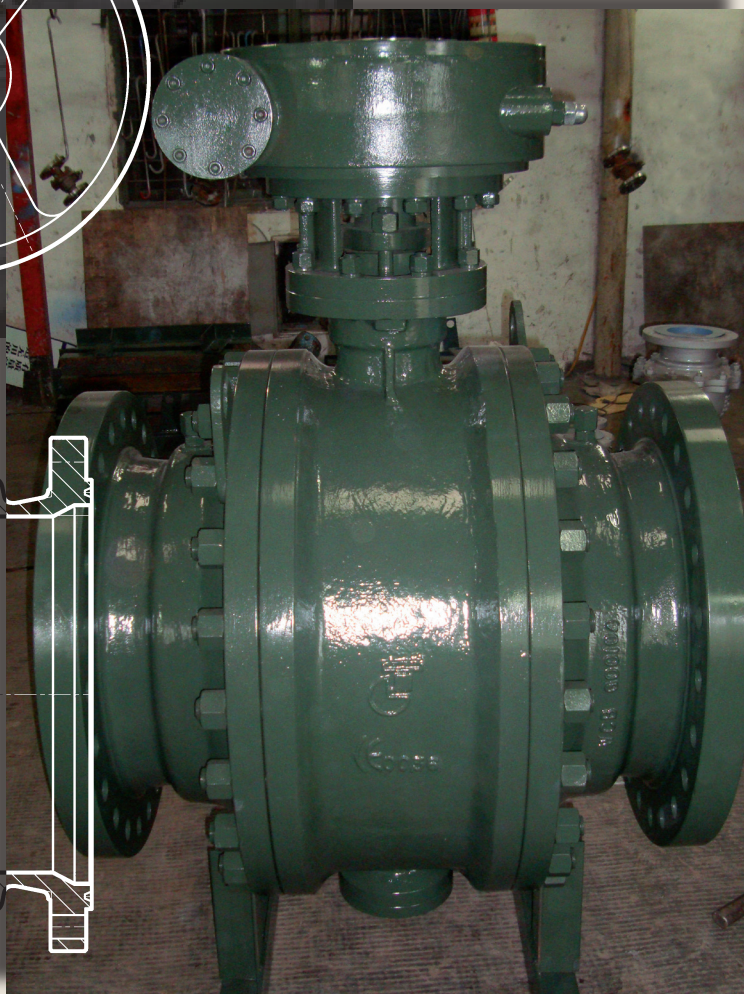
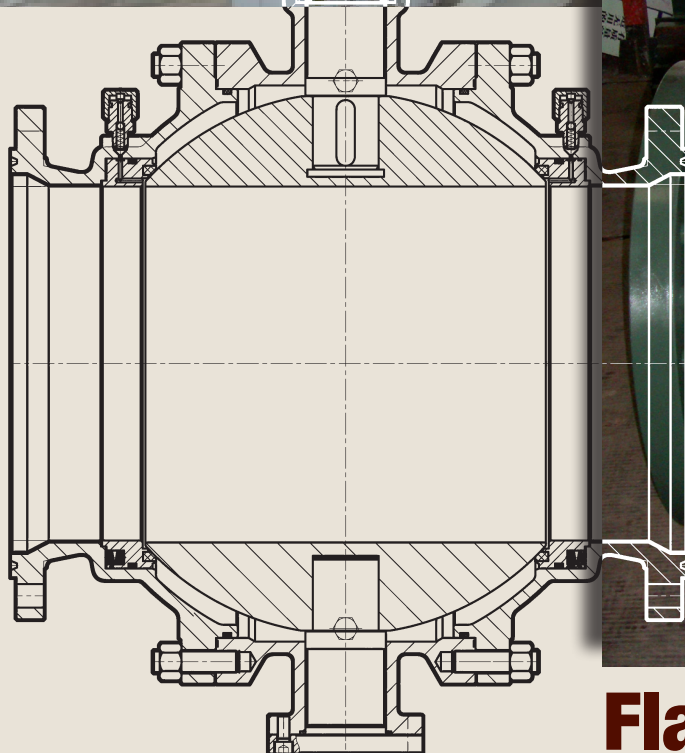
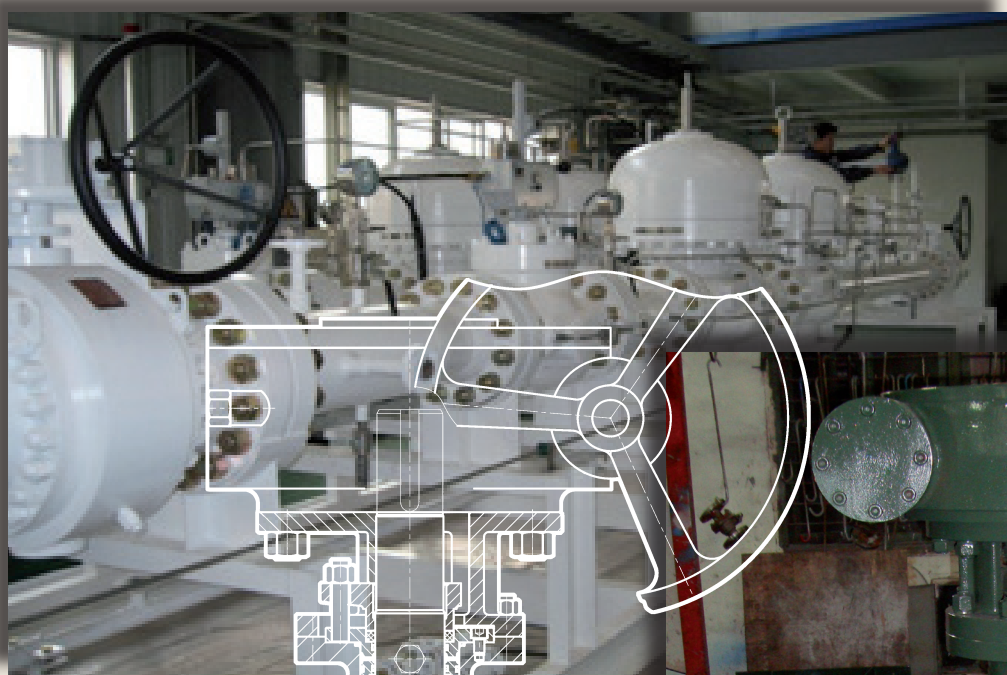


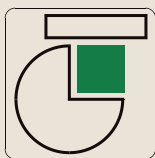
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# **Cast steel trunnion mounted ball valve**



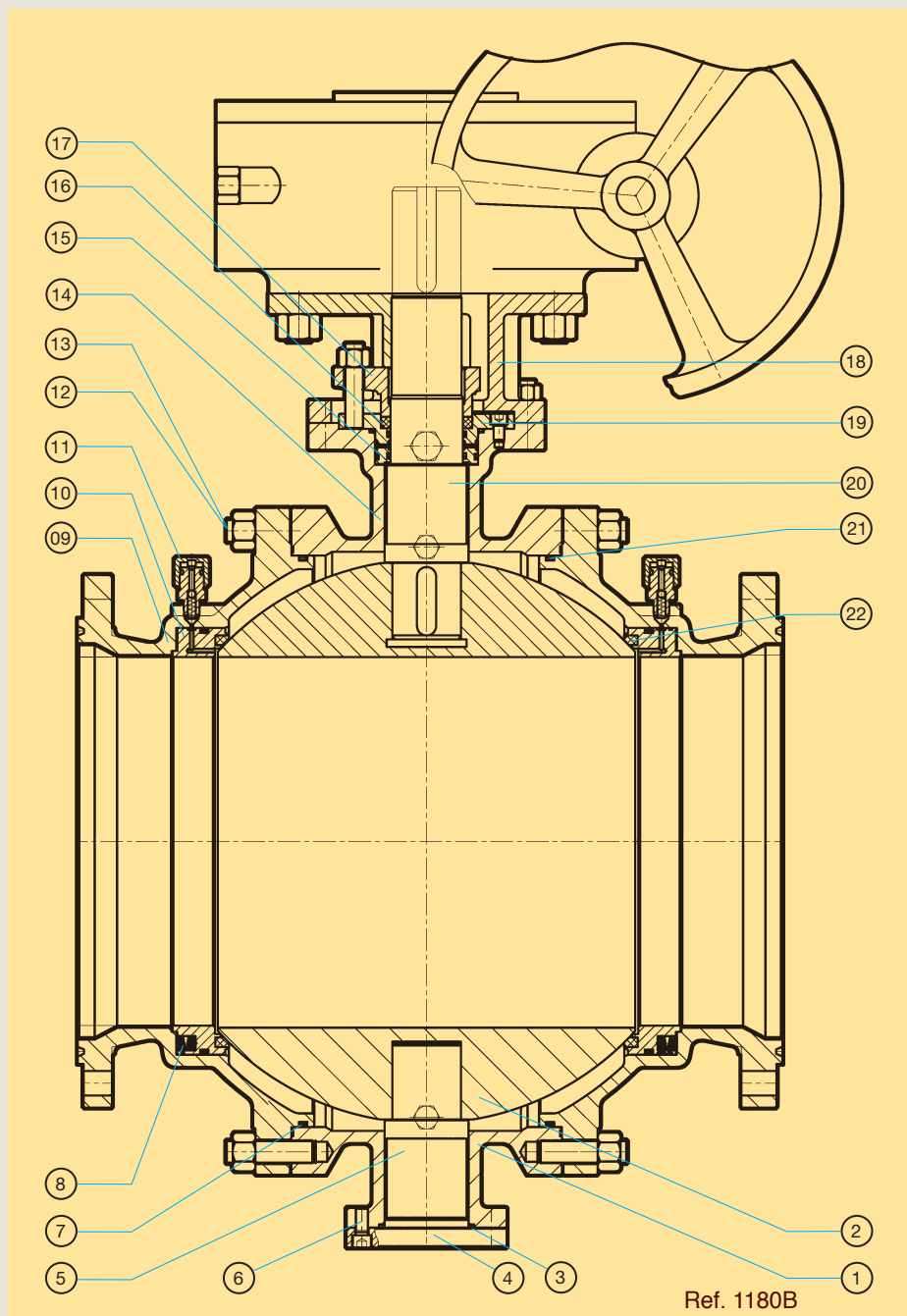
**Flange RF and RJ type**

**In the vanguard of the technology**



# Cast steel\* trunnion mounted ball valve 150, 300 and 600 lb Flange RF and RJ type

## Section drawing

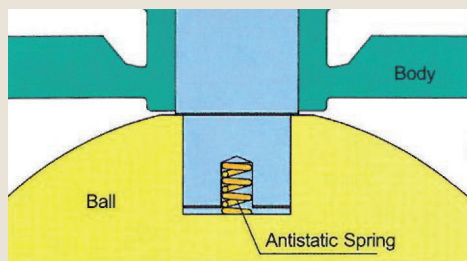


## Parts list

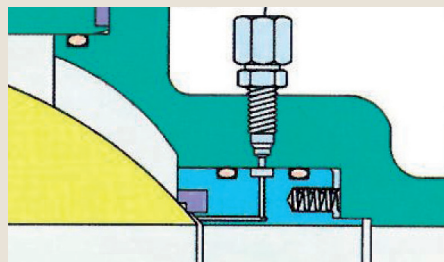
N°	Parts	Material **
1	Body	WCB
2	Ball	AISI 410
3	Trunnion gasket	P.T.F.E.
4	Bottom cover	A105
5	Trunnion	AISI 410
6	Screw	A193-B7
7	"O" ring	Viton
8	Spring	17-7PH
9	Bonnet	WCB
10	Seat ring	AISI 410
11	injection valve	1020 + Zn
12	Nut	A194-2H
13	Stud	A193-B7
14	Sliding bearing	Stainless steel + P.T.F.E.
15	Thrust washer	P.T.F.E.
16	Packing	Graphite
17	Gland	WCB
18	Yoke	WCB
19	Stem cover	A105
20	Stem	F316
21	Body gasket	SS304 + graphite
22	Seat	P.T.F.E.



Forged steel trunnion ball valve



Detail of an Antistatic Spring

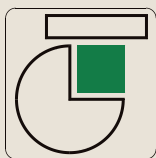


Detail of Injection fitting

\* Forged steel model/design : on request.

\*\* Materials are given for guidance only and are not contractual.

Informations are given for guidance only and are not contractual.



# Cast steel\* trunnion mounted ball valve 150, 300 and 600 lb Flange RF and RJ type

## Dimensional datas Class 150 lb

Bore	Gear	Size	A	H	Weight
	**	(in)	(mm)	(mm)	(kg)
Full		2	178	140	15
		3	203	177	24
		4	229	206	40
	**	6	394	305	95
	**	8	457	398	170
	**	10	533	495	255
	**	12	610	580	390
	**	14	686	625	510
	**	16	762	720	820
	**	18	864	770	1010
	**	20	914	840	1828
	**	24	1067	920	2100
Reduced	3 x 2	203	140	21	
		4 x 3	229	177	30
		6 x 4	394	206	68
	**	8 x 6	457	305	115
	**	10 x 8	533	398	214
	**	12 x 10	610	495	284
	**	14 x 12	686	580	418
	**	16 x 14	762	625	612
	**	18 x 16	864	720	970
	**	20 x 18	914	770	1137
	**	24 x 20	1067	840	2000

\*\* Gear operated

## Dimensional datas Class 600 lb

Bore	Gear	Size	A	H	Weight
	**	(in)	(mm)	(mm)	(kg)
Full		2	292	145	25
		3	356	182	50
		4	432	211	56
	**	6	559	435	250
	**	8	660	530	437
	**	10	787	615	735
	**	12	838	680	1050
	**	14	889	720	1300
	**	16	991	540	1775
	**	18	1092	590	2100
	**	20	1194	925	3100
	**	24	1397	980	4750
Reduced	3 x 2	356	145	39	
		4 x 3	432	182	65
		6 x 4	559	211	136
	**	8 x 6	660	435	292
	**	10 x 8	787	530	505
	**	12 x 10	838	615	760
	**	14 x 12	889	680	1105
	**	16 x 14	991	420	1417
	**	18 x 16	1092	840	1955
	**	20 x 18	1194	890	2380
	**	24 x 20	1397	925	3640

\*\* Gear operated

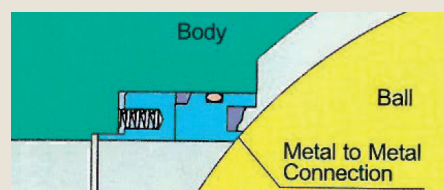
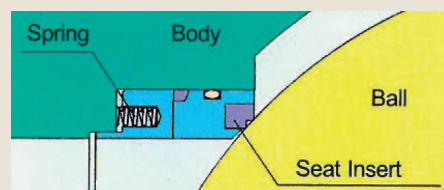
\* Forged steel model/design : on request.

## Class 300 lb

Bore	Gear	Size	A	H	Weight
	**	(in)	(mm)	(mm)	(kg)
Full		2	216	140	18
		3	283	177	33
		4	305	206	55
	**	6	403	305	135
	**	8	502	398	210
	**	10	568	495	391
	**	12	648	580	550
	**	14	762	625	710
	**	16	838	720	1250
	**	18	914	770	1300
	**	20	991	840	2180
	**	24	1143	920	2930
Reduced	3 x 2	283	140	25	
		4 x 3	305	177	41
		6 x 4	403	206	92
	**	8 x 6	502	305	164
	**	10 x 8	568	398	350
	**	12 x 10	648	495	400
	**	14 x 12	762	580	590
	**	16 x 14	838	625	850
	**	18 x 16	914	720	1220
	**	20 x 18	991	770	1460
	**	24 x 20	1143	840	2220

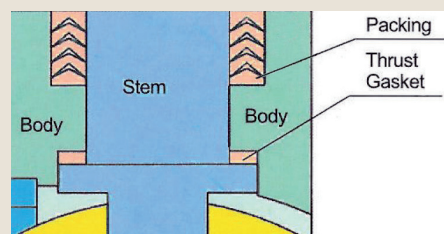
\*\* Gear operated

## Fire Safe Seat Sealing



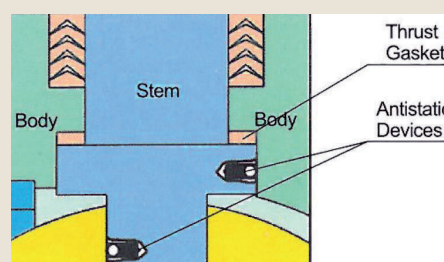
Internal leakage prevention When seat insert, O ring and spacer are damaged in a fire, the line pressure and the seat preloaded spring push the seat metal lip onto the ball surface to cut off the line fluid and prevent the internal leakage to reach the fire safe purpose. Besides, the seat graphite packing can prevent fluid leakage between the valve body and the seat.

## Blow-out proof stem



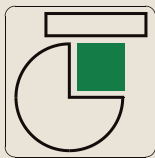
The stem is designed with integral T-type shoulder to provide blow-out proof effectively. It is internally inserted as the backseat function to assure stem sealing safety at all pressures.

## Anti-static device



Used the spring & stainless ball combined between the valve ball & stem and stem & body, it ensures all valve metal parts are grounding.



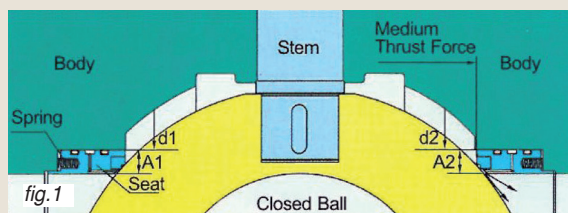


# Cast steel\* trunnion mounted ball valve 150, 300 and 600 lb Flange RF and RJ type

## The effective sealing for valve seat

- The sealing for upstream seat. The seat ring can be moved slightly along the valve axis, the pressure of upstream line and the spring thrust force acted on the seat ring area (A1), it is caused the piston action when the pressure is over the area (d1), which pushed the seat ring tightly against the surface of ball, and resulting an effective seal for valve seat.

- The sealing for downstream seat. When the pressure in body cavity is lower than the downstream line and the thrust force, the net difference of pressure acted over the area (A2), it is caused the piston action when the pressure is over the area (d2), which pushed the seat ring tightly against the surface of ball, and resulting an effective seal for valve seat (fig. 1).

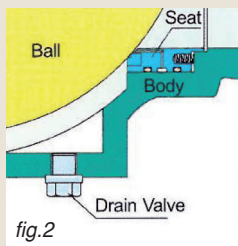
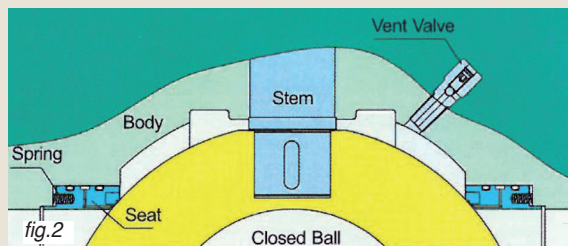


## Self relieving seat

When the body cavity pressure exceeds the downstream seat spring preloaded force, the differential force in the area (d2) pushes the downstream seat away from the ball, the body cavity pressure will automatically relieved. And then the seat returns to the ball under spring action (fig. 1).

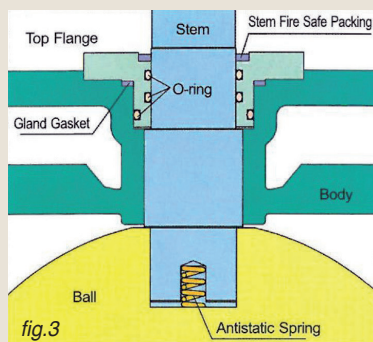
## Double block and bleed

When the ball is in the closed position, each seat of the ball valve can cut off the medium independently on the upstream and downstream side to realize double-block functions. The body cavity are isolated from each side of the valve, the body cavity pressure could be released through the vent valve (fig. 2).



## Blow-out proof stem

The stem with integral T-type shoulder, supported by gland, which can be guaranteed not to be blow-out by the medium even if at abnormal risen pressure from the cavity (fig. 3).



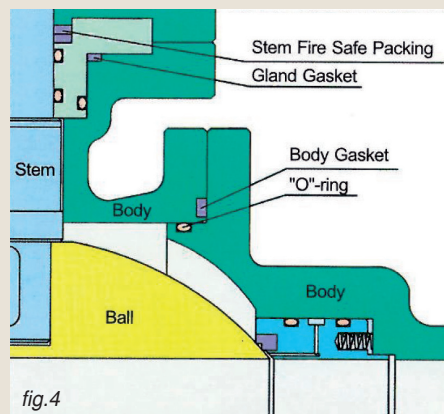
## Anti-static device

During turning of the stem to open or closing the valve, static electricity is easily caused by sparks generated by friction. Antistatic devices, assembled by a spring & a grounding plunger, which ensure the electrical continuance between ball & stem and stem & body, to prevent the possible risk of fire or explosion (fig. 3).

## Firesafe design

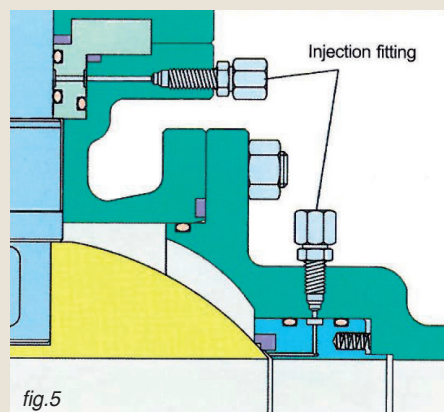
### External leakage prevention

A combination of O ring and graphite gasket on body & bonnet connection, body & gland connection, and stem & gland joint, can prevent the external leakage. When O rings are damaged after a fire, body gasket, gland gasket, and stem packing, it is still on the performance of sealing and prevents external fluid leakage (fig. 4).



## Emergency sealant injection system

Trunnion mounted ball valves, special sealants could be injected through a sealant injection fittings which are located on the bonnet and the gland to obtain emergency sealing. In case of seat or stem O ring are damaged and leakage occurs by fire or other accidental. Fittings also internally installed a secondary check to provide backup sealing (fig. 5).



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\* Forged steel model/design : on request.