

API6D, SIDE ENTRY TRUNNION MOUNTED BALL VALVE
 FLANGED END/BUTT WELDING END
 CLASS (150-2500)#

TBV TYPE

SPECIFICATIONS:

- * Design Standard:
 - API 6D
 - ASME B16.34
- * Face to Face:
 - API 6D ,
 - ANSI B16.10
- * End Connection:
 - FLANGED: RF/RTJ,ANSI B16.5/ANSI B16.47
 - BUTT WELDING: BW,ANSI B16.25
- * Test: API 6D ,API 598.
- Marking: MS SP-25
- * Body Material: Body Material: WCB, A105, CF8,CF8M,CF3,CF3M,F304,F316,F304L,F316L,LCB,LF2,F51
- * Ball Coating: ENP,Tungsten Carbide Coat (TCC), Chrome Carbide Coat (CCC)
- * Actuation: Lever, Worm Gear, Electrical, Pneumatic,Hydraulic

FEATURES:

- * Full Bore, May Allow Pipeline Cleaning (PIGGABLE)
- * Fire Safe Design to API 6FA/607.
- * Trunnion Mounted. Side Entry/Top Entry. Independent Ball & Stem
- * Soft Insert Seat/Metal-to-Metal Seat
- * Double Block & Bleed Function. With Vent and Drain Hole
- * Full Bore/Reduced Bore.
- * Cast 2pcs Bolted Body
- * Forged 3pcs Bolted or Welded Body
- * Anti-Blowout Stem.
- * Anti-static Device
- * Grease Injection on Stem & Seat
- * Extended Bonnet or Stem Optional

MATERIALS

BODY & BONNET	<input type="text"/>
BALL	<input type="text"/>
TRUNNION	<input type="text"/>
STEM	<input type="text"/>
SEAT	<input type="text"/>
SEAT INSERT	<input type="text"/>
O-RING	<input type="text"/>



CE APPROVED

SIZE:

(2 – 36)“	FULL PORT	Class 150
(2 – 32)“	FULL PORT	Class 300
(2 – 30)“	FULL PORT	Class 600
(2 – 24)“	FULL PORT	Class 900
(2 – 16)“	FULL PORT	Class 1500
(2 – 12)“	FULL PORT	Class 2500

HOW TO ORDER

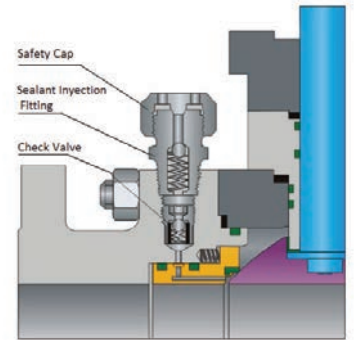
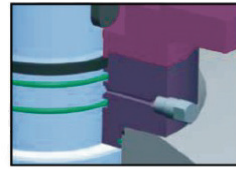
TBV- SIZE - RATINGS - END CONNECTION

This is widely used in valves with high pressure and big sizes. Trunnion ball valve has floating seats. The seats move with the medium pressure to tight the ball and seal ring to ensure sealing reliability. Ball of Trunnion ball valve is fixed, it does not move with medium pressure. Bearings could be mounted in top shaft and bottom shaft, which reduce operation torque.

Sealant Injection Device.

Sealant Injection Device.- To decrease the operation torque, increasing sealing reliability, lubricated ball valves are adopted in recent years; Trunnion mounted ball valves are provided with devices for Sealant injection, which are on both the stem and seat for the Trunnion ball valves of DN>150mm (NPS6), and in the body cavity for the valve of DN<125mm.

A special sealant is injected between sealing faces of lubricated ball valve to create a layer increasing the sealing reliability, while decreasing the operation torque; which is better for high pressure in big sized ball valves.



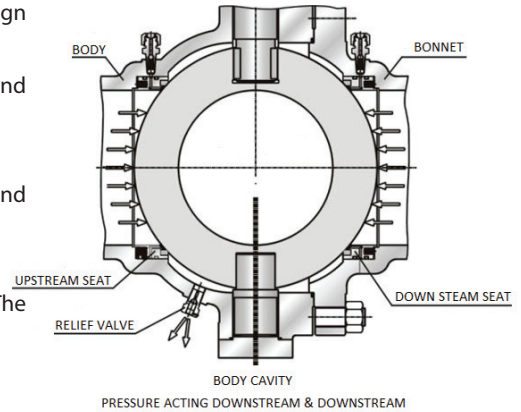
Double Block and Bleed.

Double Block and Bleed. - Trunnion Ball Valves features the front ball Sealing Design structure.

Each seat of the ball valve can separately cut-off the medium at both upstream and downstream, to achieve double block function.

When the ball valve is closed, body cavity is segregated from both Upstream and downstream even there is pressure at both ends.

The medium left in the body cavity could increase the pressure to propel the seats. The medium could be bled out through the relief valve to ensure valve safety.



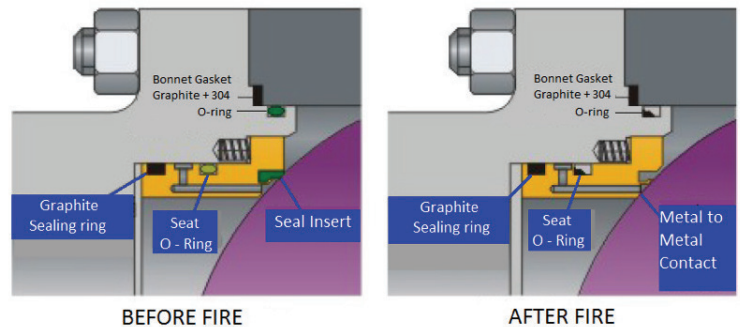
Fire safe design.

Fire safe design. - In a fire situation, the non-metal material parts such as:

- Seat sealing rings of PTFE or NYLON
- Stem O-Ring's
- Body & Bonnet Sealing Gasket's

May be damaged due to high temperature

An auxiliary Metal to Metal or Graphite Seal is provided to effectively prevent both internal and external valve leakage. Fire safe design for Trunnion ball valves



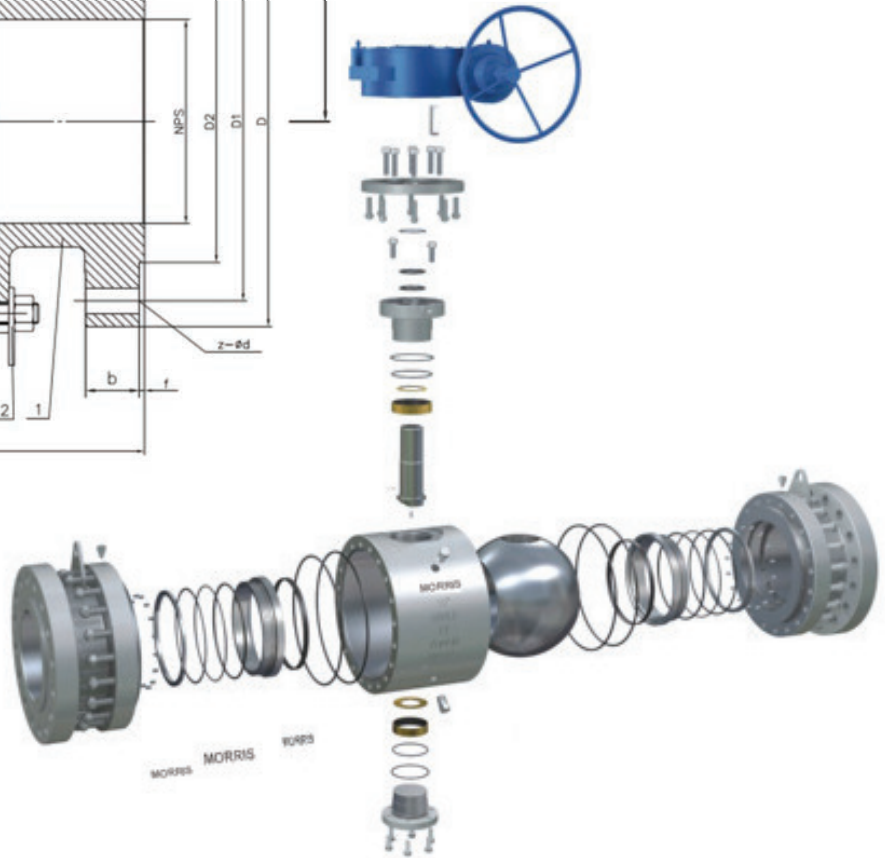
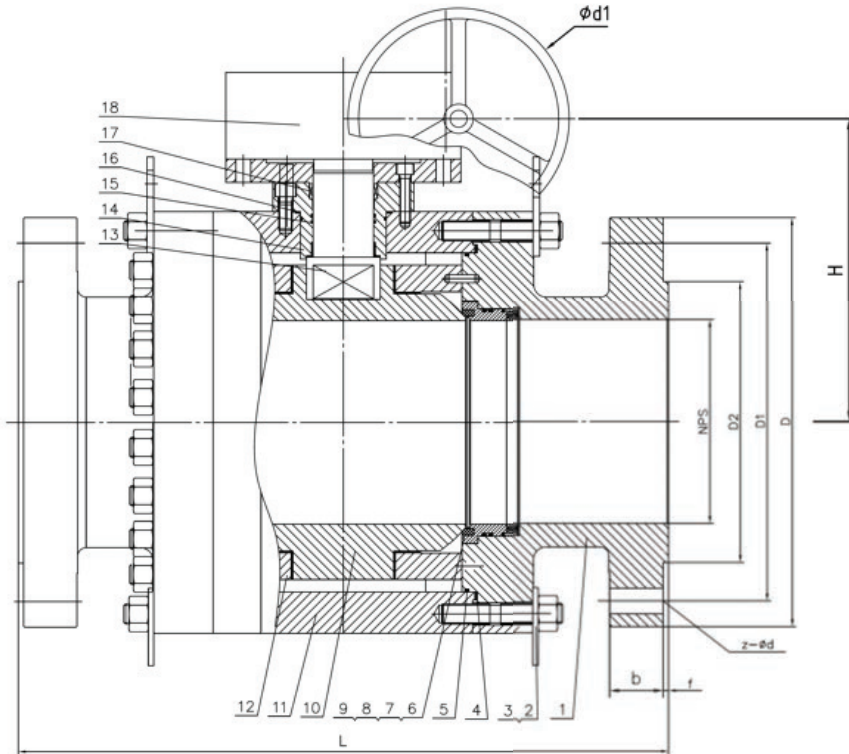
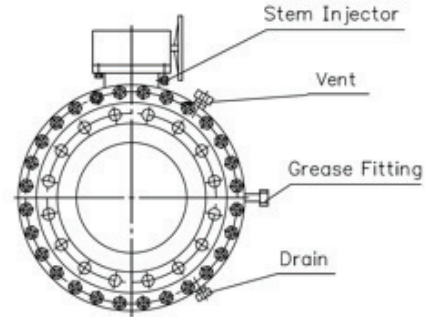
Anti-static Design.- The Ball, stem and body of the Trunnion mounted ball valve by means of the Anti-static spring and Grounding Plunger forms a static channel through which, the static electricity caused in the switching process of ball and body, will be guided to the ground. Thus it can prevent the valve from the potential fire and explosion risk.

Blow-out Proof stem. - This structure is provided for the stem, which is positioned by the up-end cap and screw, being guaranteed not to be blown-out by the medium - even if an abnormal risen pressure in the cavity is presented.

Main Parts & Materials

No	PART	MATERIALS ASTM/ANSI					
		CARBON STEEL		LOW TEMP STEEL		STAINLESS STEEL	
1	CAP	WCB	A105	CF8M	A182 F316	A352 - LCB	A350 -LF2
2	BONNET BOLT	A193 - B7		A193 - B8		A 320 - L7	
3	BONNET BOLT NUT	A194 - 2H		A194 - 8		A194 - 4	
4	BONNET GASKET	GRAPHITE + 304 ²⁾		GRAPHITE + 316 ²⁾		GRAPHITE + 304 ²⁾	
5	O - RING(BONNET)	VITON					
6	SEAT RING	A105+ENP		A182 - F316		A350 - FL2 + ENP	
7	SEAT INSERT (SEAL)	GLASS FILLED PTFE					
8	SEAT O-RING	VITON					
9	SEAT SPRING	17 - 7PH		Inconel X - 750		17 - 7PH	
10	BALL	A182-F304 ¹⁾		A182 - F316		A182 - F304 ¹⁾	
11	BODY	WCB	A105	CF8M	A182 F316	A352 - LCB	A350 -LF2
12	BASE PLATE	A105 + ENP		CF8M A182 F316		A352 - LCB A350 -LF2	
13	STEM	A182 F6a		A276 - 316 A276 - 304			
14	GLAND FLANGE	A105	WCB	CF8M	A182 F316	A352 - LCB	A350 -LF2
15	O-RING(STEM)	VITON					
16	GLAND GASKET	GRAPHITE + 304 ²⁾		GRAPHITE + 316 ²⁾		GRAPHITE + 304 ²⁾	
17	PACKING	FLEXIBLE GRAPHITE					
18	GEAR ACTUATOR HANDLE	COMPONENT PART CARBON STEEL					

Notes:
 1) A105+ENP Optional
 2) Spiral wound construction



NPS (INCH)	2	2-1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	
(class 150)																			
L(RF)	7.00	7.50	8.00	9.00	15.50	18.00	21.00	24.00	27.00	30.00	34.00	36.00	42.00	45.00	49.00	51.00	54.00	60.00	
L1(BW)	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	68.00	
H	7.00	7.50	8.25	9.25	11.4	15.92	19.80	21.20	23.20	24.08	25.6	28.5	33	35.8	36.3	38.7	41.9	44.7	
W	-	-	20	20	24	24	24	24	32	32	32	32	32	32	32	32	32	32	
Wt (Kg)	RF	15	19	27	38	81	140	160	205	260	390	510	750	1200	1400	1860	2100	2530	2970
	BW	13.5	15.5	24.5	32.5	76	132	147	182	241	370	496	726	1125	1250	1640	1930	2390	2760

NPS (INCH)	2	2-1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	
(class 300)																			
L(RF)	8.50	9.50	11.12	12.00	15.88	19.75	22.38	25.50	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	67.99	
L1(BW)	8.50	9.50	11.12	12.00	18.00	20.50	22.00	25.00	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	67.99	
H	5.20	5.68	7.40	9.40	13	15.60	17.80	20.80	22	23.20	24.20	24.40	29	30.4	31.60	33	34.80	37.40	
W	-	-	24	24	24	24	32	32	32	32	32	32	32	40	40	40	40	40	
Wt (Kg)	RF	30	40	60	90	200	325	490	690	990	1810	2620	2860	4430	5430	6810	7655	7940	10150
	BW	24	31	49	72	169	280	424	598	872	1665	2440	2635	4075	4880	6225	7115	7940	10150

NPS (INCH)	2	2-1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	
(class 600)																			
L/ L1 (RF)(BW)	11.50	13	14	17	22	26	31	33	35	39	43	47	55	57	61	65	70	82,00	
L2 (RTJ)	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	57.50	61.50	65.50	70,62	82,63	
H	6.50	7.00	8.80	10	14.4	15.60	18	20	20.8	22	25.40	27	31.20	32.40	33.60	39,76	36.02	38,85	
W	-	-	24	24	32	32	32	32	32	32	40	40	40	40	40	40	40	40	
Wt (Kg)	RF/RTJ	34	53	65	125	245	505	640	910	1380	2250	3400	3850	4900	6700	8300	8380	9740	13300
	BW	27	43	49	95	188	418	495	740	1185	1960	3050	3406	4275	6025	759	8380	9740	13300

NPS (INCH)	2	2-1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	
(class 900)																			
L/ L1 (RF)(BW)	14.50	16.50	15	18	24	29	33	38	40.50	44.50	48.00	52.00	61.00	65.00	69.00	74.00	80.00	90.00	
L2 (RTJ)	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88	48.50	52.50	61.75	65,86	69.88	74.88	80.86	91.14	
H	6.72	7.50	10.20	11.4	14.8	16	18	20	20.8	22	24	25.2	32.4	33.46	35.43	38.58	48.81	51.57	
W	-	-	16	16	16	20	20	20	20	24	24	24	28	28	32	40	40	40	
Wt (Kg)	RF/RTJ	45	65	73	135	360	650	930	1350	1890	3100	4300	4950	7100	8040	10840	12210	14992	19920
	BW	37	53	56	98	291	545	760	1145	1650	2750	3875	4410	6485	8040	10840	12210	14992	19920

NPS (INCH)	2	2-1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
(class 1500)																		
L/ L1 (RF)(BW)	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50	49.50	54.50	60.51	65.51	-	-	-	-	-	-
L2 (RTJ)	14.62	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	61.37	66.37	-	-	-	-	-	-
H	-	-	10.03	11.22	18.11	20.47	25.19	28.34	29.92	32.28	34.64	35.43	-	-	-	-	-	-
W	-	-	20	20	20	20	20	20	20	24	24	28	-	-	-	-	-	-
Wt (Kg)	RF/RTJ	55	75	95	150	540	880	1360	1980	3100	4120	6260	9120	-	-	-	-	-
	BW	40	55	65	115	420	685	1025	1555	2600	4120	6260	9120	-	-	-	-	-

NPS (INCH)	2	2-1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
(class 2500)																		
L/ L1 (RF)(BW)	17.75	20	22.75	26.50	36.00	40.25	50.00	56.00	-	-	-	-	-	-	-	-	-	-
L2 (RTJ)	17.88	21.25	23.00	26.88	36.50	40.88	50.88	56.88	-	-	-	-	-	-	-	-	-	-
H	6.69	8.26	9.84	11.41	13.38	18.50	19.29	24.21	-	-	-	-	-	-	-	-	-	-
W	14	18	20	20	24	24	28	32	-	-	-	-	-	-	-	-	-	-
Wt (Kg)	RF/RTJ	90	152	200	385	778	1352	2537	3667	-	-	-	-	-	-	-	-	-
	BW	90	152	200	385	778	1352	2537	3667	-	-	-	-	-	-	-	-	-

