



Ultimate Craft Cast Advanced Industry

BALL VALVE OVERVIEW

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ABOUT US

KFTE VALVE is an ISO 9001 & CE certified company specializing in manufacturing industrial valves including ball valves, gate valves, globe valves, check valves, plug valves and butterfly valves in carbon steel, stainless steel, duplex stainless and alloy materials. Our products conform to the latest industry standards in accordance to ANSI, ASME and API.

KFTE today has over 400,000 square feet of manufacturing facilities. Through its conviction to provide only the finest quality products and services to match the need of our customers, KFTE has now established itself as a serious player in the valve business.

KFTE VALVE has sold worldwide in North America, Europe, South America, South Asia, Africa and the Middle East. We consider product quality and customer satisfaction as our highest priority. We look forward to new customer relationships by providing value, quality, customer service, honesty, integrity and the commitment to maintain product consistency with each and every order.



TRUNNION BALL VALVE

INTRODUCTION

FEATURES



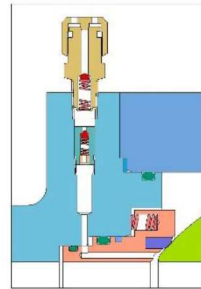
INTRODUCTION

A ball valve is a valve with a spherical disc, the part of the valve which controls the flow through it. The sphere has a hole, or port, through the middle so that when the port is in line with both ends of the valve, flow will occur. When the valve is closed, the hole is perpendicular to the ends of the valve, and flow is blocked.

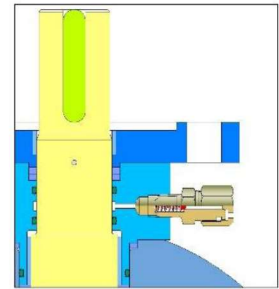
A trunnion ball valve has additional mechanical anchoring of the ball at the top and the bottom, suitable for larger and higher pressure services. To ensure tight sealing at low pressure, high-tensile springs force the seats against the ball while at higher pressure, the medium pressure pushes upstream seat towards the ball.

EMERGENCY SEALS

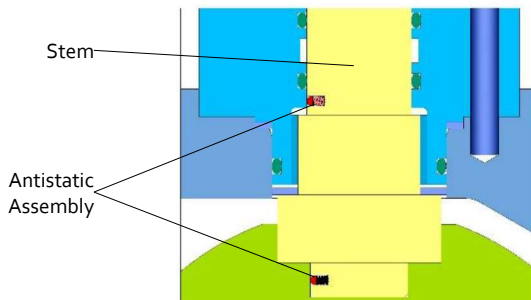
For trunnion mounted ball valve size NPS 6 (DN 150) and above, it comes with provisions for sealant injection on both the stem and seat while for sizes NPS 5 (DN 125) and below on body cavity. In case of failed underperformed seals, a temporary emergency seal can be achieved by injecting sealants.



Seat Sealant Valve



Stem Sealant Valve

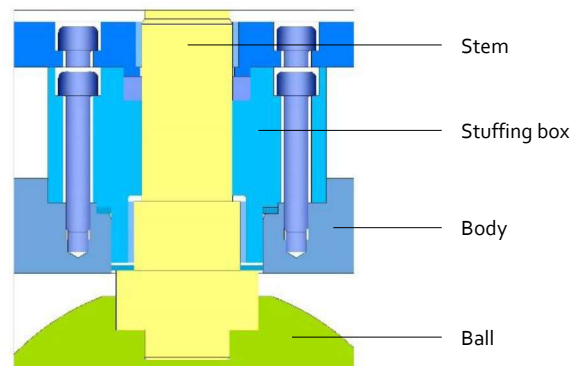


ANTI-STATIC

Because the ball and stem in a ball valve are suspended on non-metallic parts, i.e. the seat seal and stem seal, there is a possibility a static charge may build up on the stem-ball, a mechanical (antistatic metal spring and ball) is introduced in the design to maintain the metal-to-metal contact between the rotating ball/stem and the valve body which will ground any charges to the valve body.

BLOWOUT PROOF STEM

The valve stem is made with a shoulder at the bottom end. It's securely retained by the stuffing box, to avoid that the stem, under certain operating conditions, accidentally blows out. Other designs are available on request.

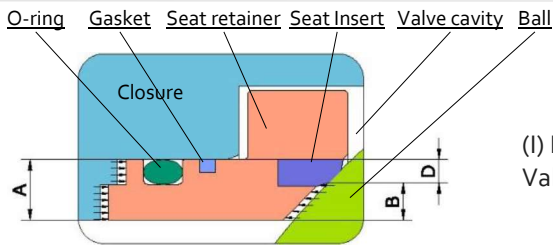


TRUNNION BALL VALVE

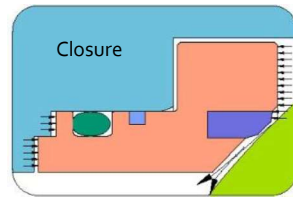
INTRODUCTION (CONT'D)

FEATURES

SINGLE PISTON EFFECT



(I) Downstream Valve Seat

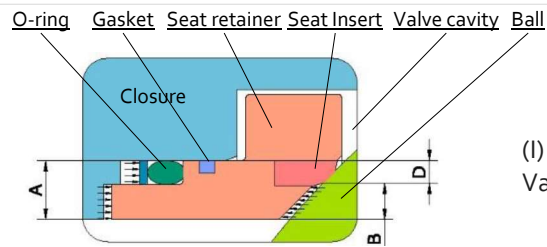


(II) Upstream Valve Seat

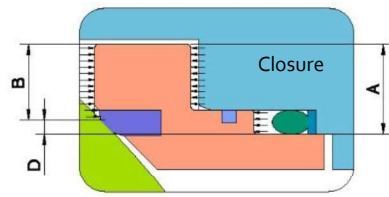
The difference in area (D) times the line pressure creates a "piston effect" force which pushes the seat against the ball surface resulting in a tight effect seal.

When the pressure in the valve cavity reaches a level that the total force from cavity acting on the seat is larger than the total force from upstream line pressure, the seat will be pushed away from the ball to relief the valve cavity pressure.

DOUBLE PISTON EFFECT



(I) Downstream Valve Seat



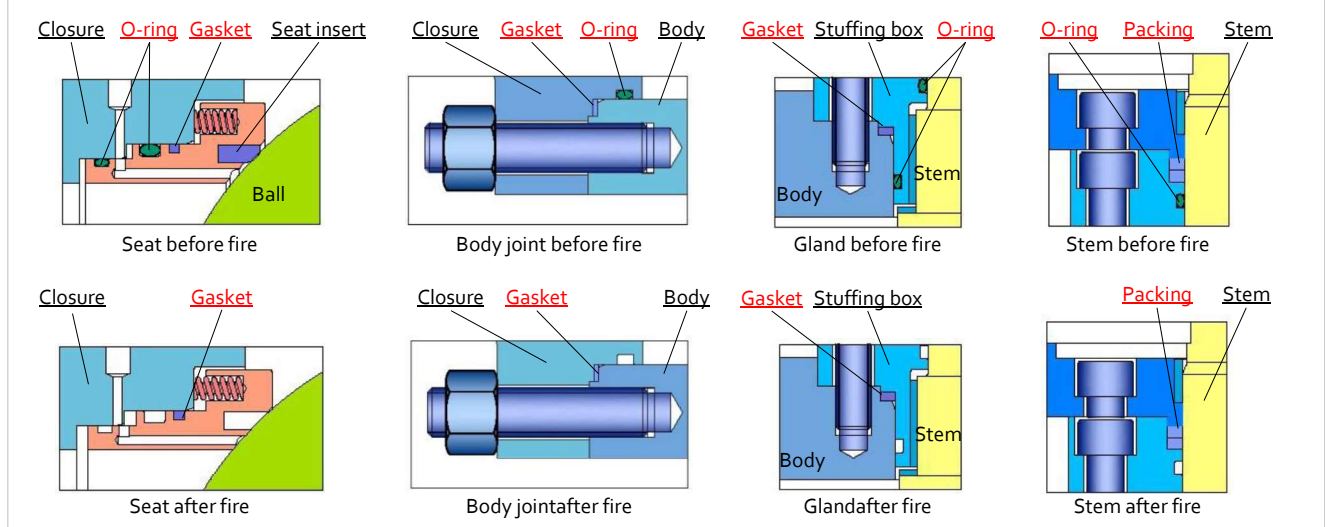
(II) Upstream Valve Seat

The different in area (D) times the line pressure creates a "piston effect" force which pushes the seat against the ball surface resulting in a tight seal.

The difference in the area (D) times the cavity pressure creates a "piston effect" force which pushes the seat against the ball surface resulting in a tight seal.

FIRE SAFE DESIGN

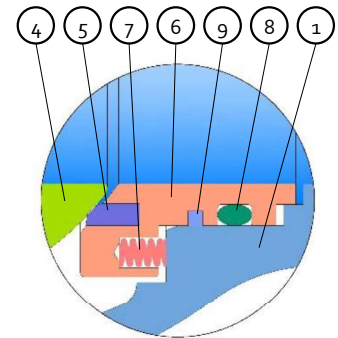
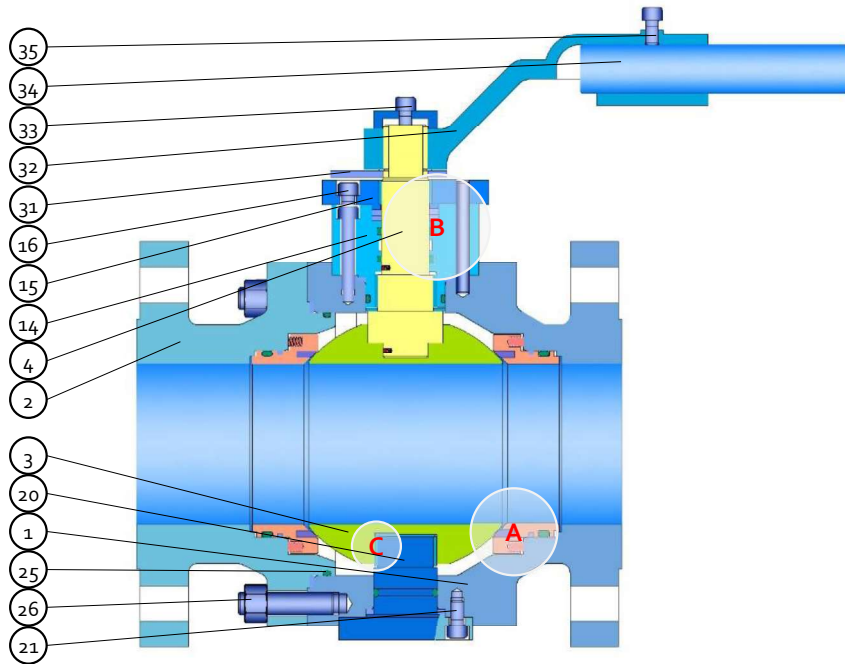
During a fire, non-metallic soft material will be burnt, subsequently seat leakage or external leakage may occur and cause the fire spread or contaminate the environment. KFTE ball valves are fire tested in accordance with API 6FA or API 607, witnessed and certified by TUV SUD. If valve is not covered according to the standards, they are designed to be fire safe.



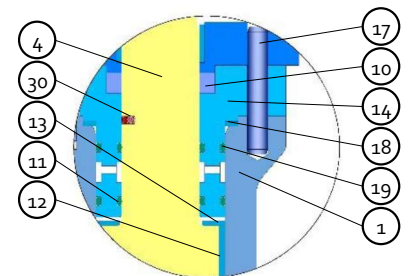
TRUNNION BALL VALVE

OVERVIEW

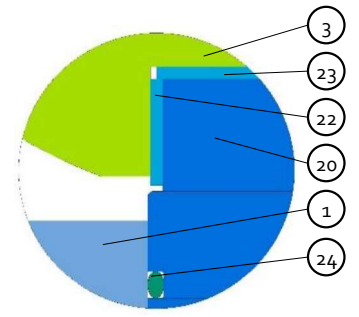
2-PIECE SPLIT BODY



A

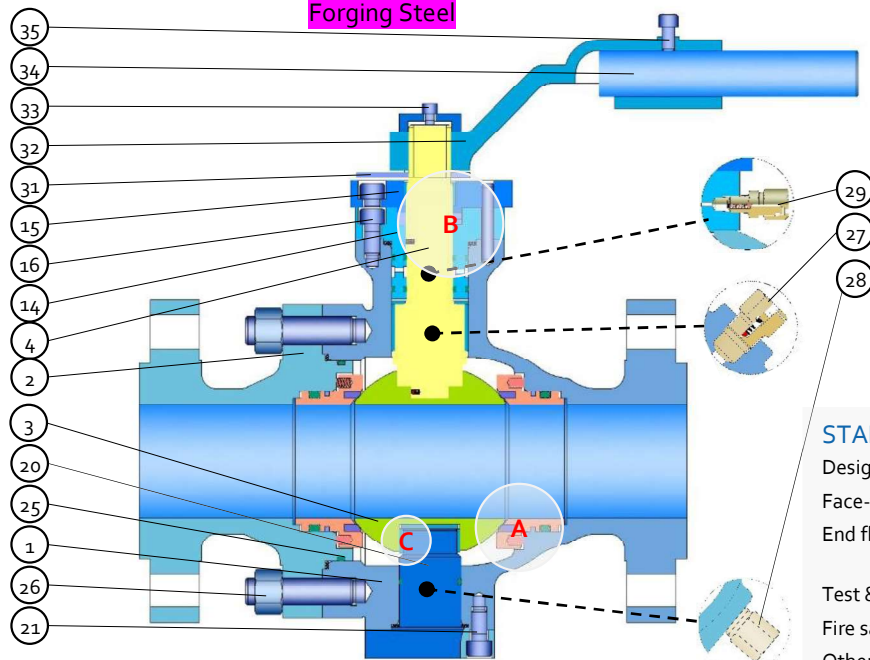


B



C

Forging Steel



STANDARDS

Design& manufacture	API 6D, ISO 14313, ISO 17292
Face-to-face	API 6D, ASME B16.10
End flanges	ASME B16.5, ASME B16.47 MSS SP-44 (NPS 22 Only)
Test & inspection	API 6D, API 598
Fire safe	API 6FA, API 607
Other	NACE MR01-75, MR 0103 ISO 15848, API 622, API 624

PART LIST

Casting Steel

1 Body	13 Thrust washer	25 Body seal
2 Closures	14 Stuffing box	26 Stud bolt & nut
3 Ball	15 Gland cover	27 Vent valve
4 Stem	16 Gland socket bolt	28 Drain plug
5 Seat insert	17 Gland pin	29 Stem sealant valve
6 Seat retainer	18 Gland seal	30 Antistatic assembly
7 Seat spring	19 Gland O-ring	31 Stopper
8 Seat O-ring	20 Trunnion	32 Lever
9 Seat seal	21 Trunnion socket bolt	33 Lever lock screw
10 Stem packing	22 Trunnion bushing	34 Extension pipe
11 Stem O-ring	23 Trunnion thrust washer	35 Pipe lock screw
12 Stem bushing	24 Trunnion O-ring	

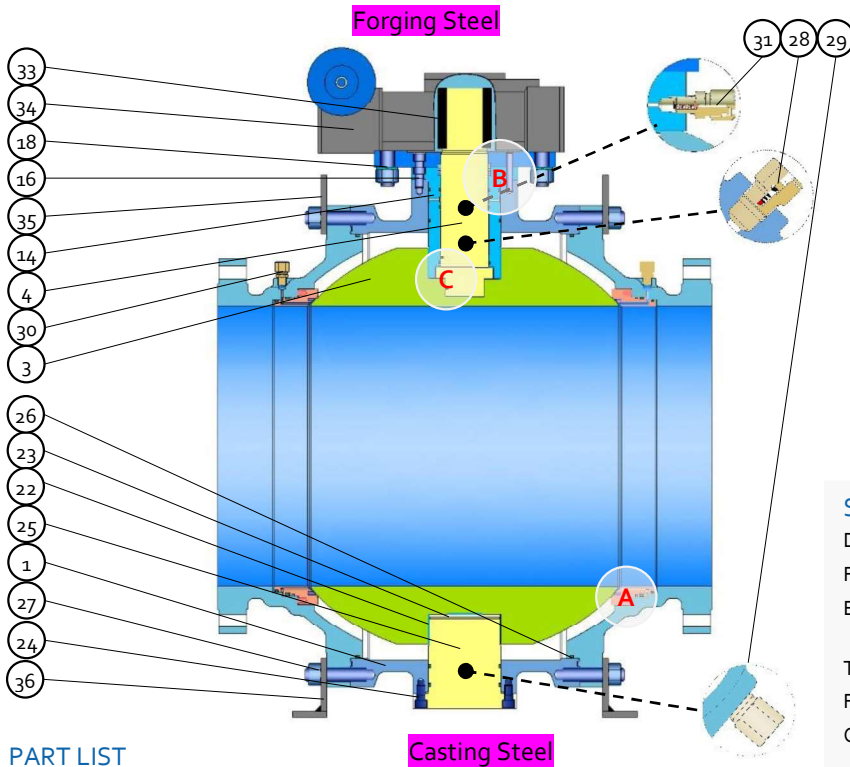
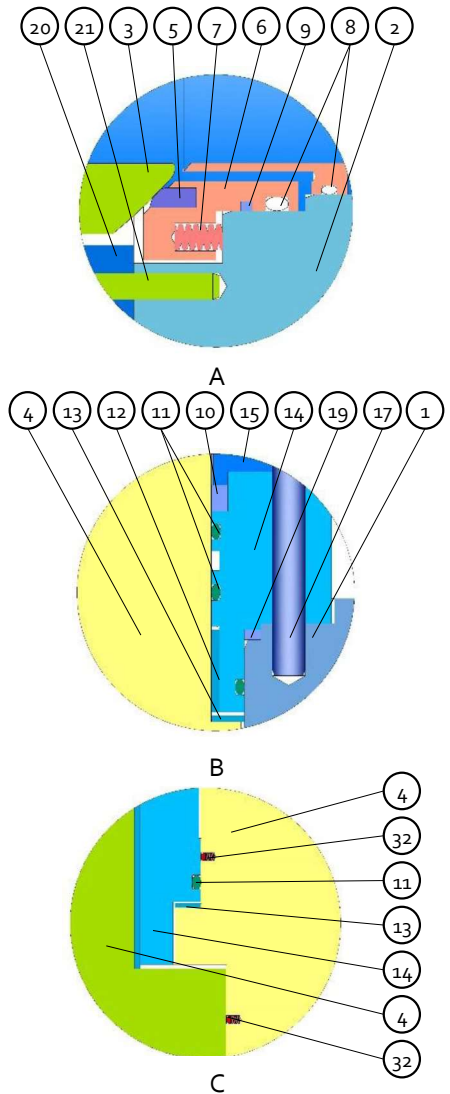
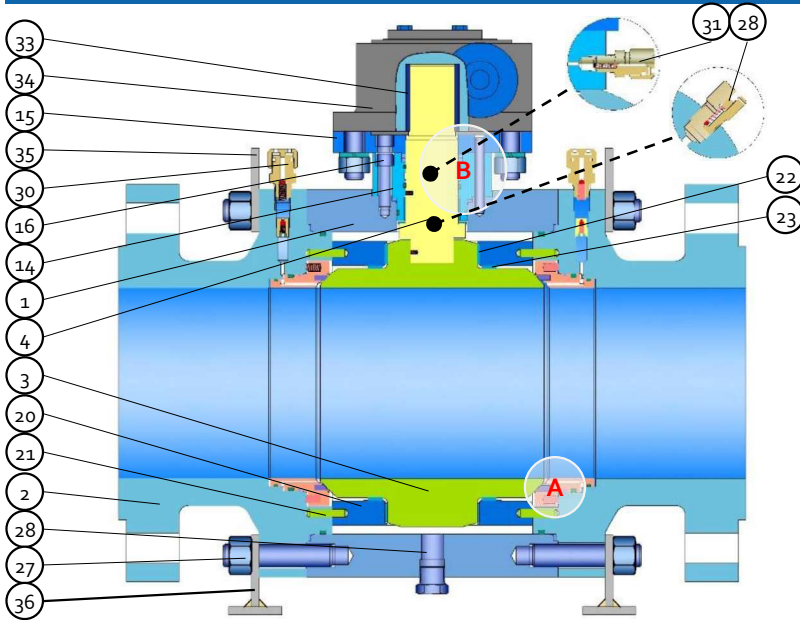
TYPICAL MATERIALS

Body/Closures	A105, A182 F304, F304L, F316, F316L, F51, F53, A350 LF2, LF3, LF5, Monel, Inconel, Hastelloy (Forging) A216 WCB, A351 CF3, CF8, CF3M, CF8M, A995 4A, 5A, A352 LCB, LCC, LC2 (Casting)
Ball	CS+ENP, A182 F304, F304L, F316, F316L, F51, F53, CS+TCC, CS+Ni60
Seat retainer	CS+ENP, A182 F304, F304L, F316, F316L, F51, F53, CS+TCC, CS+Ni55
Seat insert	PTFE, RPTFE, Nylon, Devlon, PEEK
Stem	A182 F6a, F316, F51, A105+ENP, AISI 4140+ENP, 17-4PH
Packing	Graphite, PTFE, RPTFE
O-ring	Viton, NBR, HNBR, AFLAS

TRUNNION BALL VALVE

OVERVIEW

3-PIECE SPLIT BODY



PART LIST

- | | | |
|-----------------|-------------------------|------------------------|
| 1 Body | 13 Thrust washer | 25 Trunnion |
| 2 Closures | 14 Stuffing box | 26 Body seal |
| 3 Ball | 15 Gland cover | 27 Stud bolt & nut |
| 4 Stem | 16 Gland socket bolt | 28 Vent valve |
| 5 Seat insert | 17 Gland pin | 29 Drain plug |
| 6 Seat retainer | 18 Gland bolt & nut | 30 Seat sealant valve |
| 7 Seat spring | 19 Gland seal | 31 Stem sealant valve |
| 8 Seat O-ring | 20 Trunnion support | 32 Antistatic assembly |
| 9 Seat seal | 21 Trunnion support pin | 33 Drive key |
| 10 Stem packing | 22 Bushing | 34 Gearbox assembly |
| 11 Stem O-ring | 23 Thrust washer | 35 Lifting lug |
| 12 Stem bushing | 24 Trunnion socket bolt | 36 Supporting leg |

STANDARDS

Design& manufacture	API 6D, ISO 14313, ISO 17292
Face-to-face	API 6D, ASME B16.10
End flanges	ASME B16.5, ASME B16.47 MSS SP-44 (NPS 22 Only)
Test & inspection	API 6D, API 598
Fire safe	API 6FA, API 607
Other	NACE MR01-75, MR 0103 ISO 15848, API 622, API 624

TYPICAL MATERIALS

Body/Closures	A105, A182 F304, F304L, F316, F316L, F51, F53, A350 LF2, LF3, LF5, Monel, Inconel, Hastelloy (Forging) A216 WCB, A351 CF3, CF8, CF3M, CF8M, A995 4A, 5A, A352 LCB, LCC, LC2 (Casting)
Ball	CS+ENP, A182 F304, F304L, F316, F316L, F51, F53, CS+TCC, CS+Ni60
Seat retainer	CS+ENP, A182 F304, F304L, F316, F316L, F51, F53, CS+TCC, CS+Ni55
Seat insert	PTFE, RPTFE, Nylon, Devlon, PEEK
Stem	A182 F6a, F316, F51, A105+ENP, AISI 4140+ENP, 17-4PH
Packing	Graphite, PTFE, RPTFE
O-ring	Viton, NBR, HNBR, AFLAS

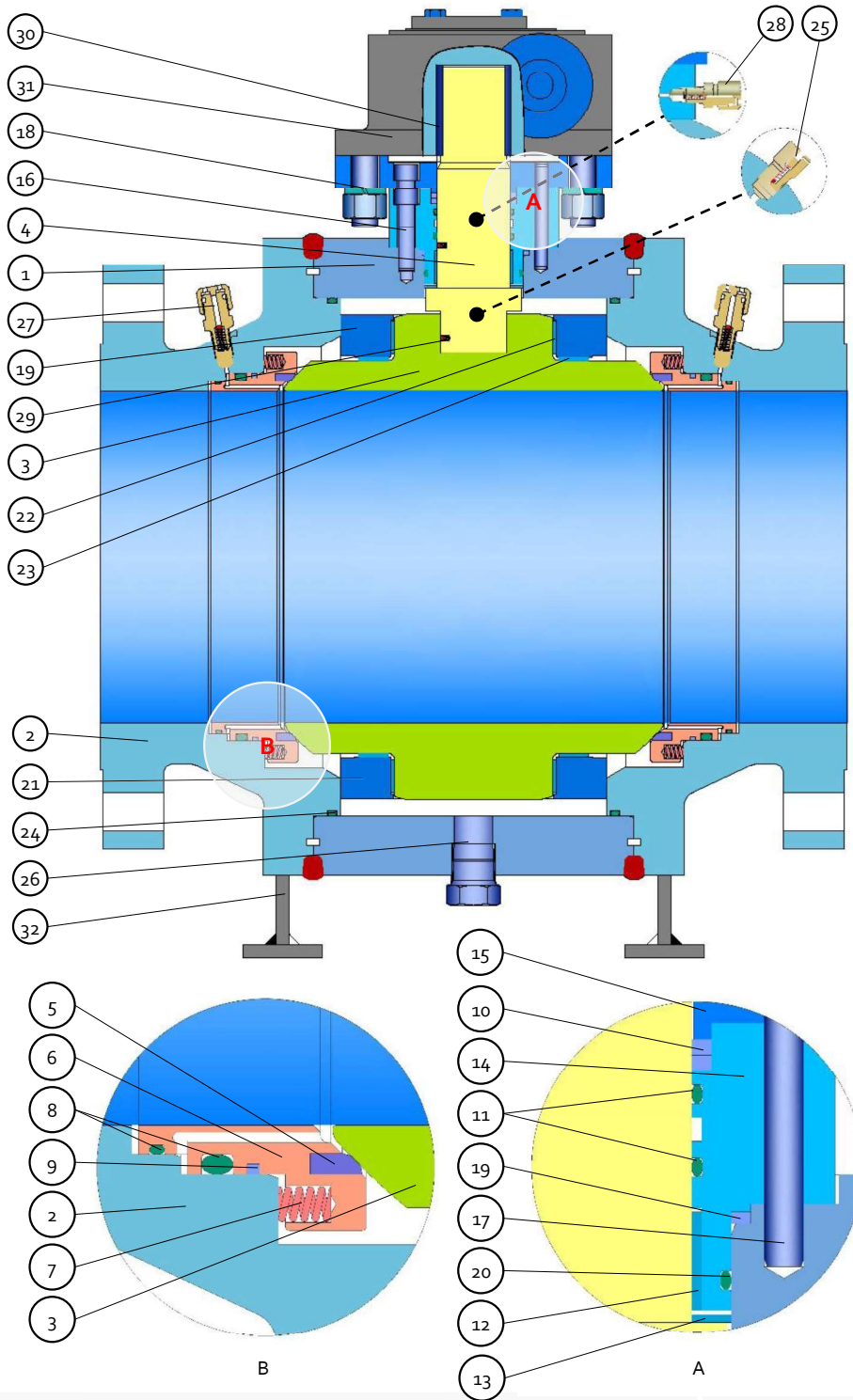
KFTE VALVE

Ultimate Craft Cast Advanced Industry

TRUNNION BALL VALVE

OVERVIEW

WELDED BODY



PART LIST

- | | |
|----|--------------------------------|
| 1 | Body |
| 2 | Closures |
| 3 | Ball |
| 4 | Stem |
| 5 | Seat Insert |
| 6 | Seat retainer |
| 7 | Seat spring |
| 8 | Seat O-ring |
| 9 | Seat seal |
| 10 | Stem packing |
| 11 | Stem O-ring |
| 12 | Stem bushing |
| 13 | Thrust washer |
| 14 | Stuffing box |
| 15 | Gland cover |
| 16 | Gland socket bolt |
| 17 | Gland pin |
| 18 | Gland bolt & nut |
| 19 | Gland seal |
| 20 | Gland O-ring |
| 21 | Trunnion support |
| 22 | Trunnion support bushing |
| 23 | Trunnion support thrust washer |
| 24 | Body seal |
| 25 | Vent valve |
| 26 | Drain plug |
| 27 | Seat sealant valve |
| 28 | Stem sealant valve |
| 29 | Antistatic assembly |
| 30 | Drive key |
| 31 | Gearbox assembly |
| 32 | Supporting leg |

TYPICAL MATERIALS

Body/Closures	A105, A182 F304, F304L, F316, F316L, F51, F53 A350 LF2, LF3, LF5, Monel, Inconel, Hastelloy (Forging only)
Ball	CS+ENP, A182 F304, F304L, F316, F316L, F51, F53 CS+TCC, CS+Ni60
Seat retainer	CS+ENP, A182 F304, F304L, F316, F316L, F51, F53 CS+TCC, CS+Ni55
Seat insert	PTFE, RPTFE, Nylon, Devlon, PEEK
Stem	A182 F6a, F316, F51, A105+ENP, AISI 4140+ENP, 17-4PH
Packing	Graphite, PTFE, RPTFE
O-ring	Viton, NBR, HNBR, AFI, AS

STANDARDS

Design& manufacture	API 6D, ISO 14313, ISO 17292
Face-to-face	API 6D, ASME B16.10
End flanges	ASME B16.5, ASME B16.47 MSS SP-44 (NPS 22 Only)
Test & inspection	API 6D, API 598
Fire safe	API 6FA, API 607
Other	NACE MR01-75, MR 0103 ISO 15848, API 622, API 624



INTRODUCTION

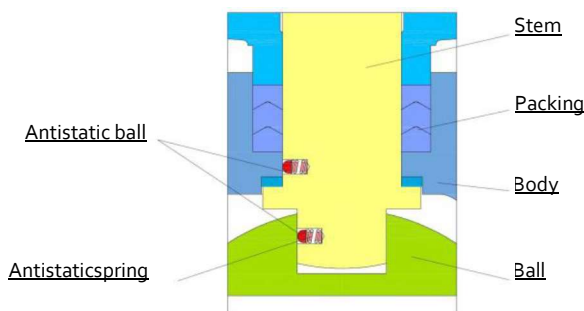
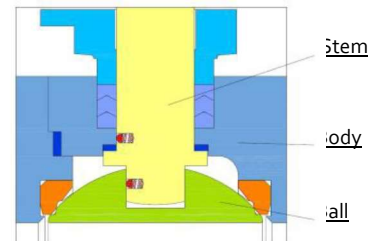
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BLOWOUT PROOF STEM

The valve stem is made with a shoulder at the bottom end. It's securely retained by the valve body, to avoid that the stem, under certain operating conditions, accidentally blows out. Other designs are available on request.

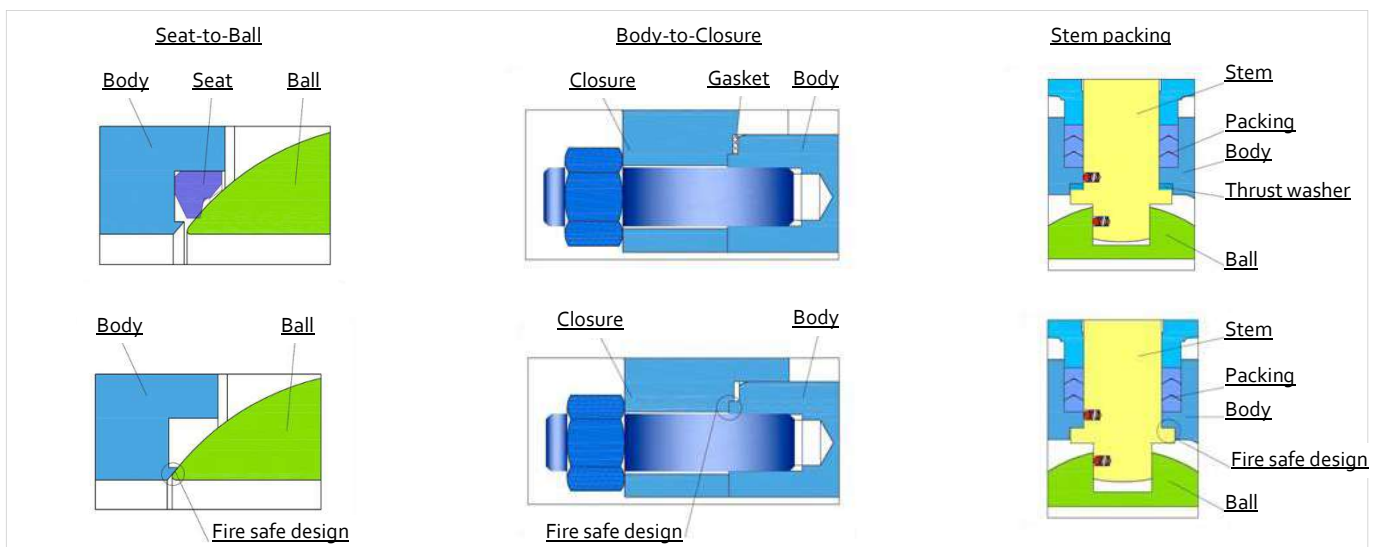
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FIRE SAFE DESIGN

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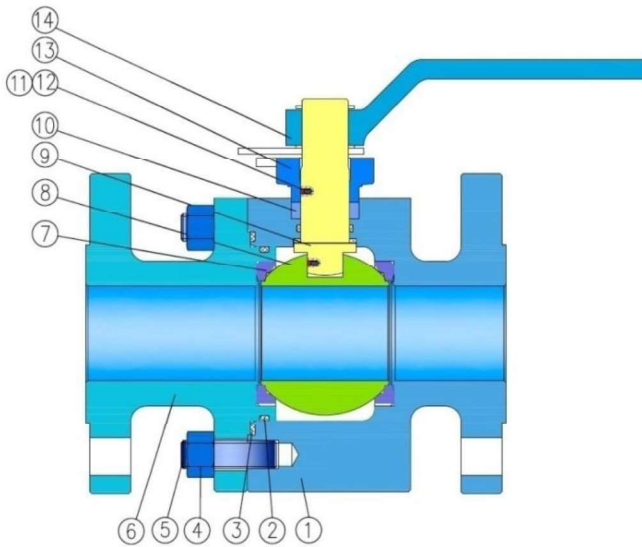


FLOATING BALL VALVE

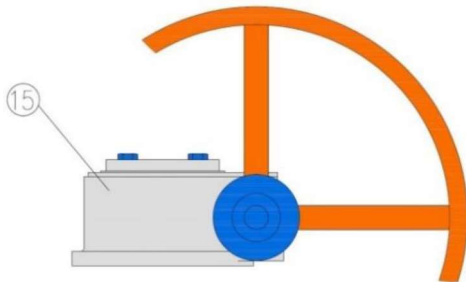
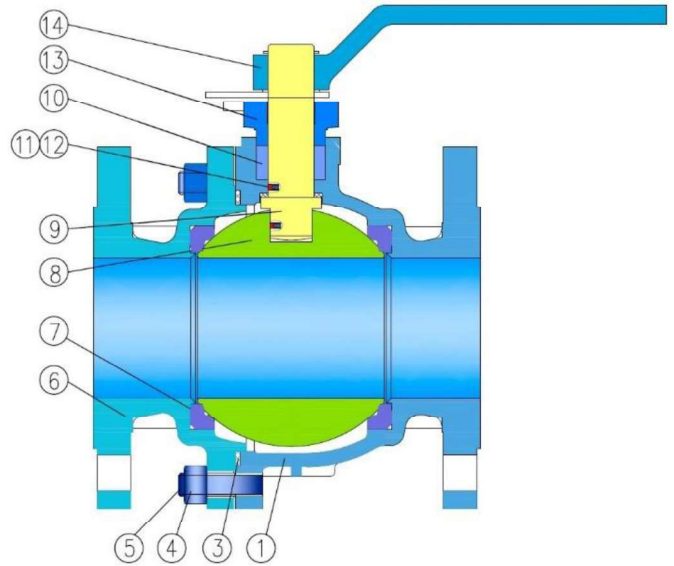
OVERVIEW

2-PIECE SPLIT BODY

Forge Steel



Casting Steel



STANDARDS

Design & manufacture	API 6D, API 608, ISO 14313
Face-to-face	API 6D, ASME B16.10
End Dimension	ASME B16.5 (RF, RTJ) ASME B16.25 (BW)
Test & inspection	API 6D, API 598
Fire safe	API 6FA, API 607
Other	NACE MR 01-75, MR 0103

PART LIST

1 Body	9 Stem
2 O-ring	10 Packing
3 Gasket	11 Anti-static Spring
4 Nut	12 Anti-static Ball
5 Stud	13 Gland Flange
6 Closure	14 Lever
7 Seat	15 Gearbox
8 Ball	

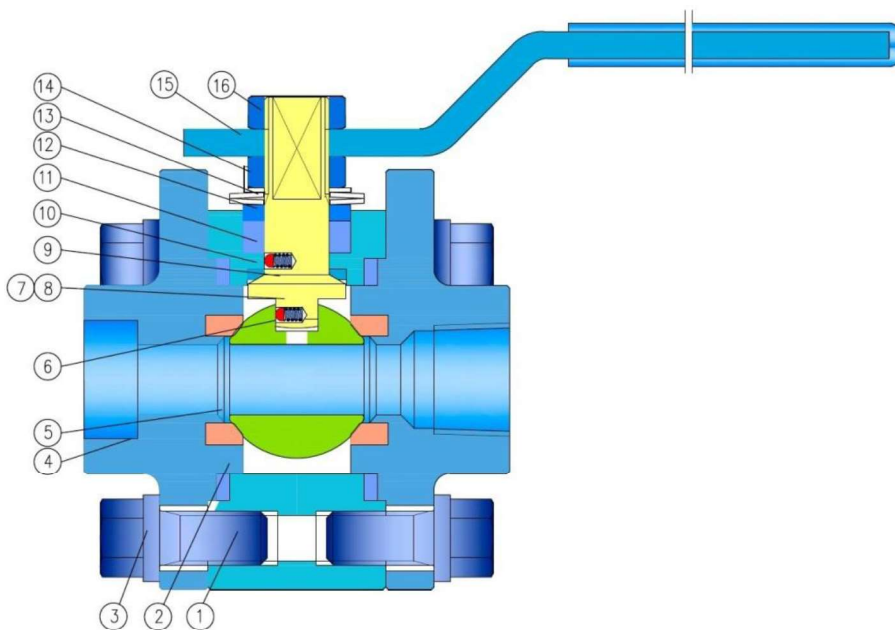
TYPICAL MATERIALS

Body/Closures	(Forging) A105, A182 F304, F304L, F316, F316L, F51, F53, A350 LF2, LF3, LF5, Inconel, Hastelloy, Monel (Casting) A216 WCB, A351 CF3, CF8, CF3M, CF8M, A352 LCB, LCC, LC2, A995 4A, 5A,
Ball	CS+ENP, A182 F304, F304L, F316, F316L, F51, F53, CS/SS+TCC, CS/SS+Ni60
Seat retainer	CS+ENP, A182 F304, F304L, F316, F316L, F51, F53, CS/SS+TCC, CS/SS+Ni55
Seal Ring	PTFE, RPTFE, PCTFE, Devlon, PEEK
Stem	A182 F6a, F316, F51, A105+ENP, AISI 4140+ENP, 17-4PH, XM-19
Packing	Graphite, PTFE, RPTFE
O-ring	Viton, HNBR, FVMQ, AFLAS

FLOATING BALL VALVE

OVERVIEW

3-PIECE SPLIT BODY



PART LIST

- 1 Body
- 2 Gasket
- 3 Bolt
- 4 Closure
- 5 Seat
- 6 Ball
- 7 Anti-static Spring
- 8 Anti-static Ball
- 9 Stem
- 10 Thrust Washer
- 11 Packing
- 12 Packing Gland
- 13 Belleville Spring
- 14 Stopper Washer
- 15 Lever
- 16 Nut

Floating Ball with 3 Piece design is provided in forged material in long pattern and short pattern.

Short Pattern: Mainly applies for soft seated with lever operation.

Long Pattern: Can be applied for metal seat, stem extension, or bare stem, or actuated ball valves, or full welded and butt welded;

STANDARDS

Design & manufacture	API 608, ISO 17292, ASME B16.34,
Face-to-face	MFG' STD
End Dimension	ASME B1.20.1 (NPT) ASME B16.11 (SW) ASME B16.25 (BW) Or ASME B36.10(BW)
Test & inspection	API 598
Fire safe	API 6FA, API 607
Other	NACE MR 01-75, MR 0103

TYPICAL MATERIALS

Body/Closures	(Forging) A105, A182 F304, F304L, F316, F316L, F51, F53, A350 LF2, LF3, LF5, Inconel, Hastelloy, Monel
Ball	A182 F304, F304L, F316, F316L, F51, F53, CS/SS+TCC, CS/SS+Ni60
Seal Ring	PTFE, RPTFE, PCTFE, Devlon, PEEK
Stem	F316, F51, 17-4PH, XM-19
Packing	Graphite, PTFE, RPTFE
O-ring	Viton, HNBR, FVMQ, AFLAS