on ™



SCAN ME