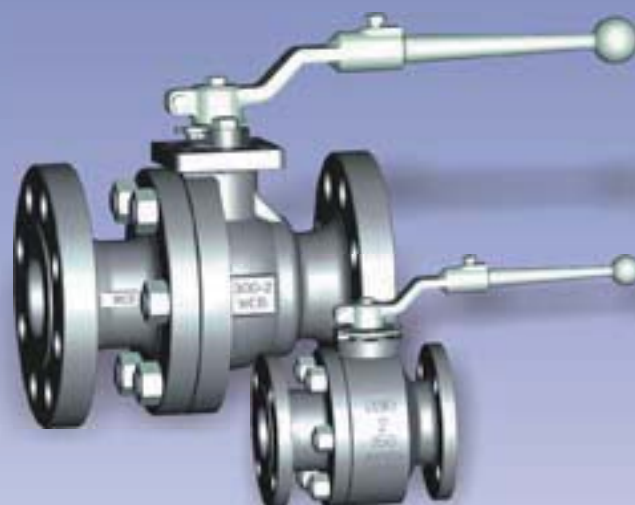
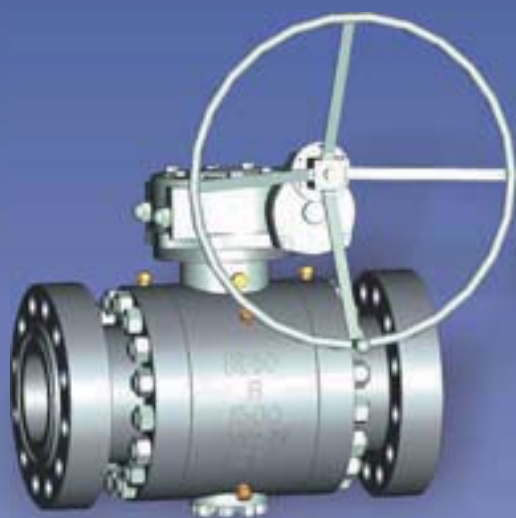




Cast And Forged Steel Float, Trunning Mounted & Top Entry Ball Valves





BALL VALVE, CS, FL

Design

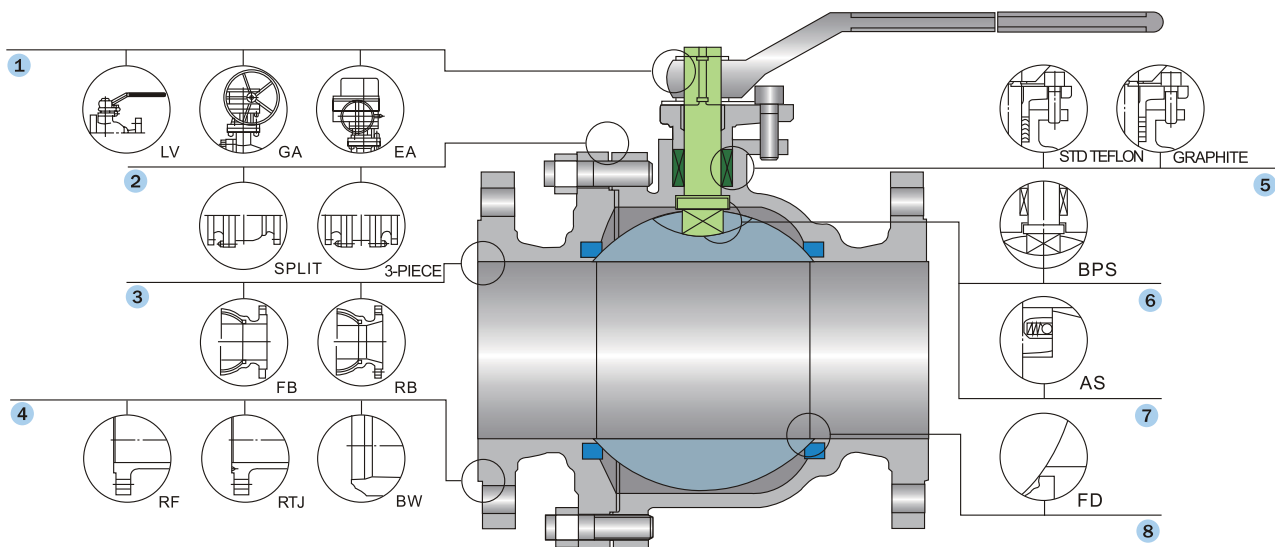
KOJO cast steel ball valve are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American petroleum Institute Standard API 600 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers Standard ASME B 16.34. Valves are available in a complete range of body/bonnet materials and trims.

Rang of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special apolications they can be supplied in other grades of alloy and stainless steel. There' s a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Available Modifications For **KOJO** Cast Steel Valves

- * Trim changes
- * End connection Modifications
- * Packing and Gasket Changes
- * Operator Mounting
- * Handwheel Extensions
- * Pressure Equalizing
- * AS or FD
- * Customer specified Coatings
- * Weld End Bore Changes
- * Oxygen & Chlorine Cleaning & Packaging



1 Operating

Extended lever for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

3 BORE

Full Bore or Reduced Bore. Full-bore design provides exceptional flow control

5 Packing

STD Packing Multiple V-TEFLON packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing use situation for high-temperature.

7 AS

Anti Static. A metallic contact is always granted between ball and stem/ body to discharge eventual statics build-up during service.

2 BODY & BONNET

Split or 3-piece, split body & bonnet for 12 " & Small. Disassembles easily for repair or replacement of internal components.

4 End Connections

A choice of Flanged, RTJ flanged or Buttwelding end for piping flexibility

6 BPS

Blow-out Proof Stem. A pressure-safe stem shoulder design that protects against failure under excess pressure.

8 FD

Fire Durable. Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.



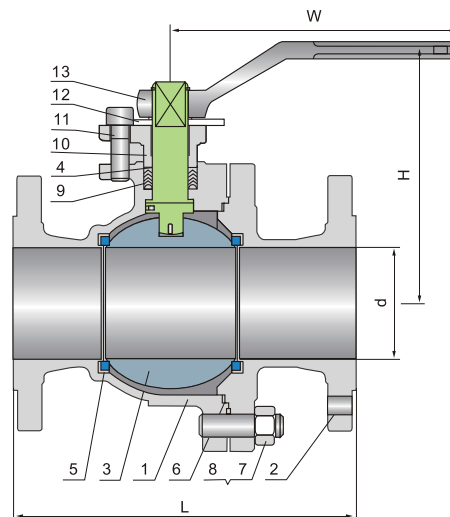
FLOATING CAST STEEL BALL VALVE 150LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

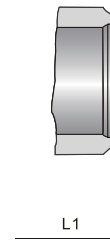
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring	R.PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

Note: 1). A105+ENP optional
2). Spiral wound construction.



Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
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ANSI Class 150Lb

L (RF)	4.25 108	4.62 117	5.00 127	6.50 165	7.00 178	7.50 190	8.00 203	9.00 229	15.50 394	18.00 457	21.00 533	24.00 610	in mm
L1 (BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	in mm
H	2.12 55	2.12 55	2.75 70	3.50 90	4.12 105	6.12 155	7.25 185	8.00 205	10.00 255	11.00 280	13.50 345	16.50 420	in mm
(d)	13	19	25	38	49	62	74	100	150	201	252	303	mm
W	5 130	5 130	6 160	8 200	14 350	16 400	20 500	20 500	24 600	32 800	32 800	32 800	in mm
WT (kg)	2.3 1.8	3 2.8	4.5 3.7	7 6.2	9.5 8.5	15 14	19 21	33 35	93 98	160 170	200 225	280 295	RF BW



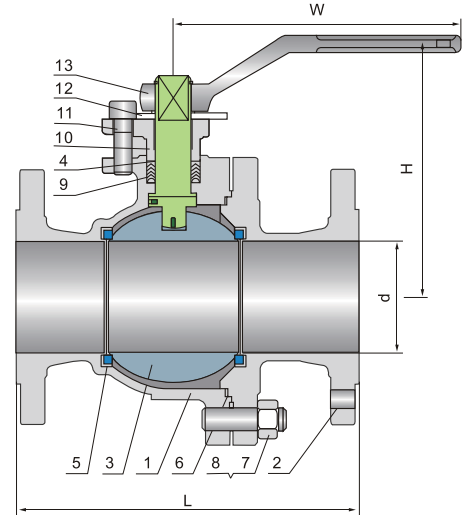
FLOATING CAST STEEL BALL VALVE 300LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

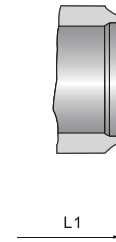
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring	R.PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

Note: 1). A105+ENP optional
2). Spiral wound construction.



Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
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ANSI Class 300Lb

L (RF)	5.50 140	600 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	19.75 502	22.38 568	25.50 648	in mm
L1 (BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	in mm
H	2.12 55	2.12 55	2.75 70	3.50 90	4.12 105	6.12 153	7.25 187	8.00 206	10.00 255	11.00 280	13.50 345	16.50 420	in mm
(d)	13	19	25	38	49	62	74	100	150	201	252	303	mm
W	5 130	5 130	6 160	8 200	14 350	16 400	20 500	20 500	24 600	32 800	32 800	32 800	in mm
WT (kg)	2.5 1.8	3.5 2	5.5 3.2	10.5 5.5	14.5 8.7	23.5 15	30 18	55 36	118 85	200 152	250 182	330 232	RF BW



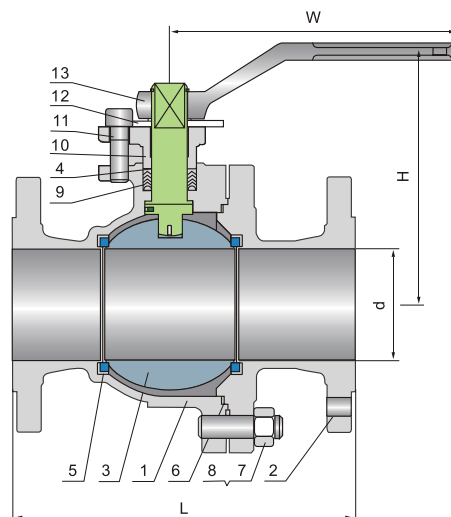
FLOATING CAST STEEL BALL VALVE 600LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

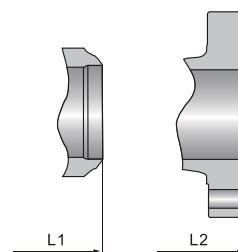
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring	R.PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

Note: 1). A105+ENP optional
2). Spiral wound construction.



Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 40	3 80	4 100	6 150	in mm
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ANSI Class 600Lb

L (RF)	6.50 165	7.50 190	8.50 216	9.50 241	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	in mm
L1 (BW)	- -	- -	- -	- -	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	in mm
H	2.38 61.5	2.38 61.5	3.00 78	4.00 101	4.75 120	6.88 174	8.38 212	9.25 234	11.38 289	in mm
(d)	13	19	25	38	49	62	74	100	150	mm
W	5 130	6 160	8 200	14 350	16 400	20 500	24 600	24 600	32 800	in mm
WT (kg)	3.3 2.6	4.5 3.1	7.2 4.8	13.5 8	19 13	31 22	39 27	71 53	153 120	RF BW



BALL VALVE, CS, TM

Design

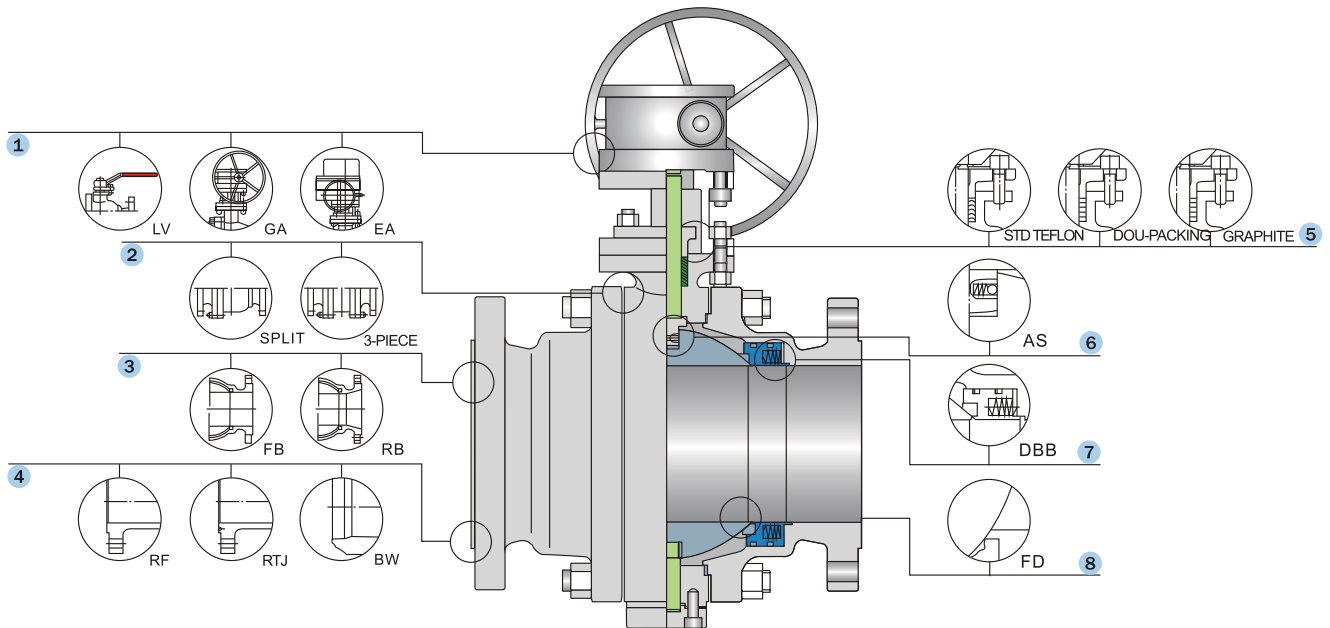
KOJO cast steel ball valve are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American petroleum Institute Standard API 600 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers Standard ASME B 16.34. Valves are available in a complete range of body/bonnet materials and trims.

Rang of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special apolications they can be supplied in other grades of alloy and stainless steel. There' s a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Available Modifications For **KOJO** Cast Steel Valves

- * Trim changes
- * End connection Modifications
- * Packing and Gasket Changes
- * Operator Mounting
- * Handwheel Extensions
- * Pressure Equalizing
- * AS or FD
- * Customer specified Coatings
- * Weld End Bore Changes
- * Oxygen & Chlorine Cleaning & Packaging



1 Operating

Extended lever for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

3 BORE

Full Bore or Reduced Bore. Full-bore design provides exceptional flow control

5 Packing

STD Packing Multiple V-TEFLON packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing use situation for high-temperature.

7 DDB

Double Block & Bleed, The body cavity is isolated when the ball is in either fully closed or fully opened position. The medium entrapped in it can easily be bled to avoid over pressure.

2 BODY & BONNET

Split or 3-piece, split body & bonnet for 12 " & Small. Disassembles easily for repair or replacement of internal components.

4 End Connections

A choice of Flanged, RTJ flanged or Buttwelding end for piping flexibility

6 AS

Anti Static. A metallic contact is always granted between ball and stem/ body to discharge eventual statics build-up during service.

8 FD

Fire Durable. Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.



TRUNNION MOUNTED CAST STEEL BALL VALVE 150LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

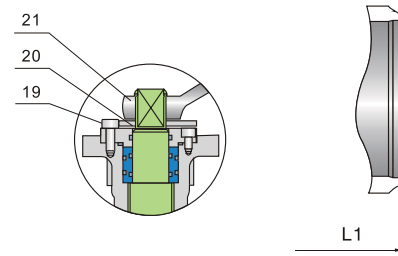
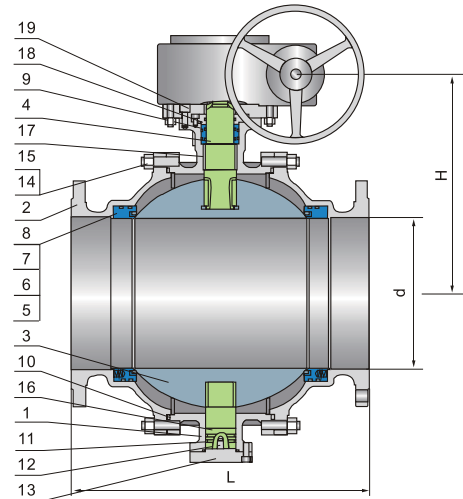
Design description:

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note: 1). A105+ENP optional
2). Spiral wound construction.



Dimensions data

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
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ANSI Class 150Lb

L (RF)	7.00 178	7.50 190	8.00 203	9.00 229	15.50 394	18.00 457	21.00 533	24.00 610	27.00 686	30.00 762	34.00 864	36.00 914	42.00 1067	45.00 1143	49.00 1245	51.00 1295	54.00 1372	60.00 1524	in mm
L1 (BW)	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	68.00 1727	in mm
H	7.00 177	7.50 190	8.25 210	9.25 235	20.88 530	24.62 625	25.62 650	30.75 780	31.00 790	36.25 920	38.25 970	43.38 1100	45.25 1150	50.75 1290	55.12 1400	64.12 1630	70.88 1840	80.75 2050	in mm
(d)	49	62	74	100	150	201	252	303	334	385	436	487	589	633	684	735	779	874	mm
W	14 350	16 400	20 500	20 500	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	in mm
WT (kg)	15 13.5	19 15.5	27 24.5	38 32.5	81 76	140 132	160 147	205 182	260 241	390 370	510 495	750 726	1200 1125	1400 1250	1860 1640	2100 1930	2530 2390	2970 2760	RF BW



TRUNNION MOUNTED CAST STEEL BALL VALVE 300LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

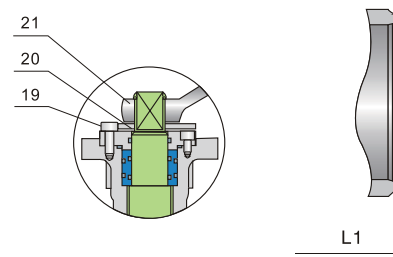
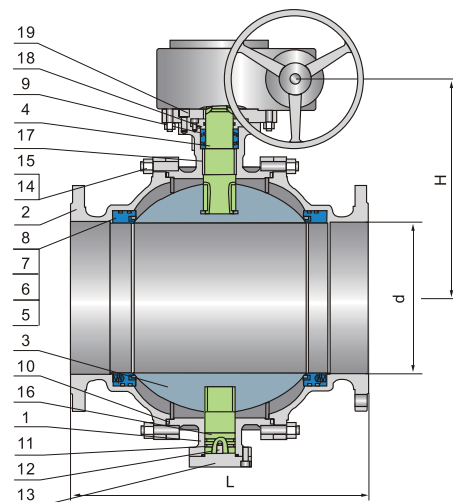
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle		Carbon Steel	

Note: 1). A105+ENP optional

2). Spiral wound construction.



Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	in mm
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ANSI Class 300Lb

L (RF)	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	19.75 502	22.38 568	25.50 648	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	in mm
L1 (BW)	8.50 216	9.50 241	11.12 283	12.00 305	18.00 403	20.50 521	22.00 559	25.00 635	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	in mm
H	7.00 177	7.50 190	8.25 210	9.25 235	20.88 530	24.62 625	26.62 650	30.75 780	31.00 790	36.25 920	38.25 970	43.38 1100	45.25 1150	50.75 1290	55.12 1400	64.12 1630	70.88 1800	in mm
(d)	49	62	74	100	150	201	252	303	334	385	436	487	589	633	684	735	779	mm
W	14 350	16 400	20 500	20 500	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	32 800	in mm
WT (kg)	19 14	24 16	34 25	48 34	101 82	175 145	200 155	255 185	325 238	485 375	635 516	935 782	1500 1280	1750 1375	2225 1825	2450 2180	2870 2260	RF BW



TRUNNION MOUNTED CAST STEEL BALL VALVE 600LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

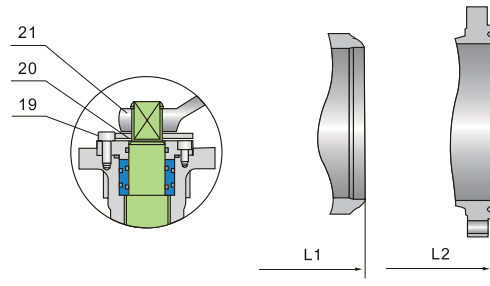
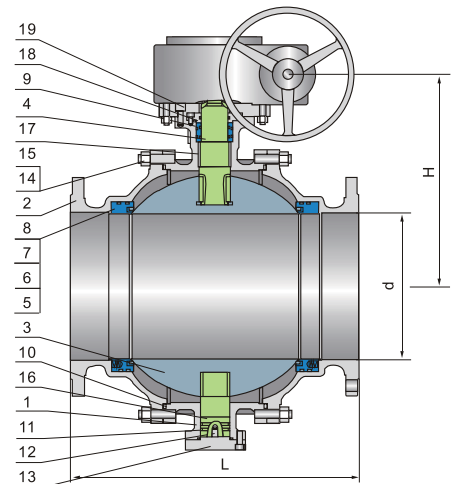
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12 " & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note: 1). A105+ENP optional

2). Spiral wound construction.



Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	in mm
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ANSI Class 600Lb

L (RF)	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	43.00 1092	47.00 1194	55.00 1397	57.00 1448	61.00 1549	in mm
L1 (BW)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	21.12 791	33.12 841	35.12 892	39.12 994	43.12 1095	47.25 1200	55.38 1407	57.50 1461	61.50 1562	in mm
H	7.12 180	7.62 193	8.50 215	9.50 241	21.25 540	25.00 635	26.12 665	31.12 790	31.88 810	36.38 925	38.75 985	44.50 1130	46.62 1185	52.50 1335	57.00 1450	in mm
(d)	49	62	74	100	150	201	252	303	334	385	436	487	589	633	684	mm
W	14 350	16 400	20 500	20 500	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	in mm
WT (kg)	26 19	35 25	58 42	81 51	142 85	287 200	540 395	780 610	1000 805	1300 1010	1700 1350	2100 1656	3400 2775	3800 3125	4500 3790	RF BW



TRUNNION MOUNTED CAST STEEL BALL VALVE 900LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

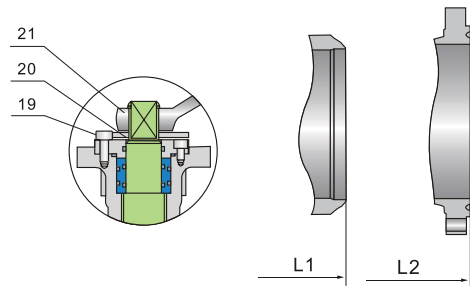
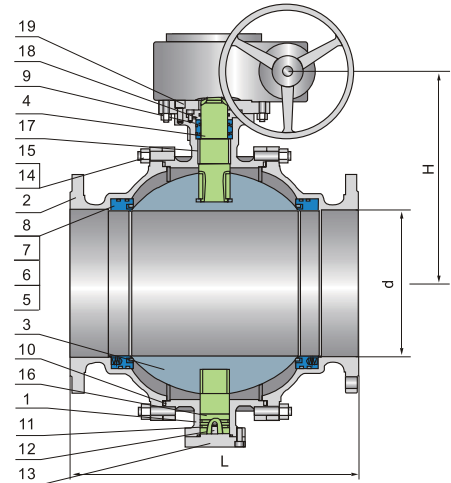
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12 " & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle		Carbon Steel	

Note: 1). A105+ENP optional

2). Spiral wound construction.



Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
ANSI Class 900Lb														
L (RF)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	40.50 1029	44.50 1130	48.00 1219	52.00 1321	61.00 1549	in mm
L1 (BW)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1038	44.88 1140	48.50 1232	52.50 1334	61.75 1568	in mm
H	8.62 219	9.25 235	10.25 260	15.38 390	25.75 655	30.25 770	31.75 805	38.00 965	38.50 980	45.00 1145	47.00 1195	53.50 1360	56.00 1425	in mm
(d)	49	62	74	100	150	201	252	303	322	373	423	471	570	mm
W	20 500	20 500	20 500	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	in mm
WT (kg)	31 23	43 31	68 51	98 61	171 102	345 240	650 480	940 735	1205 965	1565 1215	2050 1625	2535 1995	3950 3335	RF BW



TRUNNION MOUNTED CAST STEEL BALL VALVE 1500LB/2500LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

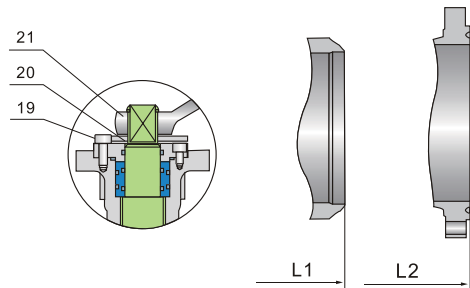
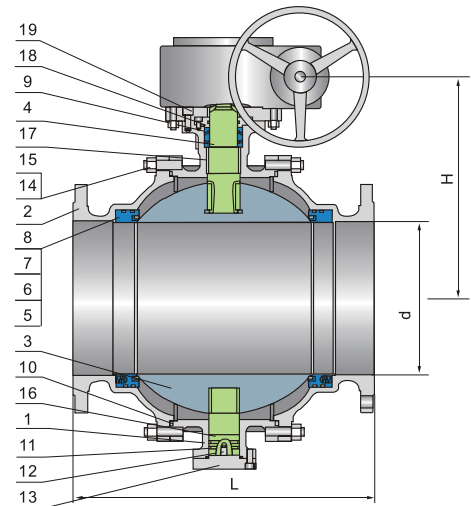
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12 " & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR

Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A216-WCB	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note: 1). A105+ENP optional

2). Spiral wound construction.



Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 1500Lb											ANSI Class 2500Lb								
L/L1 (RF)/(BW)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	39.00 991	44.50 1130	49.50 1257	54.50 1384	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	40.25 1022	50.00 1270	56.00 1422	in mm
L2 (RTJ)	14.62 371	16.62 422	18.62 473	21.62 549	28.00 711	33.12 841	39.38 1000	45.12 1146	50.25 1276	55.38 1407	17.88 454	21.25 540	23.00 584	26.88 683	36.50 927	40.88 1038	50.88 1292	56.88 1445	in mm
H	11.25 285	12.00 306	13.25 338	20.00 506	33.50 852	39.38 1000	41.12 1045	49.38 1255	50.00 1270	58.50 1485	12.00 304	12.88 327	14.25 362	21.25 540	35.88 911	42.12 1070	44.00 1120	53.00 1345	in mm
(d)	49	62	74	100	144	192	239	287	315	360	42	52	62	87	131	179	223	265	mm
W	20 500	20 500	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	20 500	24 600	24 600	24 600	32 800	32 800	32 800	32 800	in mm
WT (kg)	49 33	67 44	106 73	153 87	268 145	540 345	1020 685	1475 1050	1885 1385	2455 1735	55 41	76 55	120 91	173 110	302 182	612 430	1150 855	1665 1315	RF/RTJ BW



BALL VALVE, FS, FL

Design

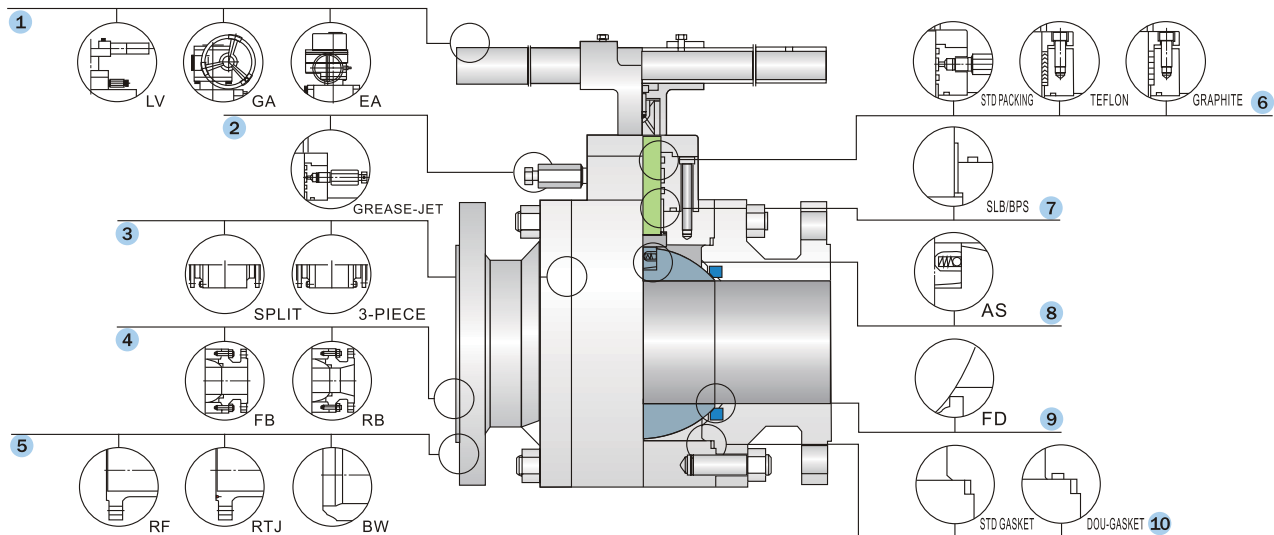
KOJO cast steel ball valve are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American petroleum Institute Standard API 600 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers Standard ASME B 16.34. Valves are available in a complete range of body/bonnet materials and trims.

Rang of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special aplications they can be supplied in other grades of alloy and stainless steel. There' s a full range of trim materials to match any service. Optional packing and gasket materials are available for a full range of service conditions.

Available Modifications For **KOJO** Cast Steel Valves

- * Trim changes
- * End connection Modifications
- * Packing and Gasket Changes
- * Operator Mounting
- * Handwheel Extensions
- * Pressure Equalizing
- * AS or FD
- * Customer specified Coatings
- * Weld End Bore Changes
- * Oxygen & Chlorine Cleaning & Packaging



1 Operating

Extended lever for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

3 BODY & BONNET

Split or 3-piece, split body & bonnet for 8" & Small. Disassembles easily for repair or replacement of internal components.

5 End Connections

A choice of Flanged, RTJ flanged or Butt-welding end for piping flexibility

7 SLB

Self-Lubrication Bearing. Non-maintenance, easy operation, low torque and longer life.

BPS

Blow-out Proof Stem. A pressure-safe stem shoulder design that protects against failure under excess pressure.

9 FD

Fire Durable. Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.

2 Grease-Jet Joint

Installed in prescriptive part accord with the apply and satisfied with ecumenical situations and realize seal in spot with maintenance easily.

4 BORE

Full Bore or Reduced Bore. Full-bore design provides exceptional flow control.

6 Packing

STD Packing adopt high-performance rubber seal ring, STD Packing and TEFLON use situation for smooth pressure. With snapping apply high-pressure situation. Graphite packing use situation for high-temperature.

8 AS

Anti Static. A metallic contact is always granted between ball and stem/ body to discharge eventual statics build-up during service.

10 GASKET

STD Gasket or Dou-Gasket STD Gasket adopt high-performance rubber seal ring. DOU-Gasket adopt high-performance rubber seal ring and spiral wound graphite.



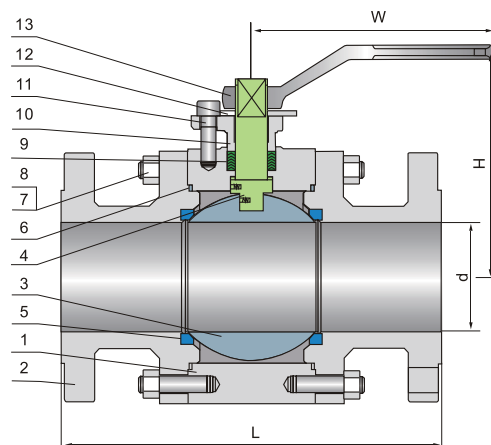
FLOATING FORGED STEEL BALL VALVE 150LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

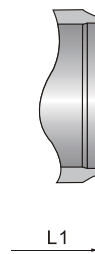
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring	R.PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

Note: 1). A105+ENP optional
2). Spiral wound construction.



Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 60	3 80	4 100	6 150	8 200	10 250	12 300	in mm
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ANSI Class150Lb

L (RF)	4.25 108	4.62 117	5.00 127	6.50 165	7.00 178	7.50 190	8.00 203	9.00 229	15.50 394	18.00 457	21.00 533	24.00 610	in mm
L1 (BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	in mm
H	2.12 55	2.12 55	2.50 65	3.38 85	4.00 100	6.00 150	7.00 180	9.25 235	9.88 250	11.00 280	12.62 320	15.38 390	in mm
(d)	13	19	25	32	49	62	74	100	150	201	252	303	mm
W	8 200	8 200	12 300	12 300	16 400	16 400	24 600	24 600	24 600	24 600	32 800	32 800	in mm
WT (kg)	3.1 2.6	4.1 3.9	6 5.2	9.5 8.7	12.8 11.8	20 19	26 28	45 47	126 131	216 226	270 295	378 393	RF BW



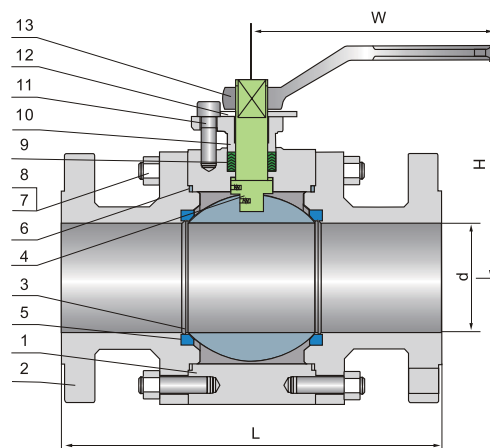
FLOATING FORGED STEEL BALL VALVE 300LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

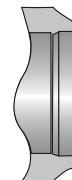
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring	R.PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

Note: 1). A105+ENP optional
2). Spiral wound construction.



L1

Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
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ANSI Class 300Lb

L (RF)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	19.75 502	22.38 568	25.50 648	in mm
L1 (BW)	5.50 140	6.00 152	6.50 165	7.50 190	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	in mm
H	2.12 55	2.12 55	2.50 65	3.38 85	16.00 400	16.00 400	24.00 600	24.00 600	9.88 250	11.00 280	12.62 320	15.38 390	in mm
(d)	13	19	25	32	49	62	74	100	150	201	252	303	mm
W	8 200	8 200	12 300	12 300	10 250	12 300	14 350	19 480	24 600	24 600	32 800	32 800	in mm
WT (kg)	3.5 2.8	4.6 3.1	6.7 4.4	10.5 5.5	14.5 8.7	22 13.5	29 17	50 31	141 108	242 194	302 234	423 325	RF BW



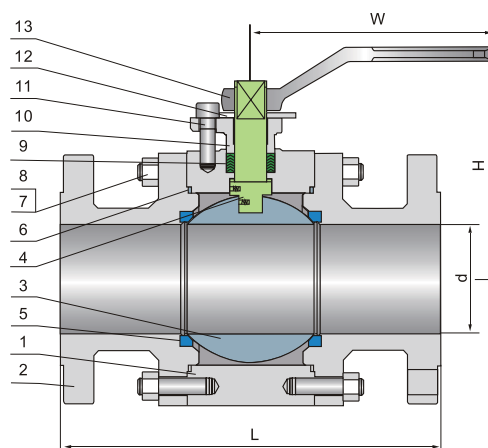
FLOATING FORGED STEEL BALL VALVE 600LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 10434/ISO 14313
FIRE DURABLE, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B 16.34
FACE TO FACE, ASME B 16.10
END FLANGES, ASME B 16.5
BUTTWELDING ENDS, ASME B 16.25
INSPECTION AND TEST, API 598/API 6D

Design description:

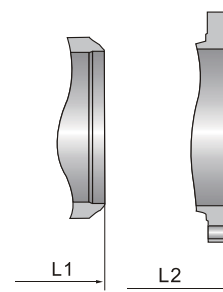
FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
FLOATING BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of parts

No	Part Name	ASTM Material		
		Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat Ring	R.PTFE		
6	Bonnet Gasket	Graphite+304 ²⁾	PTFE	Graphite+304 ²⁾
7	Bonnet Stud	A193-B7	A193-B8	A320-L7
8	Bonnet Stud Nut	A194-2H	A194-8	A194-4
9	Packing	PTFE		
10	Gland	A105	A182-F316	A350-LF2
11	Gland Bolt	A193-B7	A193-B8	A193-B7
12	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
13	Handle	Carbon Steel		

Note: 1). A105+ENP optional
2). Spiral wound construction.



Dimensions data

NPS DN	1/2 15	3/4 20	1 25	1 1/2 40	2 50	2 1/2 40	3 80	4 100	6 150	in mm
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ANSI Class 600Lb

L (RF)	6.50 165	7.50 190	8.50 216	9.50 241	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	in mm
L1 (BW)	- -	- -	- -	- -	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	in mm
H	2.25 58	2.25 58	2.62 68	3.50 89	4.12 105	6.25 158	7.50 190	9.75 247	10.38 262	in mm
(d)	13	19	25	32	49	62	74	100	150	mm
W	8 200	12 300	12 300	16 400	16 400	24 600	24 600	24 600	32 800	in mm
WT (kg)	4.5 3.8	5.5 4.1	8 5.6	12.5 7	18 12	27 18	35 23	61 43	172 139	RF BW



BALL VALVE FS, TM

Design

KOJO steel ball valve are designed and manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute Standard API 608 & API 6D, British Standard BS 5351 and generally conform to American Society of Mechanical Engineers standard ASME B 16.34. Valves are available in a complete range of body/bonnet materials and trims.

Rang of Materials

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steel. For special applications they can be supplied in other grades of alloy and stainless steel. There's a full range of trim materials to match any service conditions.

Available Modifications for KOJO Cast Steel Valves

*Trim changes

*End Connection Modifications

*Packing and Gasket Changes

*Operator Mounting

*Handwheel Extensions

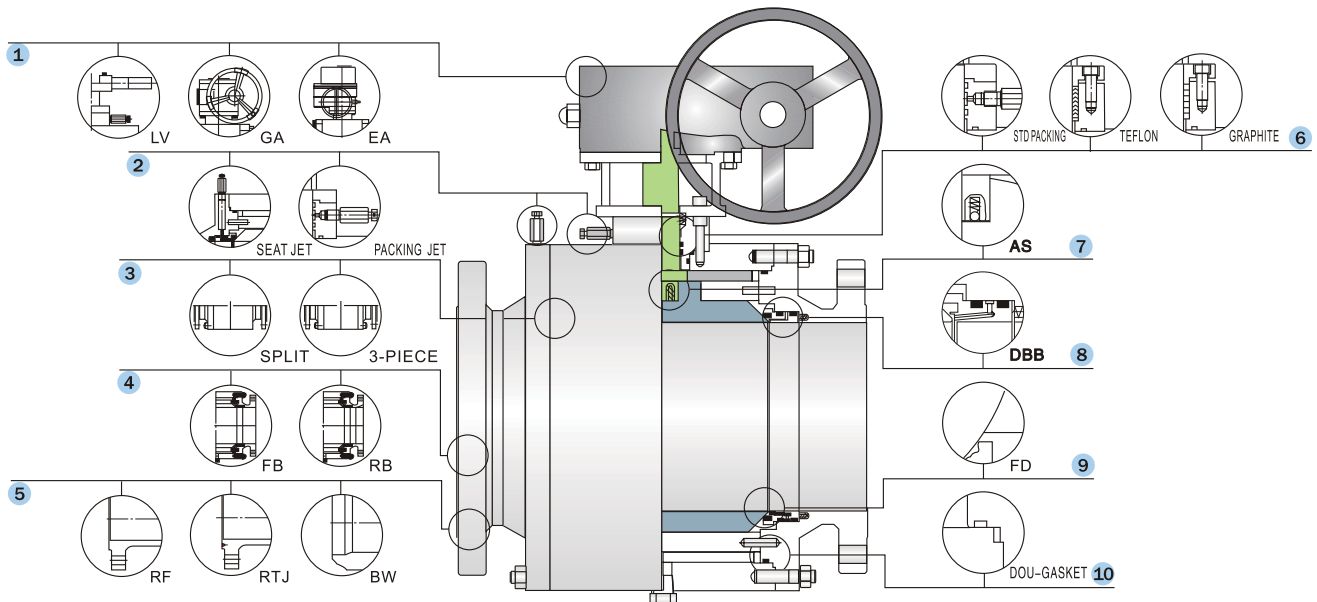
*Pressure Equalizing

*AS or FD

*Customer Specified Coatings

*Weld End Bore Changes

*Oxygen & Chlorine Cleaning & Packaging



1 Operating

Extended lever for easy operation. Also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

3 BODY & BONNET

Split or 3-piece, split body & bonnet for 4" & Small. Disassembles easily for repair or replacement of internal components.

5 End Connections

A choice of Flanged, RTJ flanged or Butt welding end for piping flexibility.

7 AS

Anti Static. A metallic contact is always granted between ball and stem/body to discharge eventual statics build-up during service.

9 FD

Fire Durable. Designed to API 607 or BS 6755 to grant their operation suitability in case of fire. Secondary metal-to-metal seal acts as backup if primary seal is destroyed by fire. Valves ordered for compliance with API 607 will be provided with graphite packing and gaskets.

2 Grease - Jet Joint 4 BORE

Installed in prescriptive part accord with the apply and satisfied with ecumenical situations and realize seal in spot with maintenance easily.

Full Bore or Reduced Bore. Full-bore design provides exceptional flow control.

6 Packing

STD Packing adopt high-performance rubber seal ring, STD Packing and TEFLON use situation for smooth pressure. With snap ring apply high-pressure situation. Graphite packing use situation for high-temperature.

8 DDB

Double Block & Bleed. The body cavity is isolated when the ball is in either fully closed or fully opened position, the medium entrapped in it can easily be bled to avoid overpressure.

10 GASKET

Adopt high-performance rubber seal ring and spiral wound graphite.



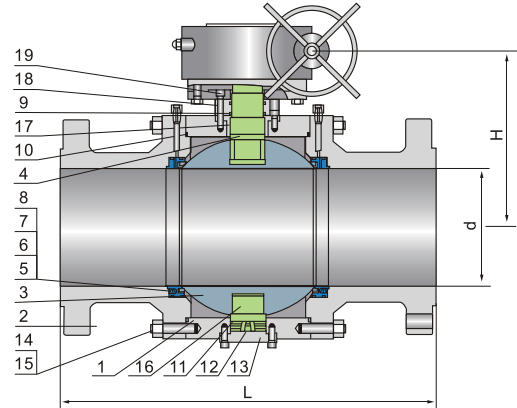
TRUNNION MOUNTED FORGED STEEL BALL VALVE 150LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FORE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

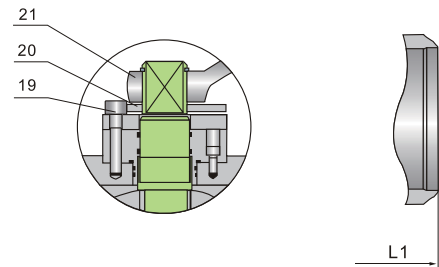


Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	18Cr -9Ni -2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O - Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A182-F304	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFF	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-87
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note: 1) .A105+ENP optional.

2) .Spiral wound construction.



Dimensions data

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	36 900	in mm
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ANSI Class 150Lb

L (RF)	7.00 178	7.50 190	8.00 203	9.00 229	15.50 394	18.00 457	21.00 533	24.00 610	27.00 686	30.00 762	34.00 864	36.00 914	42.00 1067	45.00 1143	49.00 1245	51.00 1295	54.00 1372	60.00 1524	in mm
L1 (BW)	8.50 216	9.50 241	11.12 283	12.00 305	18.00 457	20.50 521	22.00 559	25.00 635	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	68.00 1727	in mm
H	4.00 120	6.00 150	7.00 180	9.25 235	9.88 250	11.00 280	12.62 320	15.38 390	16.50 420	21.88 555	23.62 600	25.00 635	28.00 710	29.50 750	31.50 800	34.00 865	36.00 915	38.50 980	in mm
(d)	49	62	74	100	150	201	252	303	334	385	436	487	589	633	684	735	779	874	mm
W	16 400	16 400	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	40 1000	40 1000	in mm
WT (kg)	28 25	35 28	55 49	80 71	190 182	290 277	445 423	570 553	780 747	1520 1481	2300 2266	2500 2460	3950 3904	4890 4939	6300 6362	7100 8149	8950 9000	13500 13570	RF BW



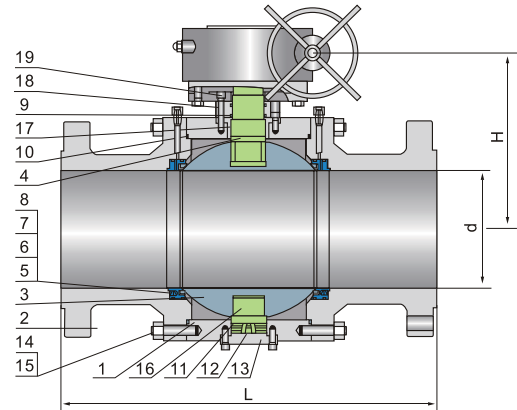
TRUNNION MOUNTED FORGED STEEL BALL VALVE 300LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FORE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

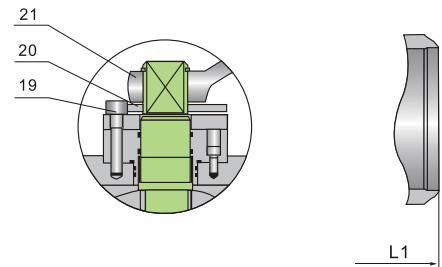


Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	18Cr -9Ni -2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O - Ring	NBR	Viton	Viton
9	Stem O - Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A182-F304	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFF	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-87
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note: 1) .A105+ENP optional.

2) .Spiral wound construction.



Dimensions data

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	30 750	32 800	in mm
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ANSI Class 300Lb

L (RF)	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	19.75 502	22.38 568	25.50 648	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	in mm
L1 (BW)	8.50 216	9.50 241	11.12 283	12.00 305	18.00 403	20.50 521	22.00 559	25.00 635	30.00 762	33.00 838	36.00 914	39.00 991	45.00 1143	49.00 1245	53.00 1346	55.00 1397	60.00 1524	in mm
H	4.00 120	6.00 150	7.00 180	9.25 235	9.88 250	11.00 280	12.62 320	15.38 390	16.50 420	21.88 555	23.62 600	25.00 635	28.00 710	29.50 750	31.50 800	34.00 865	36.00 915	in mm
(d)	49	62	74	100	150	201	252	303	334	385	436	487	589	633	684	735	779	mm
W	16 400	16 400	24 600	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	40 1000	in mm
WT (kg)	30 24	40 31	60 49	90 72	200 169	325 280	490 424	690 598	990 872	1810 1665	2620 2440	2860 2635	4430 4075	5430 4880	6810 6225	7655 7115	9590 9230	RF BW



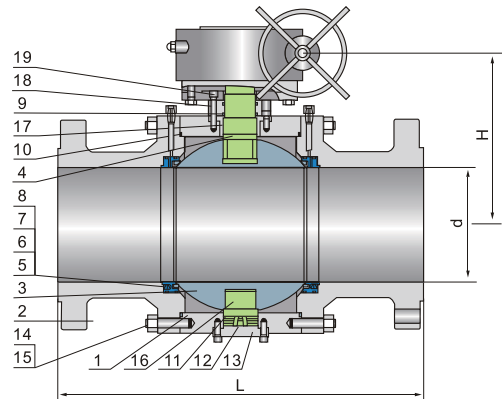
TRUNNION MOUNTED FORGED STEEL BALL VALVE 600LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FORE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

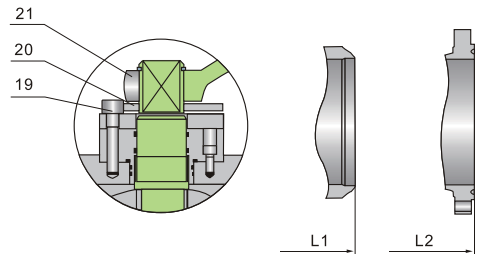


Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	18Cr -9Ni -2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O - Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A182-F304	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFF	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-87
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note: 1) .A105+ENP optional.

2) .Spiral wound construction.



Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	26 650	28 700	in mm
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ANSI Class 600Lb

L (RF)	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	35.00 889	39.00 991	43.00 1092	47.00 1194	55.00 1397	57.00 1448	61.00 1549	in mm
L1 (BW)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	35.12 892	39.12 994	43.12 1095	47.25 1200	55.38 1407	57.50 1461	61.50 1562	in mm
H	6.50 165	7.00 180	7.88 200	11.00 280	12.25 310	14.00 355	16.12 410	18.00 455	19.25 490	21.00 535	24.88 630	25.62 650	30.12 765	31.88 810	34.62 880	in mm
(d)	49	62	74	100	150	201	252	303	334	385	436	487	589	633	684	mm
W	16 400	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	40 1000	40 1000	in mm
WT (kg)	34 27	53 43	65 49	125 95	245 188	505 418	640 495	910 740	1380 1185	2250 1960	3400 3050	3850 3406	4900 4275	6700 6025	8300 7590	RF BW



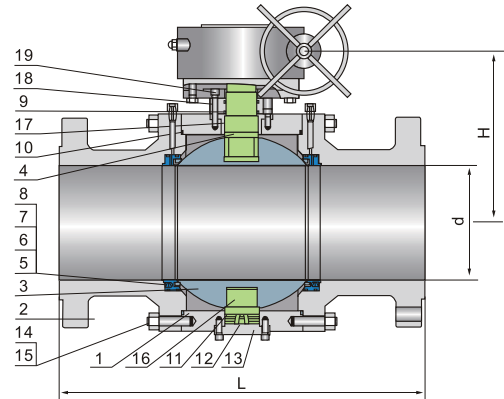
TRUNNION MOUNTED FORGED STEEL BALL VALVE 900LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FORE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

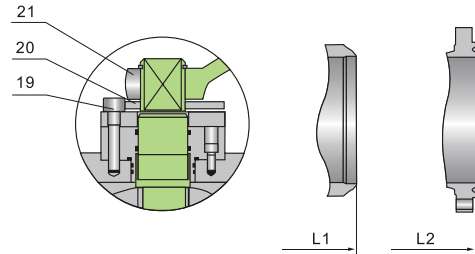


Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	18Cr -9Ni -2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O - Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A182-F304	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFF	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-87
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note:1) .A105+ENP optional.

2) .Spiral wound construction.



Dimensions data

NPS DN	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	in mm
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ANSI Class 900Lb

L (RF)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 965	40.50 1029	44.50 1130	48.00 1219	52.00 1321	61.00 1549	in mm
L1 (BW)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1038	44.88 1140	48.50 1232	52.50 1334	61.75 1568	in mm
H	6.72 170	7.50 190	8.25 210	11.38 290	12.62 320	15.38 390	17.00 430	18.50 470	20.88 530	24.00 610	26.00 660	27.50 700	30.75 780	in mm
(d)	49	62	74	100	150	201	252	303	322	373	423	471	570	mm
W	24 600	24 600	24 600	32 800	32 800	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	40 1000	in mm
WT (kg)	45 37	65 53	73 56	135 98	360 291	650 545	930 760	1350 1145	1890 1650	3100 2750	4300 3875	4950 4410	7100 6485	RF BW



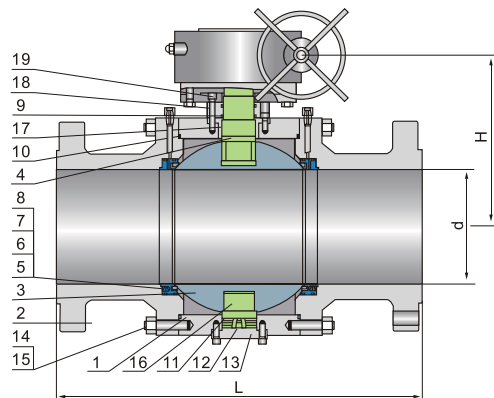
TRUNNION MOUNTED FORGED STEEL BALL VALVE 1500LB/2500LB

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FORE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR

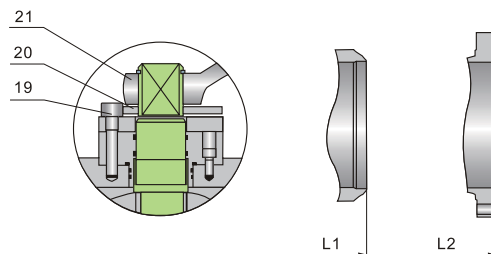


Materials of parts

NO	Part Name	ASTM Material		
		Carbon Steel	18Cr -9Ni -2Mo	Carbon Steel
1	Body	A105	A182-F316	A350-LF2
2	Bonnet	A105	A182-F316	A350-LF2
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O - Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Grounding Plunger	A182-F304	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFF	316+PTFE	304+PTFE
18	Gland	A105	A182-F316	A350-LF2
19	Gland Bolt	A193-B7	A193-B8	A193-87
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note: 1) .A105+ENP optional.

2) .Spiral wound construction.



Dimensions data

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
ANSI Class 1500Lb											ANSI Class 2500Lb								
L/L1 (RF)/(BW)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	39.00 991	44.50 1130	49.50 1257	54.50 1384	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	40.25 1022	50.00 1270	56.00 1422	in mm
L2 (RTJ)	14.62 371	16.62 422	18.62 473	21.62 549	28.00 711	33.12 841	39.38 1000	45.12 1146	50.25 1276	55.38 1407	17.88 454	21.25 540	23.00 584	26.88 683	36.50 927	40.88 1038	50.88 1292	56.88 1445	in mm
H	6.75 170	7.50 190	8.25 210	11.38 290	13.00 330	15.75 400	17.38 440	22.00 560	25.25 640	27.12 690	7.50 190	9.00 230	11.00 280	14.12 360	15.75 400	18.88 480	20.50 520	26.38 670	in mm
(d)	49	62	74	100	144	192	239	287	315	360	42	52	62	87	131	179	223	265	mm
W	24 600	24 600	32 800	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	24 600	32 800	32 800	32 800	32 800	40 1000	40 1000	40 1000	in mm
WT (kg)	55 40	75 55	95 65	150 115	540 420	880 685	1360 1025	1980 1555	3100 2600	4650 3930	68 54	95 74	120 91	185 122	675 555	1100 918	1650 1355	2300 1950	RF/RTJ BW



TOP ENTRY BALL VALVE

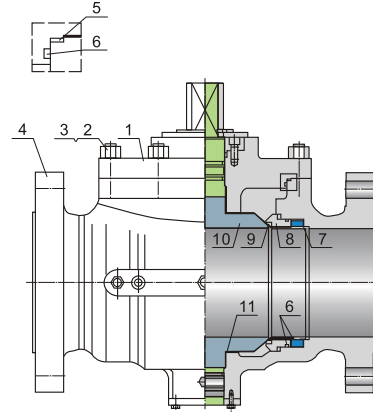
150lb/300lb

Applicable standards:

STEEL BALL VALVES, API 608/API 6D
STEEL BALL VALVES, ISO 14313
FIRE STATIC, API 607
ANTI STATIC, API 608
STEEL VALVES, ASME B16.34
FACE TO FACE, ASME B16.10
END FLANGES, ASME B16.5
BURRWELDING ENDS, ASME B16.25
INSPECTION AND TEST, API 598/API 6D

Design description

FULL PORT DESIGN
BB, BOLTED BONNET, SPLIT BODY
THREE PIECE BODY FOR 12 " & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FORE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTTWELDING ENDS
AVAILABLE WITH WG OPERATOR



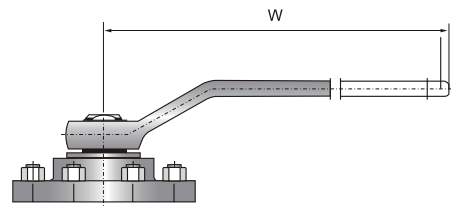
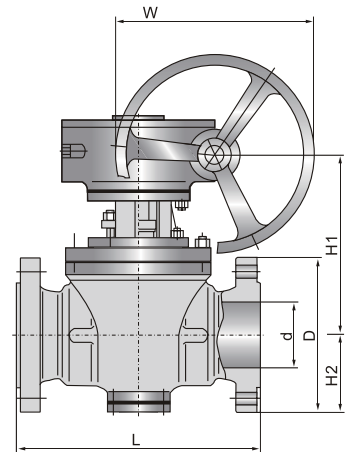
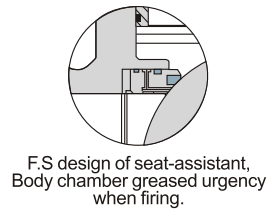
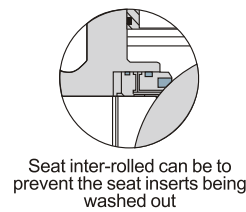
Main Types and Connecting Dimension

Class 150

Size	G	L	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	292	170	76	285	46
3	76	356	21	95	285	83
4	102	432	250	115	400	156
6	152	559	265	140	*400	256
8	203	660	355	172	*400	453
10	254	787	385	203	*600	622
12	305	838	400	242	*600	747
14	337	889	450	267	*600	959
16	387	991	510	299	*600	1220
18	438	1092	565	318	*600	1640
20	489	1194	620	349	*600	2118
24	591	1397	680	407	*700	2950

Class 300

Size	G	L	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	292	170	83	285	49
3	76	356	21	105	285	87
4	102	432	250	127	400	164
6	152	559	265	159	*400	272
8	203	660	355	191	*500	479
10	254	787	385	222	*600	657
12	305	838	400	261	*600	783
14	337	889	450	292	*600	1007
16	387	991	510	324	*600	1281
18	438	1092	565	256	*700	1722
20	489	1194	620	388	*700	2224
24	591	1397	680	457	*700	3100



Form of Major Part Material

Parts No.	Parts name	Materials		
		Carbon Steel	Low Temp. Steel	Stainless Steel
1	Body	ASTM A216-WCB	ASTM A352-LCB/LCC	ASTM A351-CF8/CF8M
2	Bonnet	ASTM A216-WCB	ASTM A352-LCB/LCC	ASTM A351-CF8/CF8M
3	Nut	ASTM A194-2H/2HM	ASTM A194 4	ASTM A194-2HM8
4	Bolt	ASTM A193-B7/B7M	ASTM A320 L7	ASTM A193-B7M/B8
5	Gasket	304+PTFE	304+PTFE	304+PTFE
6	O-ring	VITON	VITON	VITON
7	Spring	INCONELX-750	INCONELX-750	INCONELX-750
8	Seat ring	ASTM A105	ASTM A182 F304/F316	ASTM A182 F304/F316
9	Seat insert	RPTFE	RPTFE	RPTFE
10	Ball	ASTM A182-F6a	ASTM A182-F304	ASTM A182 F304/F316
11	Stem bearing	304+PTFE	304+PTFE	304+PTFE