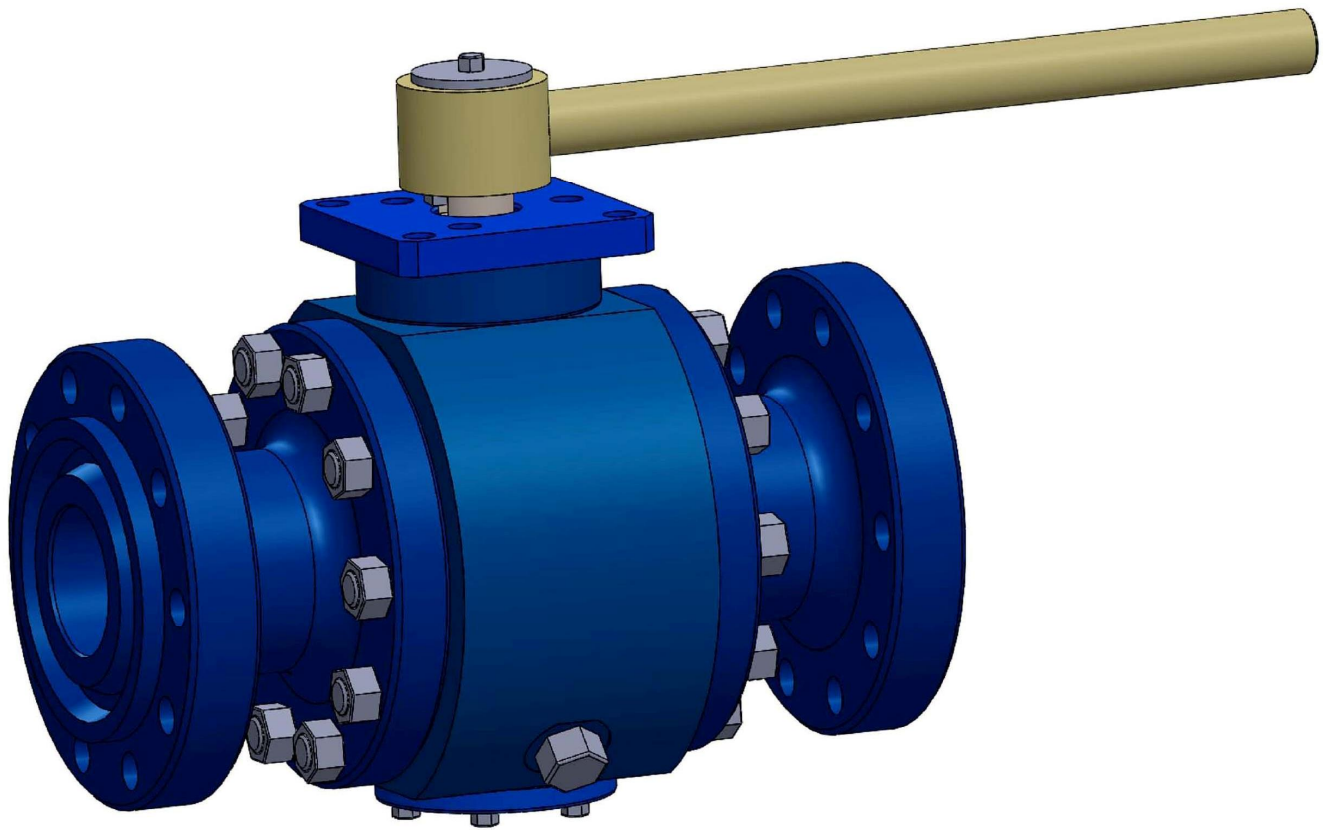


TRUNNION MOUNTED BALL VALVE



GEMINI VALVES AND PUMPS PVT. LTD.

(End to end solutions in Automation & Process Industries)

GEMINI Trunnion Mounted Ball Valve Standards:-

Ball valves are mainly designed to conform API 6D (Specification for pipeline valves) and ANSI B16.34 (Valves Flanged, Threaded and Welding End) .

Other related standards such as ANSI B16.5 (Pipe Flanges and Flanged Fittings), ANSI B16.25 (Butt welding Ends), ANSI B16.10 (Face to Face and End-to-End Dimensions of Valves) are also used for the design of ball valves.

Also our ball valves are designed to meet FIRE SAFE requirements to BS6755, API 6FA and API 607.

Final testing is done to conform API 598 (Valve Inspection and Testing) MSS-SP-61 (Pressure Testing of Steel Valves) API 6D (Specification for Pipeline Valves).

Materials are selected mainly to ASTM standards and when sour service is specified to meet NACE MR-01-75 (Sulfide Stress Cracking resistant Metallic Materials for Oilfield Equipment).

GEMINI Trunnion-mounted ball valve design features:

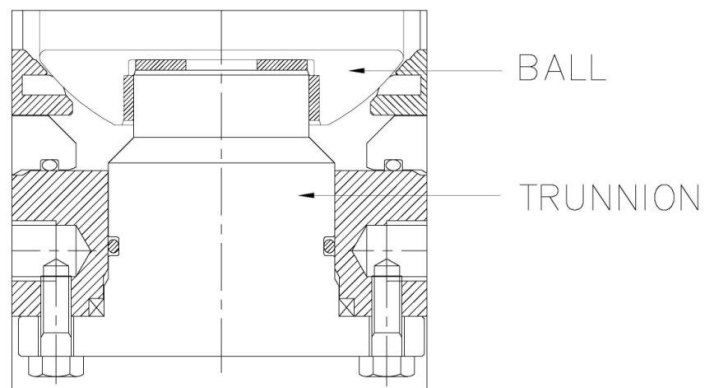
- Δ Three-piece bolted body-field serviceable.
- Δ Bi-Directional Flow.
- Δ Anti-Blowout stem.
- Δ Anti-static Devices.

1 Independent ball and stem:

The ball and stem are independent to minimize the effect of the side thrust generated by the pressure acting on the ball.

2 Trunnion-mounted ball:

The ball is fixed and the seat rings are floating, free to move along the valve axis. Side load generated by the pressure acting on the ball is absorbed by bearings. At low pressure, the seat sealing action is achieved by the thrust of the springs acting on the seat rings. As the pressure increases, the fluid pressure pushes the seat rings against the ball.

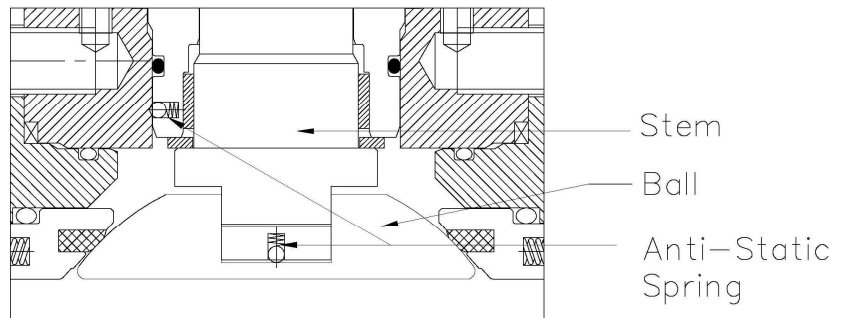


3 Anti-blowout stem

The stem is made separately from the ball with integral T-type round shoulder, retained by gland.

4 Anti-static Device:

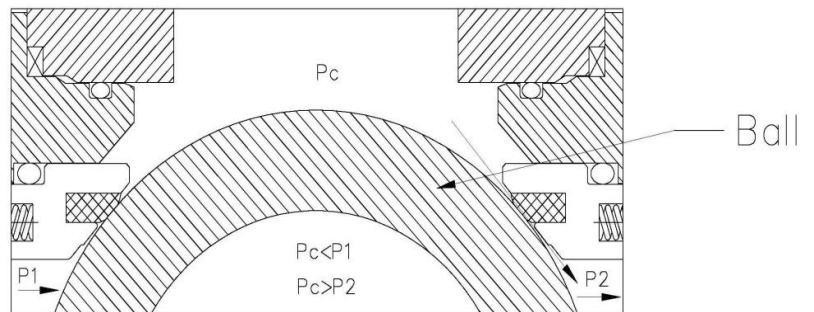
Spring plus graphite type anti-static device are applied between the ball, stem, to keep the electric continuity between all the metallic components, and ensure the resistance lower than the most severe service requirements.



5 Floating self-relieving seat rings

Two independent floating seat rings assure the bidirectional tightness of the valve.

The seats are carefully designed to minimize the torque required to operate the valves without losing sealing power, which is assured from zero differential pressure to the valve's maximum rated pressure.



Self-relieving seats are supplied as a standard feature.

6 Low emission valves

Accurate machining of stem and bonnet sealing surfaces ensures compliance with the most severe pollution-control regulations.

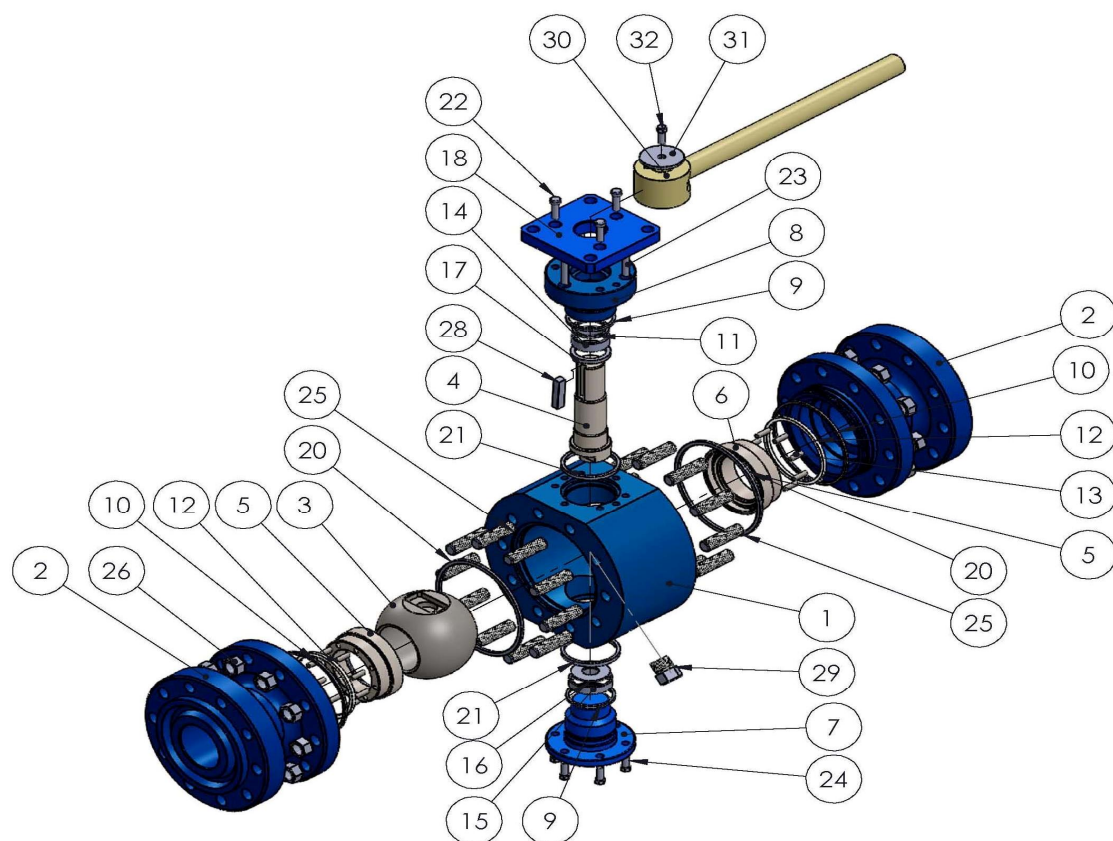
7 Extended stem

Valves installed underground or in remote locations can be operated with an optional extended stem.

8 Ends

Valve ends can be manufactured to several configurations to comply with customer requests, such as: Flanged RF or RTJ to ASME B16.5 up to 12".

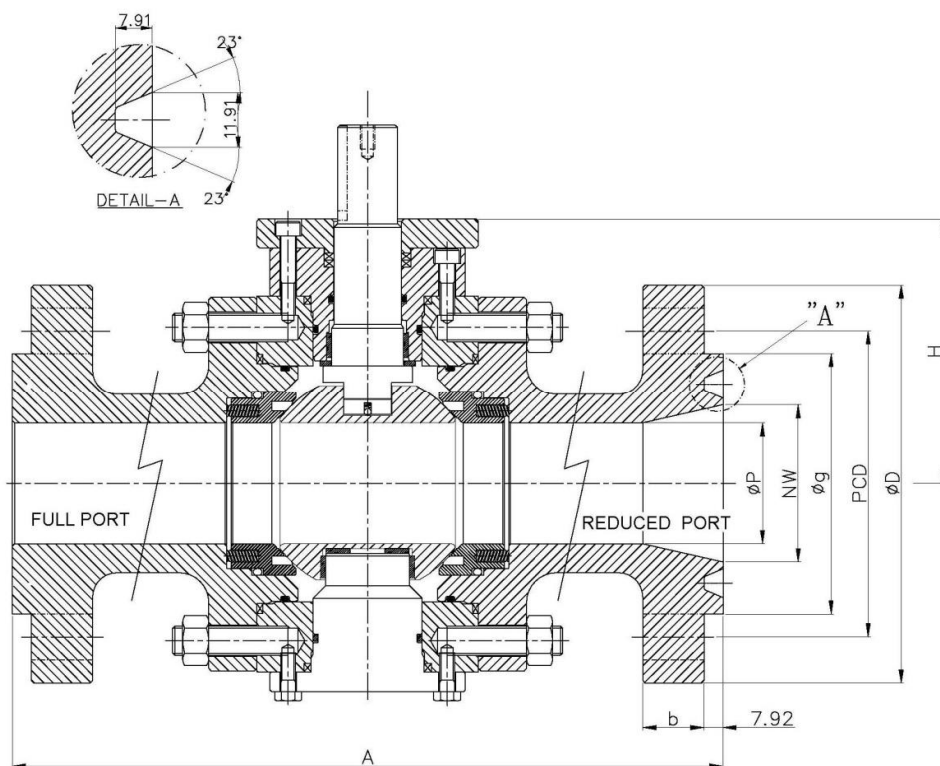
EXPLODED VIEW:



COMPONENT LIST:

16	THRUST WASHER (STEM)	1		32	HEX BOLT FOR HANDLE	1
15	DU-BEARING	1		31	HANDLE WASHER	1
14	DU-BEARING	1		30	HANDLE	1
13	SEAT SPRING	20		29	DRAIN PLUG	1
12	SEAT RING "O" RING	2		28	KEY	1
11	STEM "O" RING	1		27	DOWEL PIN	4
10	BODY "O" RING	2		26	NUTS	20
9	HOUSING "O" RING	2		25	STUD	20
8	HOUSING	1		24	HEX BOLT	6
7	TRUNNION	1		23	CAP SCREW FOR GLAND PLATE	3
6	SEAT CARTRIDGE	2		22	CAP SCREW FOR HOUSING	3
5	SEAT	2		21	TRUNNION / HOUSING SEAL	2
4	STEM	1		20	BODY SEAL	2
3	SOLID BALL	1		19	STEM SEAL	3
2	END CONNECTOR	2		18	GLAND PLATE	1
1	BODY	1		17	THRUST WASHER (TRUNNION)	1
SR.NO.	DESCRIPTION	QTY.		SR.NO.	DESCRIPTION	QTY.

GENERAL ASSEMBLY:



DIMENSIONAL DATA IN MM:

SERIES 60A:

HIGH PERFORMANCE THREE-PIECE #600 FLANGED END MANUAL / ON-OFF TRUNNION MOUNTED BALL VALVE:

SIZE	#600,DIMENSIONAL DATA IN MM										
	A (RTJ)	A (RF)	ØP	NW	h(Approx)	ØD	b	Øg	PCD	ØN	Z
50	295	292	38	50	110	165	25.4	92	127	19	8
80	359	356	50	74	148	209.5	31.8	127	168	22	8
100	435	432	74	100	180	273	38	157.3	216	25	8
150	562	559	100	152	225	355.5	47.7	216	292	28.5	12
200	664	660	152	203	271	419	55.6	270	349.3	32	12
250	791	787	203	254	331	508	63.5	324	432	35	16
300	841	838	254	305	369	559	70	381	489	35	20

SERIES 60B:

HIGH PERFORMANCE THREE-PIECE #900 FLANGED END MANUAL / ON-OFF TRUNNION MOUNTED BALL VALVE:

SIZE	#900,DIMENSIONAL DATA IN MM										
	A (RTJ)	A (RF)	ØP	NW	h(Approx)	ØD	b	Øg	PCD	ØN	Z
50	371	368	38	50	120	216	38	92	165	25.5	8
80	384	381	50	74	148	241.5	38	127	190.5	25.5	8
100	460	457	74	100	180	292	44.5	157.3	235	32	8
150	613	610	100	152	241	381	55.5	216	317.5	32	12
200	740	737	152	203	277	470	63.5	270	394	38	12
250	841	838	203	254	336	546	70	324	470	38	16
300	968	965	254	305	365	609.5	79.2	381	533.5	38	20

SERIES 60C:

HIGH PERFORMANCE THREE-PIECE #1500, FLANGED END MANUAL / ON-OFF TRUNNION MOUNTED BALL VALVE:

SIZE	#1500,DIMENSIONAL DATA IN MM										
	A (RTJ)	A (RF)	ØP	NW	h(Approx)	ØD	b	Øg	PCD	ØN	Z
50	371	368	38	50	120	216	38	92	165	25.4	8
80	473	470	50	74	148	267	48	127	203	32	8
100	549	546	74	100	180	311	54	157.3	241.3	35	8
150	711	705	100	146	452	394	82.5	216	317.5	38	12
200	841	832	146	194	535	482.5	92	270	394	44.5	12
250	1000	991	194	241	605	584	108	324	482.5	51	12
300	1146	1130	241	289	607	673	124	381	571.5	54	16

TORQUE VALUES IN Nm / Lb.In :

MAXIMUM OPERATING TORQUES FOR TRUNNION MOUNTED BALL VALVES								
Sr. No.	SIZE		CLASS 600		CLASS 900		CLASS 1500	
	NPS	DN	Nm.	Lb. In.	Nm.	Lb. In.	Nm.	Lb. In.
1	2"	50	111	974	136	1167	259	2280
2	3"	80	325	2860	436	3861	607	5360
3	4"	100	458	4108	607	5360	930	8235
4	6"	150	1075	8535	1495	13240	2575	22820
5	8"	200	2125	18810	3184	28201	4938	43725
6	10"	250	2826	25010	3952	35000	6128	54248
7	12"	300	3273	28970	4910	43478	8841	78267

AVAILABLE MATERIAL OF CONSTRUCTION:

COMPONENTS	AVAILABLE MATERIAL
BODY	ASTM-A 216 WCB/WCC/LF2/A102/A 351 CF8M/A 351 CF3M/A 352 LCB/LCC/ DUPLEX SS /INCONEL.
BODY ADAPTOR	ASTM-A 216 WCB/WCC/LF2/A102/A 351 CF8M/A 351 CF3M/A 352 LCB/LCC/ DUPLEX SS /INCONEL.
BALL	ASTM-A 216 WCB/WCC+ENP / A 351 CF8M / A351 CF3M / A217 CA15/MONEL/INCONEL /DUPLEX SS
STEM HOUSING	ASTM-A216 WCB / A351 CF8M / A351 CF3M / A 352 LCB
SEAT	ASTM -A105 + ENP / A 182 F316 / ASTM A 182 F6A / DUPLEX SS/INCONEL/F44/LF2
SEAT INSERT	RPTFE / NYLON / PEEK / DEVLON / METAL
STEM GASKET	GRAPHITE
BODY GASKET	GRAPHITE
STEM H. GASKET	GRAPHITE
TRUNNION GASET	GRAPHITE
TRUNNION	A 182 F 304/A 182 F 316 / A 182 F 316 / A 182 F 410 / A 105 / DUPLEX SS/INCONEL
"O" RING	VITON
ISO PAD	STEEL
SPRINGS	ASTM B 637 (INCONEL 750)/INCONEL 718
TRUST WASHER	A 479 SS 316 + PTFE COATED
STUDS/BOLTS/ CAP SCREW	ASTM-A 320 L7,L7M / A 193 B8M/A 193 B7 / A 193 GR.B7M
NUTS	ASTM-A 194 GR.7M / A 194 GR.8M / A 194 2H / A 194 GR.2HM
BEARING	A 479 SS 316 + PTFE COATED
DRAIN PLUG	STANDARD



CONTACT

GEMINI VALVES AND PUMPS PVT.LTD.

Regd. Office & works
GAT NO.78/4, Jyotibha Nagar, Near Unique Circle Company
Talwade , Pune-14.

Phone : (020) 65100617 , Mobile : (+91) 98903 17654

Email: contact@geminivalves.com , info@geminivalve.com

Website: www.geminivalve.com , www.geminivalves.in