

BALL VALVE, CS, FL

Design

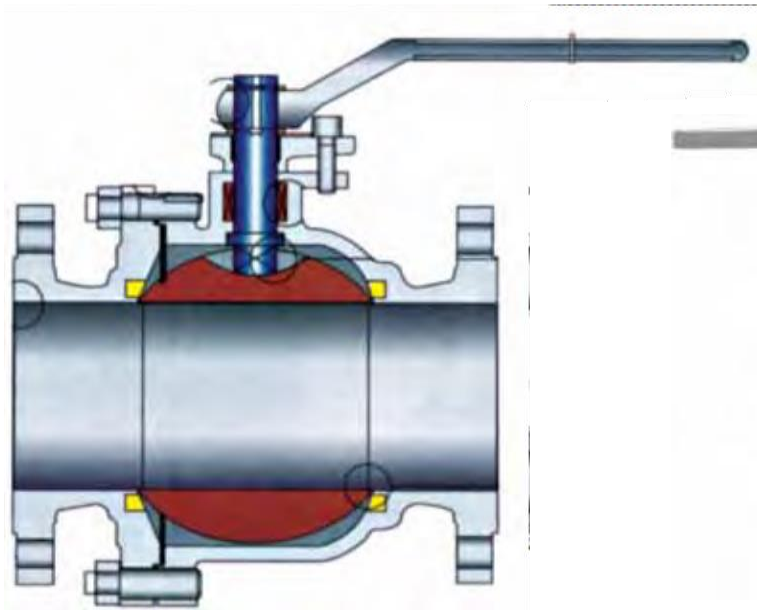
Our ball valves are designed & manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American Petroleum Institute standard API608 & API 6D, British standard Bs5351 and generally, Conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Range of materials

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

Available Modifications for steel valves

Trim Changes	Pressure Equalizing
End Connection Modifications	As or fd
Packing and Gasket Change	Customer Specified Coatings
Operator Mounting	Weld End Bore Changes
Handwheel Extensions	Oxygen & Chlorine Clearing & Packaging



Operation

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

Body & Bonnet

Split or 3-piece, split body & bonnet for 12" & small. Disassembles easily for repair component

Bore

Full bore or reduced bore. Full-bore design provides exceptional flow control.

End Connections

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

Packing

Std packing multiple V-teflon packing combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing is used for high-temperature situation.

BPS

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

AS

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

FS

Fire safe designed to API607 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 API607 will be provided with graphite packing and gaskets.

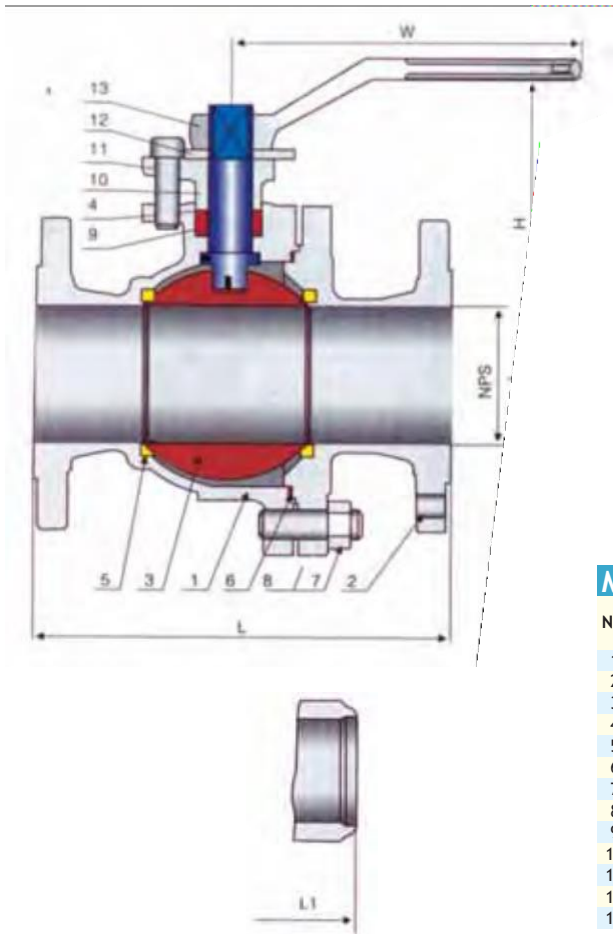
FLOATING, CAST STEEL BALL VALVE 150LB

Applicable standards:

STEEL BALL VALVES API 608/API6D
 STEEL BALL VALVES ISO 14313
 FIRE SAFE, API 607
 ANTI STATICS, API 608
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598/API 6D

Design descriptions:

FULL PORT DESIGN
 BB. BOLTED BONNET
 FLOATING BALL TYPE
 BLOW-OUT PROOF STEM
 FIRE DURABLE CONSTRUCTION
 ANTI STATIC DEVICE
 STOPPER DEVICE
 ISO 5211 MOUNTING PAD
 FLANGED OR BUTT WELDING ENDS
 AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	Stainless Steel	Low Temperature Carbon Steel
1	Body	A216-WCb	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304	A182-F316	A182-F304
4	Stem	A276-304	A276-316	A276-304
5	Seat ring		R.PTFE	
6	Bonnet Gasket	Graphite+304	PTFE	Graphite+304
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-L7
12	Stop Plate	Carbon Steel	Carbon steel+Zn	Carbon steel
13	Handle		Carbon steel	

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

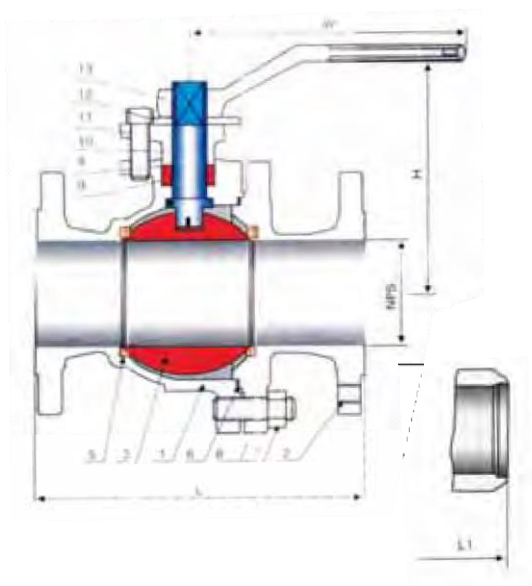
Dimensional datas of ANSI Class 150 Lb

NPS DN	1/2 15	3/4 20	1 25	1 40	2 50	2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
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	2.12 155	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
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	BW

FLOATING, CAST STEEL BALL VALVE 300LB/600LB

Applicable standards:

STEEL BALL VALVES API 608/API6D
 STEEL BALL VALVES ISO 14313
 FIRE SAFE, API 607
 ANTI STATICS, API 608
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598/API 6D



Design descriptions:

FULL PORT DESIGN
 BB. BOLTED BONNET
 FLOATING BALL TYPE
 BLOW-OUT PROOF STEM
 FIRE DURABLE CONSTRUCTION
 ANTI STATIC DEVICE
 STOPPER DEVICE
 ISO 5211 MOUNTING PAD
 FLANGED OR BUTT WELDING ENDS
 AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	Stainless Steel	Low Temperature Carbon Steel
1	Body	A216-WCb	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304	A182-F316	A182-F304
4	Stem	A276-304	A276-316	A276-304
5	Seat ring		R.PTFE	
6	Bonnet Gasket	Graphite+304	PTFE	Graphite+304
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-L7
12	Stop Plate	Carbon Steel	Carbon steel+Zn	Carbon steel
13	Handle		Carbon steel	

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

Dimensional datas of ANSI Class 300 Lb

NPS DN	1/2 15	3/4 20	1 25	1 40	2 50	2 65	3 80	4 100	6 150	8 200	10 250	in mm
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	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	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	in mm
W	5 130	5 130	6 160	8 200	14 350	16 400	20 500	20 500	24 600	32 800	32 800	in mm
Wt(kg.)	2.3 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	BW

Dimensional datas of ANSI Class 600 Lb

NPS DN	1/2 15	3/4 20	1 25	1 40	2 50	2 65	3 80	in mm
L (RF/BW)	6.50 165	7.50 190	8.50 216	9.50 241	11.50 292	13.00 330	14.00 356	in mm
L2 (RTJ)	-- --	-- --	-- --	-- --	11.62 295	13.12 333	14.12 359	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	in mm
W	5 130	6 160	8 200	14 350	16 400	20 500	24 600	in mm
Wt(kg.)	3.3 2.6	4.5 3.1	7.2 4.8	13.5 8	19 3	31 22	39 27	BW

BALL VALVE, CS, TM

Design

Our steel ball valves are designed & manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American Petroleum Institute standard API608 & API 6D, British standard Bs5351 and generally, Conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

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Available Modifications for Steel Valves

Trim Changes	Pressure Equalizing
End Connection Modifications	As or fd
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Operator Mounting	Weld End Bore Changes
Handwheel Extensions	Oxygen & Chlorine Clearing & Packaging



Operation

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

Packing

Std packing multiple V-teflon packing, combined with live loading, maintains packing compression under high-cycle and severe service applications. Graphite packing is used for high-temperature situation.

Body & Bonnet

Split or 3-piece, split body & bonnet for 12" & small. Disassembles easily for repair component

BPS

Blow-out proof stem a pressure-safe stem shoulder design that protects against failure under excess pressure.

Bore

Full bore or reduced bore. Full-bore design provides exceptional flow control.

AS

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

End Connections

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

FS

Fire safe designed to API607 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 API607 will be provided with graphite packing and gaskets.

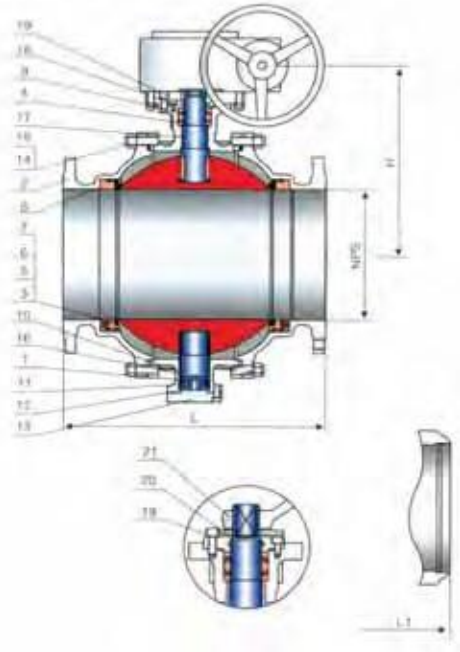
TRUNNION MOUNTED, CAST STEEL BALL VALVE 150LB/ 300LB

Applicable standards :

STEEL BALL VALVES API 608/API6D
 STEEL BALL VALVES ISO 14313
 FIRE SAFE, API 607
 ANTI STATICS, API 608
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598/API 6D

Design descriptions :

FULL PORT DESIGN
 SPLIT BODY THREE PIECES BODY FOR 12" & ABOVE
 TRUNNION MOUNTED BALL TYPE
 BLOW-OUT PROOF STEM
 FIRE DURABLE CONSTRUCTION
 ANTI STATIC DEVICE
 STOPPER DEVICE
 ISO 5211 MOUNTING PAD
 FLANGED OR BUTT WELDING ENDS
 AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	Stainless Steel	Low Temperature Carbon Steel
1	Body	A216-WCb	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304	A182-F316	A182-F304
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350LF2+ENP
6	Seat Insert		Glass Filled PTFE	
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NPR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304	Graphite+316	Graphite+304
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	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.

Dimensional datas of ANSI Class 150 Lb

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	mm
L	7.00	7.50	8.00	9.00	15.50	18	21.00	24.00	27.00	30.00	34.00	36.00	42.00	45.00	49.00	51.00	54.00	60.00	in
(RF)	178	190	203	229	394	457	533	610	686	762	864	914	1067	1143	1245	1295	1372	1524	mm
L1	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	in
(BW)	216	241	283	305	457	521	559	635	762	838	914	991	1143	1245	1346	1397	1524	1727	mm
H	7.00	7.50	8.25	9.25	20.88	24.62	25.62	30.75	31.00	36.25	38.25	43.38	45.25	50.75	55.12	64.12	70.88	80.75	in
	177	190	210	235	530	625	650	780	790	920	970	1100	1150	1290	1400	1630	1840	2050	mm
W	14	16	20	20	24	24	24	24	32	32	32	32	32	32	32	32	32	32	in
	350	400	500	500	600	600	600	600	800	800	800	800	800	800	800	800	800	800	mm
Wt(kg.)	15	19	27	38	81	140	160	205	260	390	510	750	1200	1400	1860	2100	2530	2970	
	13.5	15.5	24.5	32.5	76	132	147	182	241	370	495	726	1125	1250	1640	1930	2390	2760	BW

Dimensional datas of ANSI Class 300 Lb

NPS	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	in
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	mm
L	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	5300	55.00	60.00	--	in
(RF)	216	241	283	305	403	502	568	648	762	838	914	991	1143	1245	1346	1397	1524	--	mm
L1	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	--	in
(BW)	216	241	283	305	403	521	559	635	762	838	914	991	1143	1245	1346	1397	1524	--	mm
H	7.00	7.50	8.25	9.25	20.88	24.62	25.62	30.75	31.00	36.25	38.25	43.38	45.25	50.75	55.12	64.12	70.88	--	in
	177	190	210	235	530	625	650	780	790	920	970	1100	1150	1290	1400	1630	1840	--	mm
W	14	16	20	20	24	24	24	24	32	32	32	32	32	32	32	32	32	--	in
	350	400	500	500	600	600	600	600	800	800	800	800	800	800	800	800	800	--	mm
Wt(kg.)	19	24	34	48	101	175	200	225	325	485	635	935	1500	1750	2450	2225	2870	--	
	14	16	25	34	82	145	155	185	238	375	516	782	1280	1375	2180	1825	2260	--	BW

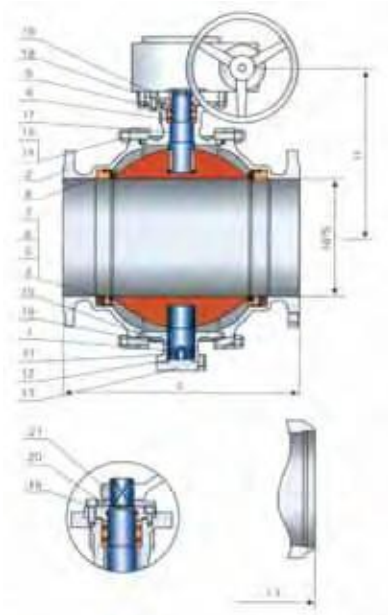
TRUNNION MOUNTED, CAST STEEL BALL VALVE 600LB/900LB

Applicable standards :

STEEL BALL VALVES API 608/API6D
STEEL BALL VALVES ISO 14313
FIRE SAFE, API 607
ANTI STATICS, API 608
STEEL VALVES ASME B16.34
FACE TO FACE ASME B16.10
END FLANGES ASME B16.5
BUTT WELDING ENDS ASME B16.25
INSPECTION AND TEST API 598/API 6D

Design descriptions :

FULL PORT DESIGN
B.B. BOLTED BONNET. SPLIT BODY
THREE PIECES BODY FOR 12" & ABOVE
TRUNNION MOUNTED BALL TYPE
BLOW-OUT PROOF STEM
FIRE DURABLE CONSTRUCTION
ANTI STATIC DEVICE
STOPPER DEVICE
ISO 5211 MOUNTING PAD
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	Stainless Steel	Low Temperature Carbon Steel
1	Body	A216-WCb	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304	A182-F316	A182-F304
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350LF2+ENP
6	Seat Insert		Glass Filled PTFE	
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NPR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304	Graphite+316	Graphite+304
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	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.

Dimensional datas of ANSI Class 600 Lb

NPS DN	2 50	2 ½ 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
L (RF/BW)	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
L2 (RTJ)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 664	31.12 791	33.12 841	30.00 762	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	31.00 790	36.38 925	38.75 985	44.50 1130	46.62 1185	52.50 1335	57.00 1450	in 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	BW

Dimensional datas of ANSI Class 900 Lb

NPS DN	2 50	2 ½ 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
L (RF/BW)	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
L2 (RTJ)	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
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	BW

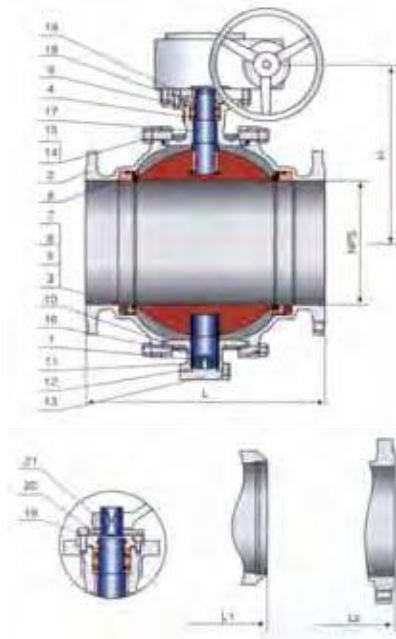
TRUNNION MOUNTED, CAST STEEL BALL VALVE 1500LB/2500LB

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 B.B. BOLTED BONNET. SPLIT BODY
 THREE PIECES BODY FOR 12" & ABOVE
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4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350LF2+ENP
6	Seat Insert		Glass Filled PTFE	
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NPR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304	Graphite+316	Graphite+304
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	A216-WCB	A182-F316	A182-F304
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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.

Dimensional datas of ANSI Class 1500 Lb

NPS	2	2 ½	3	4	6	8	10	12	14	16	in
DN	50	65	80	100	150	200	250	300	350	400	mm
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	in mm
L2 (RTJ)	14.62 371	16.62 422	18.62 473	18.62 473	28.00 711	33.12 841	39.38 1000	45.12 1146	20.25 1276	44.38 1407	in mm
H	11.25 285	12.00 305	13.25 383	13.25 338	33.50 852	39.38 1000	41.12 1045	49.38 1255	50.00 1270	58.50 1485	in mm
W	20 500	20 500	24 600	24 600	24 600	32 800	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	RF/RTJ BW

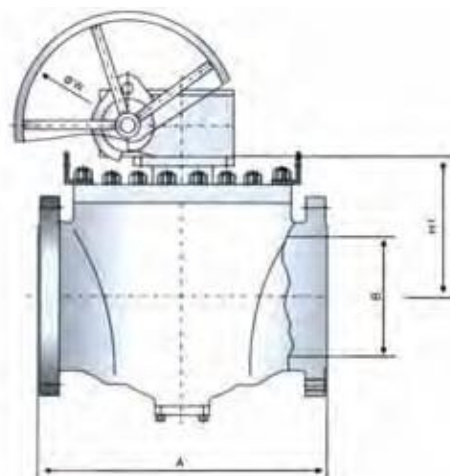
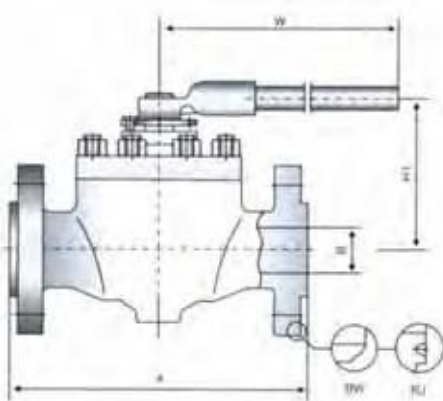
Dimensional datas of ANSI Class 2500 Lb

NPS	2	2 ½	3	4	6	8	10	12	14	16	in
DN	50	65	80	100	150	200	250	300	350	400	mm
L/L1 (RF/BW)	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)	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	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
W	20 500	24 600	24 600	24 600	32 800	32 800	32 800	32 800	-- --	-- --	in mm
Wt(kg.)	55 41	76 55	120 91	173 110	302 182	612 430	1150 855	1665 1315	-- --	-- --	RF/RTJ BW

TOP ENTRY COMBINATION BALL VALVE 150LB/300LB

Applicable standards:

DESIGN & MANUFACTURE CONFORM WITH: API 6D/ISO 14313, ASME B16.34
 CONNECTION DIMENSION CONFORMS WITH: ASME B16.5, DN EN 1092
 FIRE RESISTANCE DESIGN CONFORMS WITH: API 607/ISO 10497
 INSPECTION & TEST CONFORMS WITH : API 6D, ISO 5208, API 598
 MATERIAL CONFORMS WITH: ISO 15156



Dimensional datas

NPS inch	DN	A mm	B mm	H1 mm	W mm	WT kg.	T N.m	NPS inch	DN	A mm	B mm	H1 mm	W mm	WT kg.	T N.m
ANSI CLASS 150LB															
2	50	292	51	207	300	30	50	1 1/4"	350	889	334	455	600	760	2426
3	80	356	76	223	400	57	65	1 1/2"	400	991	385	460	600	1100	3016
4	100	432	100	280	450	100	151	1 3/4"	450	1092	436	503	600	1512	4574
6"	150	559	150	275	460	215	320	2"	500	1194	487	560	700	1930	6016
8"	200	660	201	321	460	407	1020	2 1/4"	600	1397	589	610	700	3200	9750
10"	250	787	252	355	600	560	1085	2 3/4"	700	1549	684	730	700	4600	14540
12"	300	838	303	470	600	710	1562	3"	750	1651	735	800	760	5630	18005

Dimensional datas

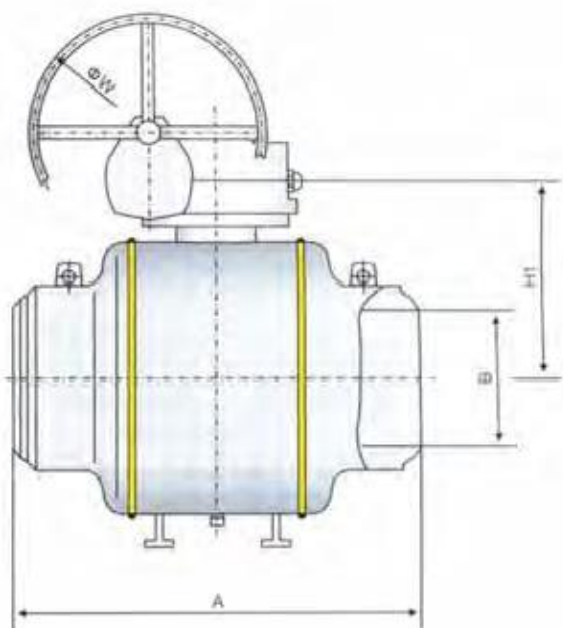
NPS inch	DN	A mm	B mm	H1 mm	W mm	WT kg.	T N.m	NPS inch	DN	A mm	B mm	H1 mm	W mm	WT kg.	T N.m
ANSI CLASS 300LB															
2	50	292	51	211	300	36	86	1 1/4"	350	889	334	560	600	766	3800
3	80	356	76	226	400	63	110	1 1/2"	400	991	385	480	600	1106	5376
4	100	432	100	286	450	106	270	1 3/4"	450	1092	436	508	600	1519	8000
6"	150	559	150	282	460	221	500	2"	500	1194	487	565	700	2010	10610
8"	200	660	201	325	460	412	1620	2 1/4"	600	1397	589	617	700	3208	17280
10"	250	787	252	360	600	566	1824	2 3/4"	700	1549	684	678	700	4607	25102
12"	300	838	303	420	600	715	2632	3"	750	1651	735	738	760	5638	31664

Note : Turbine Drives

FULL WELDED TRUNNION MOUNTED, CAST STEEL BALL VALVE 300LB

Applicable standards:

DESIGN & MANUFACTURE CONFORM WITH: API 6D/ISO 14313, ASME B16.34
 CONNECTION DIMENSION CONFORMS WITH: ASME B16.25, DN EN 12627
 FIRE RESISTANCE DESIGN CONFORMS WITH: API 607/ISO 10497
 INSPECTION & TEST CONFORMS WITH : API 6D, ISO 5208, API 598
 MATERIAL CONFORMS WITH: ISO 15156



Dimensional datas

NPS inch	DN	A mm	B mm	H1 mm	W mm	WT kg.	T N.m	NPS inch	DN	A mm	B mm	H1 mm	W mm	WT kg.	T N.m
ANSI CLASS 300LB															
2	50	216	51	170	300	16	86	14	350	762	334	420	600	980	3800
3	80	283	76	185	500	35	110	16	400	838	385	470	600	1210	5376
4	100	305	100	210	550	60	270	18	450	914	436	350	600	1520	8000
6	150	457	150	260	460	150	500	20	500	991	487	590	600	2010	10610
8	200	521	201	310	460	250	1620	24	600	1143	589	600	760	2520	17280
10	250	559	252	345	600	350	1824	28	700	1346	684	750	760	3600	25102
12	300	635	303	390	600	580	2632	30	750	1397	735	850	760	4620	31664

Note : Turbine Drives

TORQUE VALUE & MOUNTING FLANGE DIMENSIONS

Dimensional datas

Size Inch	Class	Torque N.m	Flange Dimensions							ISO5211 Flange No.	Key Size mm	G mm	D mm	h mm	H mm
			A	B	C	f	t	n-d	P						
6	150	631	150	125	85	3	18	4-13	10	F12	10X10	41	36	55	188
	300	854	150	125	85	3	18	4-13	10	F12	10X10	41	36	55	188
	600	1609	175	140	100	4	20	4-18	10	F14	12X12	51	45	65	208
	900	1927	210	165	130	5	22	4-22	12	F16	14X14	62	55	80	215
	1500	3512	210	165	200	5	24	4-22	14	F16	16X16	68	60	90	235
	2500	5454	300	254	130	5	28	8-18	16	F25	16X16	73	65	95	270
8	150	987	210	165	130	5	20	4-22	10	F16	12X12	51	45	60	233
	300	1562	210	165	130	5	20	4-22	10	F16	12X12	51	45	60	233
	600	2501	210	165	130	5	22	4-22	12	F16	14X14	62	55	80	249
	900	4012	210	165	200	5	22	4-22	14	F16	16X16	38	60	90	266
	1500	6513	300	254	200	5	28	8-18	16	F25	18X18	79	70	105	285
	2500	8495	300	165	130	5	32	8-18	16	F25	18X18	84	75	110	355
10	150	1321	210	165	130	5	20	4-22	12	F16	14X14	62	55	80	278
	300	2304	210	165	130	5	20	4-22	12	F16	14X14	62	55	80	278
	600	3450	210	254	200	5	24	4-22	14	F16	16X16	68	60	90	300
	900	5017	300	254	200	5	25	8-18	16	F25	18X18	79	70	105	315
	1500	7996	300	254	200	5	28	8-18	16	F25	18X18	84	75	110	345
	2500	13148	300	165	130	5	32	8-18	16	F25	20X20	95	85	125	412
12	150	1650	210	165	130	5	24	4-22	14	F16	16X16	68	60	90	318
	300	3041	210	254	200	5	24	4-22	14	F16	16X16	68	60	90	320
	600	4507	300	254	200	5	25	8-18	16	F25	18X18	79	70	105	345
	900	6512	300	254	200	5	28	8-18	16	F25	18X18	84	75	110	360
	1500	10078	300	298	260	5	30	8-18	16	F25	20X20	95	85	125	408
	2500	18007	350	254	200	5	38	8-22	20	F30	24X24	107	95	140	478
14	150	2415	300	254	200	5	26	8-18	16	F25	16X16	73	65	95	353
	300	4019	300	254	200	5	26	8-18	16	F25	16X16	73	65	95	360
	600	6578	300	254	200	5	28	8-18	16	F25	18X18	84	75	110	376
	900	9489	300	254	200	5	28	8-18	16	F25	20X20	95	85	125	388
	1500	14860	300	254	200	5	35	8-18	16	F25	24X24	107	95	140	448
	2500	3314	300	254	200	5	28	8-18	16	F25	18X18	84	75	110	393
16	300	3550	300	254	200	5	28	8-18	16	F25	18X18	84	75	110	406
	600	9025	300	254	200	5	28	8-18	16	F25	20X20	95	85	125	414
	900	12877	300	254	200	5	30	8-18	16	F25	24X24	107	95	140	442
	1500	21857	350	298	230	5	35	8-22	20	F30	28X28	119	105	155	490
	150	5148	300	254	200	5	28	8-18	16	F25	18X18	84	75	110	435
	300	8375	300	254	200	5	28	8-18	16	F25	20X20	95	85	125	448
18	600	13493	300	254	200	5	30	8-18	16	F25	24X24	107	95	140	458
	900	18975	350	298	230	5	32	8-22	20	F30	28X28	119	105	165	487
	1500	29032	350	298	230	5	38	8-22	20	F30	32X32	136	120	180	545
	150	6425	300	254	200	5	30	8-18	16	F25	20X20	90	80	120	477
	300	10987	300	254	200	5	30	8-18	16	F25	24X24	107	95	140	485
	600	18502	350	298	230	5	32	8-22	20	F30	28X28	119	105	165	510
20	900	26048	350	298	230	5	38	8-22	20	F30	32X32	136	120	180	530
	1500	40907	415	356	260	5	42	8-33	28	F35	36X36	158	140	210	580
	150	12379	300	254	200	5	32	8-18	16	F25	24X24	102	90	135	562
	300	19384	350	298	230	5	32	8-22	20	F30	28X28	124	110	165	565
	600	29546	350	298	230	5	38	8-22	20	F30	32X32	136	120	180	602
	900	42379	415	356	260	5	42	8-33	28	F35	36X36	158	140	210	630
24	1500	65223	475	406	300	8	48	8-39	28	F40	40X40	180	160	240	730

Note :

- The above table is for FT, TW&TT series valves, which are with ISO 5211 mounting flange and adaptability for all types actuators mounting
- The torque is for valves with PTFE seat or Nylon seat as per different size / class selection
- The torque values showed in above table is the valve torque at normal temperature. For customer's sizing actuator:
 - If medium temperature is -10℃ -400C, the output torque of actuator should be 1.5 time the valve torque.
 - If medium temperature is -10℃ the output torque of actuator should be 2 or 2.5 time the valve torque.

SOFT MATERIALS DATA

Specification for Seat Materials

	PTFE	RPTFE	MOLON (NYLON + MoS ₂)	PEEK
Tensile Strength (Mpa)	24.8	25.4	75-100	91
Compressive Strength (Mpa)	35	52	100-140	137
Elongation (%)	250	120	10-30	50
Hardness (SH.A)	56	60	78	82
Water Absorption (%)	<0.01	<0.01	0.7	0.12
Specific Gravity (G/cm3)	2.2	2.2	1.2	1.35
Temperature Range (Class)	-300-400	-150-425	-40-300	-150-500
Pressure Rating (Class)	150-600	150-600	150-1500	150-1500
Service	Chemical & Cryogenic	Chemical & Cryogenic	High Pressure & Low Temperature	High Pressure & Low Temperature
	NYLON1010	NYLON12	Devlon V	Delrin
Tensile Strength (Mpa)	55	60	80	68
Compressive Strength (Mpa)	70	79	140	110
Elongation (%)	150	200	5.37	220
Hardness (SH.A)	70	75	78	78
Water Absorption (%)	0.3	0.2	0.1	0.2
Specific Gravity (G/cm3)	1.01	1.01	1.14	1.41
Temperature Range (Class)	-40-200	-58-250	-150-300	-58-230
Pressure Rating (Class)	600-1500	600-1500	-150-1500	150-1500
Service	High Pressure & Low Temperature	High Pressure & Low Temperature	High Pressure & Low Temperature	High Pressure & Low Temperature

Specification for Seat Materials

	VitonA	NBR	VitonB	NBR(HSN)	Viton AED
Temperature Range (°F)	-20-400	-20-400	-20-400	-40-320	-20-480
Hardness (SH.A)	70	70	70	80	90
Specific Gravity (G/cm3)	1.85	1.85	1.85	1.33	1.9
Service	Petroleum Oils, Gasoline Transmission Fluid	Petroleum Oils, Water, Hydraulic Oils	Mineral Acid, Steam, MTBE	Petroleum Oils, H ₂ S&C O ₂ Anti-Explosive Decompression	Petroleum Oils, H ₂ S&C O ₂ Anti-Explosive Decompression

Specification for Seat Materials

	Flexible Graphite	Spiral Wound 316+Graphite	PTFE	Spiral Wound Monel+P TFE
Temperature Range (°F)	-300-900	-300-900	-300-400	-300-400
PH	0-14	0-14	0-14	0-14
Service Application	Fire-safe	Fire-safe	Cryogenic, High Corrosive	Cryogenic, High Corrosive

* Due to quick develop; we reserve the right to institute changes in material, design and specifications for all our designed valves without prior notice .

GATE VALVE, BB, CS

Design

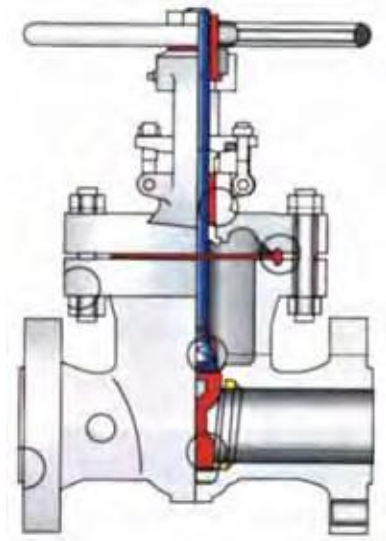
Our cast steel valves are designed & manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American Petroleum Institute standard API600 & API 6D, British standard BS1414 BS EN 1984 and generally, Conform to American Society of Mechanical Engineers standard ASME B1634. Valves are available in a complete range of body/bonnet materials and trims.

Range of materials

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

Available Modifications for cast steel valves

Trim Changes	Pressure Equalizing
End Connection Modifications	By-Pass
Packing and Gasket Change	Customer Specified Coatings
Operator Mounting	Weld End Bore Changes
Handwheel Extensions	Oxygen & Chlorine Clearing & Packaging



Operation

Large hand wheels for easy operation, also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

Live Load Packing

In services requiring frequent cycling or with high pressure/temperature variations, live loading extends the service life between maintenance periods by requiring less stments. Belleville springs are employed to provide constant packing gland stress

Wedge

Integral guide rib faces assure self-centering of wedge. Flexible wedge gate valve has a one piece twin-disc wedge, which is designed so that each half flexes independently available in solid Flex split and his designs.

OS&Y

Outside screw and yoke. Cast steel gate valve yoke integral with bonnet for 150 Lb-8" 600 Lb-6" 900 Lb-4" & small.

BB

Bolted bonnet, Welding bonnet and pressure seal bonnet in services requiring frequent cycling or with high pressure/temperature variations.

End Connections

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

Lantern Ring & Double Packing Set

Lantern ring leak-off fitting connection & double packing stack is optionally available for critical services.

Yoke Sleeve

Extra long thread engagement between yoke sleeve and stem provide long thread life. Valves of sizes larger than 150 Lb-12", 300 Lb-10", 600 Lb-6", 900 Lb / 1500 Lb / 4" are regularly provided with roll bearing yokes.

Stem

All wedge gate valves are provided with upset forged T-head stems. By forging the T-head. The stem at the stem-wedge connection is strengthened. This design also allows the wedge possibility of a bent stem jamming the wedge.

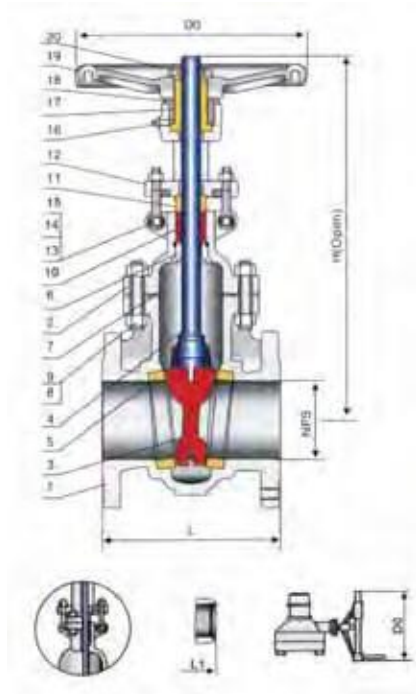
Body to Bonnet Joint

A flat face gasket joint is used in the 150lb valves. A male and female joint is used in 300Lb to 600Lb valves. Ring joint is 900Lb & higher rated valves.

CAST STEEL GATE VALVE 150LB / 300 LB

Applicable standards:

STEEL GATE VALVES API 600/API6D
STEEL GATE VALVES ISO 10434/ISO 14313
STEEL VALVES ASME B16.34
FACE TO FACE ASME B16.10
END FLANGES ASME B16.5
BUTT WELDING ENDS ASME B16.25
INSPECTION AND TEST API 598/API 6D



Design descriptions:

FULL PORT DESIGN
OS&Y OUT SIDE SRCEW AND YOKE
BB. BOLTED BONNET
FLEXIBLE WEDGE, FULLY GUIDED
CHOICE OF SOLID OR SPLIT WEDGE
RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HAND WHEEL
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	Low Temperature Carbon Steel
1	Body	A216-WCb	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB-CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat ring	A105+CR13	A182-F1+HF	A350-LF2+CR13
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Spiral wound (Graphite+304)		
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB
13	Eye Bolt Pin	Carbon Steel	A276-420	Carbon steel
14	Eye Bolt	Carbon Steel	A193-B7	Carbon steel
15	Eye Bolt Nut	Carbon Steel	A194-2H	Carbon steel
16	Grease Fitting	Brass + Steel		
17	Yoke Sleeve	Aluminium - Bronze		
18	Yoke Sleeve Jam Nut	Carbon Steel		
19	Hand Wheel	Malleable Iron		
20	Hand Wheel Nut	Carbon Steel		

Note : 1) ductile ni-resist optional

2) Wdge and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 150 Lb

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
L (RF)	7.00 178	7.50 191	8.00 203	9.00 229	10.50 267	11.50 292	13.00 330	14.00 356	15.00 381	16.00 406	17.00 432	18.00 457	20.00 508	22.00 559	24.00 610	24.00 610	28.00 711	28.00 711	in mm
L1 (BW)	85 216	9.50 241	11.12 283	12.00 305	15.88 403	16.50 419	18.00 457	19.75 502	22.50 572	24.00 610	26.00 660	28.00 711	32.00 813	34.00 864	36.00 914	36.00 914	38.00 965	40.00 1016	in mm
H (Open)	15.25 386	17.00 434	18.88 480	23.00 584	30.50 765	37.62 956	54.50 1149	53.12 1350	59.38 1508	67.00 1703	74.50 1892	83.50 2119	98.25 2500	110.50 2806	116.50 2960	124.00 3150	129.00 3280	146.50 3720	in mm
Do	8 200	8 200	10 250	12 300	12 300	14 350	16 400	15 450	20 500	22 550	24 600	26 640	29 700	29 720	32 800	32 800	38 950	40 1000	in mm
Wt(kg.)	18 15	18 15	32 26	50 41	77 69	121 108	178 156	265 248	463 424	463 424	621 587	792 752	1521 1570	1521 1570	1838 1900	2261 3310	2490 2540	3310 3380	RF BW

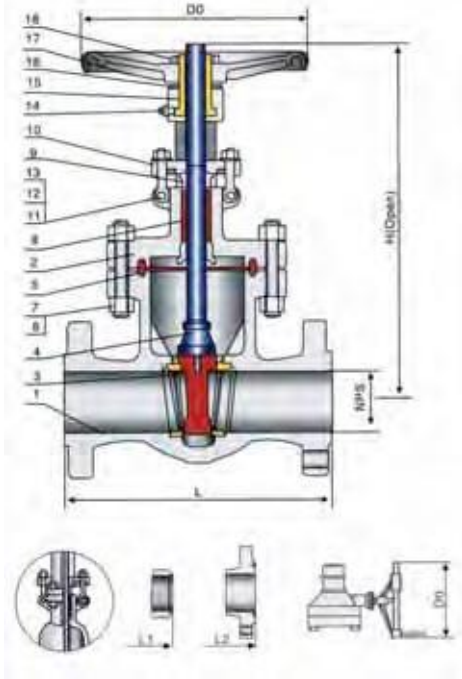
Dimensional datas of ANSI Class 300 Lb

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
L/L1 (RF/BW)	8.50 216	9.50 241	11.12 283	12.00 305	15.88 403	16.50 419	18.00 457	19.75 502	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
L2 (RTJ)	9.12 232	10.12 257	11.75 298	12.62 321	16.50 419	17.12 435	18.62 473	20.39 518	30.62 778	33.62 854	36.62 930	39.75 1010	45.88 1165	50.00 1270	54.00 1372	56.00 1422	61.12 1553	69.12 1756	in mm
H (Open)	16.12 410	17.88 453	20.00 509	24.00 612	31.75 805	39.38 1000	47.62 1210	55.75 1415	62.25 1580	67.88 1725	77.12 1960	86.38 2195	102.00 2590	107.00 2975	122.00 3100	126.00 3200	130.00 3300	152.00 3860	in mm
Do	8 200	8 200	10 250	12 300	14 350	16 400	18 450	20 500	25 550	22 550	24 600	26 640	29 720	29 720	32 800	32 800	38 950	40 1000	in mm
Wt(kg.)	23 17	35 26	50 39	71 53	144 113	209 164	322 256	482 390	683 565	950 805	1145 965	1635 1410	2660 2305	3090 2540	3310 2725	3595 3055	3720 3360	3985 3630	RF BW

CAST STEEL GATE VALVE 600 LB / 900 LB

Applicable standards:

STEEL GATE VALVES API 600/API6D
STEEL GATE VALVES ISO 10434/ISO 14313
STEEL VALVES ASME B16.34
FACE TO FACE ASME B16.10
END FLANGES ASME B16.5
BUTT WELDING ENDS ASME B16.25
INSPECTION AND TEST API 598/API 6D



Design descriptions:

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RENEWABLE SEAT RINGS
FORGED T-HEAD STEM
RISING STEM AND NON-RISING HAND WHEEL
FLANGED OR BUTT WELDING ENDS
AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	Low Temperature Carbon Steel
1	Body	A216-WCb	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB-CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat ring	A105+CR13	A182-F1+HF	A350-LF2+CR13
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Spiral wound (Graphite+304)		
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB
13	Eye Bolt Pin	Carbon Steel	A276-420	Carbon steel
14	Eye Bolt	Carbon Steel	A193-B7	Carbon steel
15	Eye Bolt Nut	Carbon Steel	A194-2H	Carbon steel
16	Grease Fitting	Brass + Steel		
17	Yoke Sleeve	Aluminium - Bronze		
18	Yoke Sleeve Jam Nut	Carbon Steel		
19	Hand Wheel	Malleable Iron		
20	Hand Wheel Nut	Carbon Steel		

Note : 1) ductile ni-resist optional

2) Wdge and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 600 Lb

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
L/L1 (RF/BW)	11.50 292	13.00 330	14.00 359	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	65.00 1651	70.00 1778	82.00 2083	in mm
L2 (RTJ)	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	65.50 1644	70.62 1794	82.62 2099	in mm
H (Open)	16.50 418	18.75 476	20.38 518	25.50 646	33.00 840	40.38 1025	48.38 1230	57.00 1450	62.00 1575	70.62 1795	76.00 1930	87.00 2210	101.50 2580	105.00 2665	109.50 2780	140.00 2895	124.00 3150	140.00 3560	in mm
Do	8 200	10 250	10 250	12 300	18 450	20 500	24 600	24 600	24 600	26 640	26 640	29 720	29 720	29 720	32 800	32 800	38 950	40 1000	in mm
Wt(kg.)	36 29	52 42	67 53	112 83	170 125	393 310	610 472	890 730	1245 1055	1530 1240	1945 1625	2450 2030	2995 2590	3475 2855	3725 3065	4045 3440	4185 3780	4480 4085	RF BW

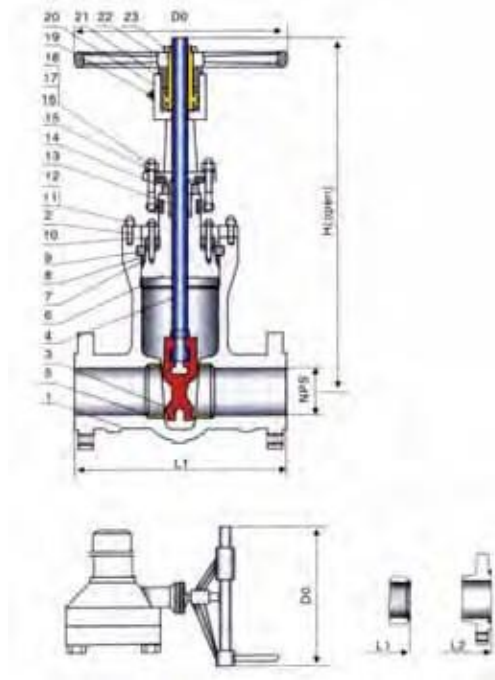
Dimensional datas of ANSI Class 300 Lb

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	in mm
L/L1 (RF/BW)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	38.00 968	40.50 1029	44.50 1130	48.00 1219	52.00 1321	61.00 1549	in mm
L2 (RTJ)	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 (Open)	19.62 498	21.50 547	22.50 573	26.62 678	35.50 900	4.50 1103	53.00 1345	60.00 1525	74.88 1900	81.00 2055	87.00 2215	101.00 2565	104.00 2640	in mm
Do	10 250	10 250	12 300	18 450	20 500	24 600	26 640	29 720	32 800	32 800	38 950	38 950	40.00 100.00	in mm
Wt(kg.)	74 54	131 105	101 78	172 135	335 260	640 515	1100 920	1600 1380	2250 2010	2850 2565	3060 3485	3935 3250	49 4065	RF BW

CAST STEEL GATE VALVE 1500LB / 2500 LB

Applicable standards:

STEEL GATE VALVES API 600/API6D
 STEEL GATE VALVES ISO 10434/ISO 14313
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598/API 6D



Design descriptions:

FULL PORT DESIGN
 OS&Y OUT SIDE SRCEW AND YOKE
 BB. BOLTED BONNET
 FLEXIBLE WEDGE, FULLY GUIDED
 CHOICE OF SOLID OR SPLIT WEDGE
 RENEWABLE SEAT RINGS
 FORGED T-HEAD STEM
 RISING STEM AND NON-RISING HAND WHEEL
 FLANGED OR BUTT WELDING ENDS
 AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Yoke	A216-WCB	A217-WC6	A351-CF8M
3	Wedge	A216-WCB+HF	A217-WC6+HF	A351-CF8M+MF
4	Stem	A182-F6a	CR-MO-V	A182-316
5	Seat ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket	Steel Ring	304SS ring	316SS RING
8	Adapter ring	Carbon Steel	A-276-420	A276-316
9	Retainer	Carbon Steel	A-276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B16	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-7	A194-8M
13	Packing		Graphite	
14	Gland	A276-420	A276-304	A276-316L
15	Gland Flange	A216-WCB	A217-WC6	A351-CF8M
16	Eye Bolt Pin	Carbon Steel	A276-420	A276-316
17	Eye Bolt	Carbon Steel	A193-B7	A193-B8
18	Eye Bolt Nut	Carbon Steel	A194-2H	A194-8
19	Grease Fitting		Brass + Steel	
20	Yoke Sleeve		Aluminium - Bronze	
21	Yoke Sleeve Jam Nut	Carbon Steel		Stainless Steel
22	Hand Wheel		Malleable Iron	
23	Hand Wheel Nut		Carbon Steel	

Note : 1) Graphite Optional

2) Ductile Ni-resist optional

3) Wedge and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 1500 Lb

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	in mm
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	60.50 1537	65.50 1664	76.50 19.43	in mm
L2 (RTJ)	15.50 371	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	61.38 1559	66.37 1686	76.62 1972	in mm
H (Open)	24.25 615	26.00 658	30.00 760	34.12 868	39.50 1005	45.00 1145	54.00 1370	61.00 1550	74.88 1900	80.50 2050	93.75 2380	101.50 2580	114.75 2915	in mm
Do	10 250	12 300	18 450	20 500	24 600	24 600	18 460	24 600	24 600	24 600	24 600	24 600	24 600	in mm
Wt(kg.)	116 105	166 150	209 188	296 265	510 420	920 760	1910 1640	3145 2755	4100 3200	6200 5300	8965 8070	13100 11790	15860 14275	RF BW

Dimensional datas of ANSI Class 2500 Lb

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	in mm
L/L1 (RF/BW)	17.50 451	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)	17.88 454	20.50 514	23.00 584	26.88 683	36.50 927	40.88 1038	50.88 1292	56.88 1445	-- --	-- --	-- --	-- --	-- --	in mm
H (Open)	24.88 631	29.00 736	35.00 890	41.50 1055	57.00 1450	63.37 1610	81.75 2075	89.75 2280	-- --	-- --	-- --	-- --	-- --	in mm
Do	12 300	18 450	20 500	20 500	24 600	24 600	24 600	24 600	-- --	-- --	-- --	-- --	-- --	in mm
Wt(kg.)	155 124	210 160	310 245	580 460	1600 1310	2450 2010	4570 3800	7150 6000	-- --	-- --	-- --	-- --	-- --	RF BW

SWING CHECK VALVE, BB, CS

Design

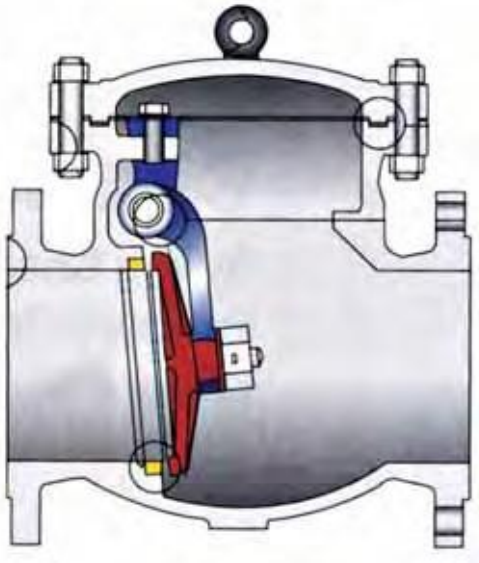
Our cast steel valves are designed & manufactured to provide maximum service life and dependability. All check valves meet the design requirements of American Petroleum Institute standard API600 & API 6D, BS EN 13709 and generally, Conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Range of materials

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

Available Modifications for Cast Steel Valves

Trim Changes	Pressure Equalizing
End Connection Modifications	Customer Specified Coatings
Packing and Gasket Change	Weld End Bore Changes
Operator Mounting	Oxygen & Chlorine Clearing & Packaging
Handwheel Extensions	



Eyebolt

For 150Lb-8", 300Lb-8" 600Lb-6", 900Lb-1500Lb/2500Lb-4" & over.

BC

Bolted cover, Welded cover & Pressure seal bonnet in services requiring frequent cycling or with high pressure/temperature variations.

End Connections

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

Body to Cover Joint

A male & female joint or tongue and groove joint is used 150Lb to 600Lb valves. Ring joint is used in the body to cover connection in 900Lb & higher rated valves.

Outside Lever & Weight

All external hinge pin swing check valves 12" & smaller are available with an optional outside lever and weight, internal hinge available with all swing check valves.

Seat Rign

Separate heavy duty, full ported rings for easy maintenance, Screwed or welded connection into body.

HCU Weighted Mechanical Accumulator

This design can be used to either dampen or assist closing of the check valve disc depending on orientation, by using the hydraulic control unit to buffer action the disc, the valve opens at lower flow rates.

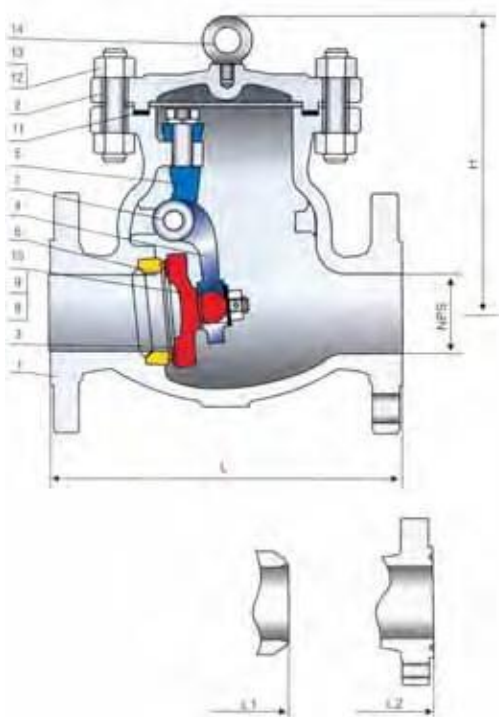
SWING, CAST STEEL CHECK VALVE 150LB / 300LB

Applicable standards:

STEEL GATE VALVES API 600/API6D
 STEEL GATE VALVES ISO 10434/ISO 14313
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598/API 6D

Design descriptions:

BC, BOLTED COVER
 SWING TYPE, ANTI-ROTATION DISC
 RENEWABLE SEAT RINGS
 NON-PENETRATE DISC SHAFT
 HORIZONTAL OR VERTICAL SERVICE
 FLANGED OR BUTT WELDING ENDS



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	Low Temperature Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Cover	A216-WCB	A217-WC6	A352-LCB
3	Disc 1	A105-CR13	A182-F11+HF	A350-LF2+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Fork Part	A216-WCB	A217-WC6	A352-LCB
6	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge Pin	A276-420	A276-304	A276-420
8	Disc Washer	Carbon Steel	A276-304	Carbon steel
9	Disc Nut	Carbon Steel	A194-7	Carbon steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon steel
11	Gasket	Spiral wound (Graphite+304)		
12	Stud	A193-B7	A193-B16	A320-L7
13	Stud Nut	A194-2H	A194-7	A194-4
14	Eye Bolt 2	Carbon Steel		

Note : 1) Cast Steel disc for NPS 4" and above.

2) Disc and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 150 Lb

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	36 900	in mm
L/L1 (RF/BW)	8.00 203	8.50 216	9.50 241	11.50 292	14.00 356	19.50 495	24.50 622	27.50 966	31.00 787	34.00 864	38.50 978	38.50 978	51.00 1295	51.00 1295	57.00 1448	60.00 1524	77.00 1956	in mm
L2 (RTJ)	8.50 216	9.00 229	10.00 254	12.00 305	14.50 368	20.00 508	25.00 635	28.00 711	31.50 800	34.50 876	39.00 991	39.00 991	51.50 1308	-- --	-- --	-- --	-- --	in mm
H	6.00 152	6.50 165	6.88 175	8.00 204	11.50 293	13.88 353	15.38 390	17.00 432	18.75 475	20.62 525	22.88 582	24.62 627	34.75 883	37.00 940	37.00 940	38.62 980	48.00 1220	in mm
Wt(kg.)	14 10	20 12	25 17	40 29	71 57	118 96	177 143	263 227	353 295	542 468	632 552	855 755	970 831	1600 1420	1600 1420	1990 1760	2760 2230	RF/RTJ BW

Dimensional datas of ANSI Class 300 Lb

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	36 900	in mm
L/L1 (RF/BW)	10.50 267	11.50 292	12.50 318	14.00 356	17.50 445	21.00 533	24.50 622	28.00 711	33.00 838	34.00 864	38.50 978	40.00 1016	53.00 1346	53.00 1346	59.00 1499	62.75 1594	82.00 2083	in mm
L2 (RTJ)	11.12 283	12.12 308	13.12 333	14.62 371	18.12 460	21.62 549	25.12 638	28.62 727	33.62 854	34.62 879	39.12 949	40.75 1035	53.88 1368	54.00 1372	60.00 1524	63.75 1619	-- --	in mm
H	6.00 152	6.50 165	6.88 175	8.00 204	11.50 293	13.88 353	15.38 390	17.00 432	18.75 475	20.62 525	22.88 582	24.62 627	34.75 883	35.88 910	37.00 940	38.62 980	48.00 1220	in mm
Wt(kg.)	16 11	23 13	29 18	46 31	82 61	136 103	204 155	302 245	405 315	625 503	730 593	985 812	1115 895	1465 1205	1840 1525	2290 1895	3180 2395	RF/RTJ BW

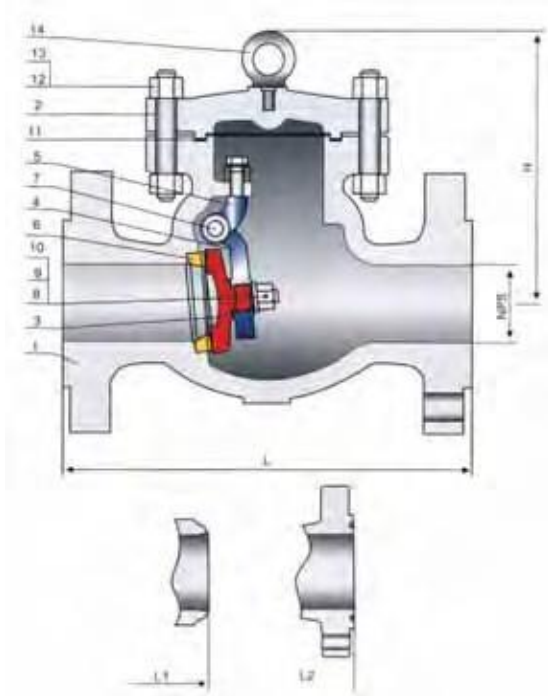
SWING, CAST STEEL CHECK VALVE 600LB / 900LB

Applicable standards:

STEEL GATE VALVES API 600/API6D
 STEEL GATE VALVES ISO 10434/ISO 14313
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598/API 6D

Design descriptions:

BC, BOLTED COVER
 SWING TYPE, ANTI-ROTATION DISC
 RENEWABLE SEAT RINGS
 NON-PENETRATE DISC SHAFT
 HORIZONTAL OR VERTICAL SERVICE
 FLANGED OR BUTT WELDING ENDS



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	Low Temperature Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Cover	A216-WCB	A217-WC6	A352-LCB
3	Disc 1	A105-CR13	A182-F11+HF	A350-LF2+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Fork Part	A216-WCB	A217-WC6	A352-LCB
6	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge Pin	A276-420	A276-304	A276-420
8	Disc Washer	Carbon Steel	A276-304	Carbon steel
9	Disc Nut	Carbon Steel	A194-7	Carbon steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon steel
11	Gasket	Spiral wound (Graphite+304)		
12	Stud	A193-B7	A193-B16	A320-L7
13	Stud Nut	A194-2H	A194-7	A194-4
14	Eye Bolt 2	Carbon Steel		

Note : 1) NPS 6" larger.

2) Disc and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 600 Lb

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	in mm
L/L1 (RF/BW)	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	in mm
L2 (RTJ)	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	in mm
H	7.50 190	8.00 205	8.75 222	10.00 255	14.50 368	17.50 445	19.25 490	21.38 540	23.38 595	25.75 655	28.75 730	31.00 885	43.50 1105	in mm
Wt(kg.)	24 16	35 19	44 26	70 44	125 87	207 147	310 220	460 350	615 452	945 720	1105 845	1495 1160	1695 1280	RF/RTJ BW

Dimensional datas of ANSI Class 900 Lb

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	in mm
L/L1 (RF/BW)	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	-- --	in mm
L2 (RTJ)	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 1144	44.88 1140	48.50 1232	52.50 1334	-- --	in mm
H	9.50 240	10.00 256	11.00 278	12.50 320	18.12 460	22.00 560	24.00 610	26.50 675	32.00 815	32.00 815	33.50 850	38.75 985	-- --	in mm
Wt(kg.)	37 21	54 25	68 34	109 58	195 115	321 194	481 290	711 461	956 597	1468 950	1870 1210	2316 1533	-- --	RF/RTJ BW

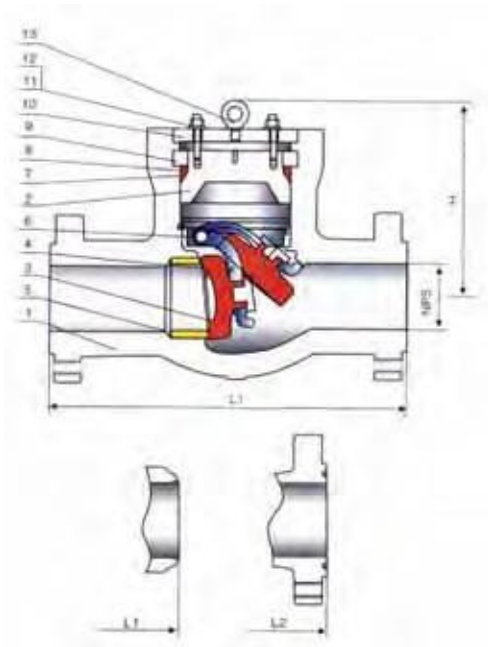
SWING, CAST STEEL CHECK VALVE 1500LB / 2500LB

Applicable standards:

STEEL GATE VALVES API 600/API6D
 STEEL GATE VALVES ISO 10434/ISO 14313
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598

Design descriptions:

PSB, PRESSURE SEAL BONNET
 FLEXIBLE DISC, FULLY GUIDED
 RENEWABLE SEAT RINGS
 FLANGED OR BUTT WELDING ENDS



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material	
			1/1/4cr -1/2 mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Pres. Seal Bonner	A216-WCB	A217-WC6	A351-CF8M
3	Disc	A105-HF	A182-F11+HF	A351-CF8M+HF
4	Hinge	A216-WCB	A217-WC6	A351-CF8M
5	Seat Ring	A105-HF	A182-F11+HF	A240-316+HF
6	Hinge Pin	Steel Ring	A276-304	A276-316
7	Bonnet Gasket	A276-420	304SS Ring	316SS Ring
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Cover	Carbon Steel	Alloy Steel	Stainless steel
11	Bonnet Stud	A193-B7	A193-B7	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-2H	A194-8M
13	Eye Bolt	Carbon Steel		

Note : 1) Graphite Optional

2) Disc and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 1500 Lb

NPS	2	2 1/2	3	4	6	8	10	12	14	16	in
DN	50	65	80	100	150	200	250	300	350	400	mm
L/L1 (RF/BW)	14.50 368	16.50 419	18.50 470	21.50 546	27.15 705	32.75 832	39.00 991	44.50 1130	49.50 1257	54.50 1384	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	in mm
H	9.50 240	10.00 256	13.00 330	14.75 375	18.88 480	23.50 595	26.00 660	29.12 740	30.88 785	32.88 835	in mm
Wt(kg.)	40 29	63 47	70 49	115 84	250 152	470 310	740 470	1100 710	1410 910	1600 1100	RF/RTJ BW

Dimensional datas of ANSI Class 2500 Lb

NPS	2	2 1/2	3	4	6	8	10	12	14	16	in
DN	50	65	80	100	150	200	250	300	350	400	mm
L/L1 (RF/BW)	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)	17.88 454	20.25 514	23.00 584	26.88 683	36.50 927	40.88 1038	50.88 1292	56.88 1445	-- --	-- --	in mm
H	17.75 275	13.25 335	13.75 350	15.12 385	19.50 495	24.62 625	28.00 712	35.62 905	-- --	-- --	in mm
Wt(kg.)	50 35	76 55	85 68	165 115	460 225	900 580	1300 860	1800 1150	-- --	-- --	RF/RTJ BW

WATER CAST STEEL CHECK VALVE 150LB / 300LB

Applicable standards:

STEEL GATE VALVES API 594/API6D
STEEL GATE VALVES ISO 14313
STEEL VALVES ASME B16.34
FACE TO FACE ASME B16.10
END FLANGES ASME B16.5
INSPECTION AND TEST API 598/API 6D

Design descriptions:

ONE PIECE BODY
BUTTERFLY SWING TYPE
DUAL-PLATE DISC, LONG-PATTERN
RENEWABLE SPLIT DISC
HORIZONTAL OR VERTICAL SERVICE
WAFFER ENDS
AVAILABLE WITH FLANGED - 1/2, 1, 1 1/2, 2, 3, 4, 6, 8, 10, 12, 14, 16, 18, 20, 24, 30, 36, 42, 48, 60, 72, 84, 96, 108, 120, 144, 168, 192, 216, 240, 288, 336, 384, 432, 480, 528, 576, 624, 672, 720, 768, 816, 864, 912, 960, 1008, 1056, 1104, 1152, 1200, 1248, 1296, 1344, 1392, 1440, 1488, 1536, 1584, 1632, 1680, 1728, 1776, 1824, 1872, 1920, 1968, 2016, 2064, 2112, 2160, 2208, 2256, 2304, 2352, 2400, 2448, 2496, 2544, 2592, 2640, 2688, 2736, 2784, 2832, 2880, 2928, 2976, 3024, 3072, 3120, 3168, 3216, 3264, 3312, 3360, 3408, 3456, 3504, 3552, 3600, 3648, 3696, 3744, 3792, 3840, 3888, 3936, 3984, 4032, 4080, 4128, 4176, 4224, 4272, 4320, 4368, 4416, 4464, 4512, 4560, 4608, 4656, 4704, 4752, 4800, 4848, 4896, 4944, 4992, 5040, 5088, 5136, 5184, 5232, 5280, 5328, 5376, 5424, 5472, 5520, 5568, 5616, 5664, 5712, 5760, 5808, 5856, 5904, 5952, 6000, 6048, 6096, 6144, 6192, 6240, 6288, 6336, 6384, 6432, 6480, 6528, 6576, 6624, 6672, 6720, 6768, 6816, 6864, 6912, 6960, 7008, 7056, 7104, 7152, 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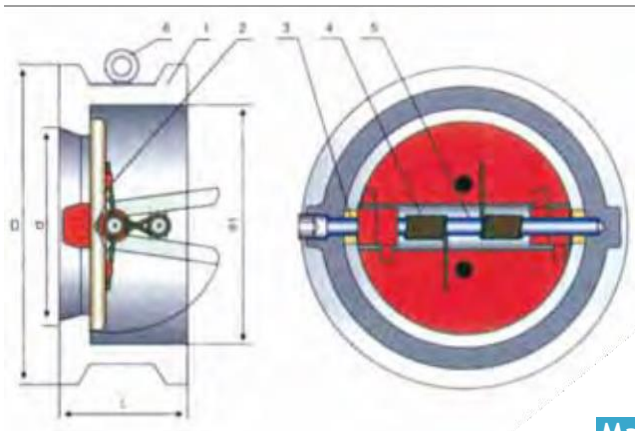
WATER CAST STEEL CHECK VALVE 600 LB / 900 LB

Applicable standards:

STEEL GATE VALVES API 594/API6D
 STEEL GATE VALVES ISO 14313
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 INSPECTION AND TEST API 598/API 6D

Design descriptions:

ONE PIECE BODY
 BUTTERFLY SWING TYPE
 DUAL-PLATE DISC, LONG-PATTERN
 RENEWABLE SPLIT DISC
 HORIZONTAL OR VERTICAL SERVICE
 WAFFER ENDS
 AVAILABLE WITH FLANGED ENDS



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	Low Temperature Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB+CR13	A351-CF8M+HF	A350-LCB+CR13
3	Stop Pin	A276-420	A276-304	A276-420
4	Back Spring	A313-304	A313-316	A313-304
5	Hinge Pin	A276-420	A276-304	A276-420
6	Eye Bolt2	Carbon Steel		

Note : 1) NPS 8" larger.

Dimensional datas of ANSI Class 600 Lb

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
L	2.38 60	2.62 67	2.88 73	3.12 79	5.38 137	6.50 165	8.38 213	9.00 229	10.75 273	12.00 305	in mm
D	4.38 110	5.00 128	5.75 147	7.50 191	10.38 264	12.50 318	15.62 398	17.88 455	19.25 490	22.12 562	in mm
d	2.00 51	2.50 65	3.00 80	4.00 102	6.00 152	7.88 200	9.88 250	12.00 305	13.25 337	15.25 387	in mm
D1	2.25 58	2.88 73	3.50 88	4.25 108	6.38 162	8.38 212	10.50 266	12.25 312	14.00 355	15.75 405	in mm
Wt.	4	5	8	11	26	55	95	140	223	360	kg.

Dimensional datas of ANSI Class 900 Lb

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
L	2.75 70	3.25 83	3.25 83	4.00 102	6.25 159	8.12 206	9.50 241	11.50 292	-- --	-- --	in mm
D	5.50 140	6.38 162	6.50 165	8.00 204	11.25 286	14.00 356	17.00 432	19.50 495	-- --	-- --	in mm
d	2.00 51	2.50 62	3.00 80	4.00 102	6.00 152	7.88 200	9.88 250	12.00 305	-- --	-- --	in mm
D1	2.25 58	2.88 73	3.50 88	4.25 108	6.38 162	8.38 212	10.50 266	12.25 312	-- --	-- --	in mm
Wt.	8	11	14	20	42	84	145	220	--	--	kg.

GLOBE VALVE, BB, CS

Design

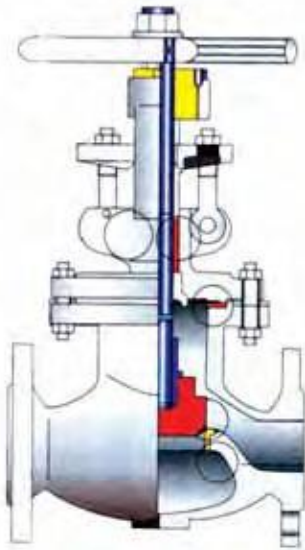
Our cast steel globe valves are designed & manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American Petroleum Institute standard API600 & 6D BS EN 13709 and generally, Conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Range of materials

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

Available Modifications for Cast Globe Valves

Trim Changes	Pressure Equalizing
End Connection Modifications	By-Pass
Packing and Gasket Change	Customer Specified Coatings
Operator Mounting	Weld End Bore Changes
Handwheel Extensions	Oxygen & Chlorine Clearing & Packaging



Operation

Large hand wheels for easy operation. also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

OS&Y

Outside screw and yoke. Cast steel gate valve yoke integral with bonnet for 10 & small.

Live Load Packing

In services requiring frequent cycling or with high pressure/temperature variations, live loading extends the service life between maintenance periods by requiring less stments. Belleville springs are employed to provide constant packing gland stress

BB

Bolted bonnet, Welding bonnet and pressure seal bonnet in services requiring frequent cycling or with high pressure/temperature variations.

Yoke Sleeve

Furnished in a aluminum and bronze to reduce operating torque. Most size furnished with ball bearing yoke sleeves.

End Connections

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

Lantern Ring & Double Packing Set

Lantern ring leak-off fitting connection & double packing stack is optionally available for critical services.

Body to Bonnet Joint

A flat face gasket joint is used in the 150lb to 600Lb valves. Ring joint is used in the body to bonnet connection in 900lb & higher rated valves.

Seat Rings

Separate heavy duty, full ported rings for easy maintenance. Screwed or welded connection into body.

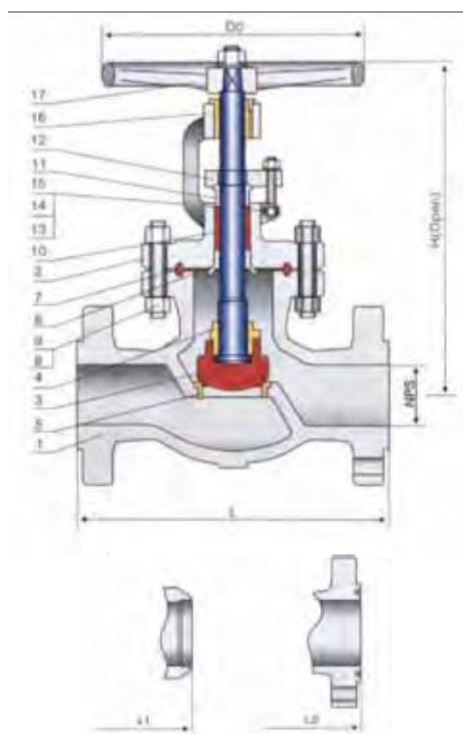
Disc

All Plug disc is stem guided on all size. Disc has a differential angle front the seat to provide a line contact for maximum sealing. The bottom of V-port disc is feuded by the body seat ring for maximum disc stability in throttling applications. The soft Teflon ring is excellent for lower temperature service where tight shut off required

CAST STEEL GLOBE VALVE 150 LB / 300 LB

Applicable standards :

STEEL GLOBE VALVES BS EN 13709/API600
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598



Design descriptions :

STRAIGHT PATTERN BODY DESIGN
 OS&Y OUT SIDE SCREW AND YOKE
 BB, BOLTED BONNET
 YOKE INTEGRAL WITH BONNET
 RISING STEM AND HAND WHEEL
 LOOSE DISC, CHOICE OF PLUG OR BALL
 RENEWABLE SEAT RING
 IMPACT HAND WHEEL FOR 10" & ABOVE
 HORIZONTAL SERVICE
 FLANGED OR BUTT WELDING ENDS
 AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	Low Temperature Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A217-F11+HF	A350-LF2+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Steel Ring	304SS ring	Steel Ring
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB
13	Eye Bolt Pin	Carbon Steel	A276-420	Carbon Steel
14	Eye Bolt	Carbon Steel	A193-B7	Carbon Steel
15	Eye Bolt Nut	Carbon Steel	A194-2H	Carbon Steel
16	Yoke Sleeve		Aluminum-Bronze	
17	Hand Wheel		Malleable Iron	

Note : 1) Ductile Ni-resist optional

2) Disc and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 150 Lb

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
L/L1 (RF/BW)	8.00 203	8.50 216	9.50 241	11.50 292	16.00 406	19.50 495	24.50 622	27.50 698	31.00 787	36.00 914	in mm
L2 (RTJ)	8.00 203	8.50 216	9.50 241	11.50 292	16.00 406	19.50 495	24.50 622	27.50 698	31.00 787	36.00 914	in mm
H (Open)	15.00 380	21.00 535	17.50 445	20.25 515	22.00 560	24.25 615	32.00 815	35.88 910	48.38 1230	57.00 1450	in mm
Do	7 180	10 240	11 280	11 280	13 320	13 320	16 400	18 450	20 500	24 600	in mm
Wt(kg.)	18 14	30 22	41 33	64 43	86 72	110 88	280 245	380 345	510 450	740 665	RF BW

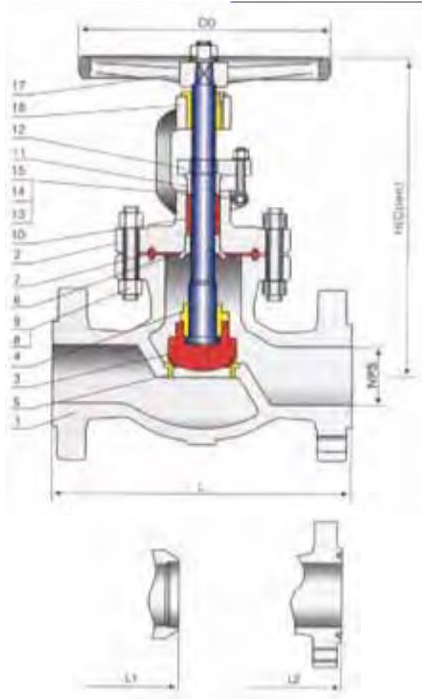
Dimensional datas of ANSI Class 300 Lb

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	in mm
L/L1 (RF/BW)	10.50 267	11.50 292	12.50 318	14.00 356	17.50 444	22.00 559	24.50 622	28.00 711	-- --	-- --	in mm
L2 (RTJ)	11.12 282	12.12 308	13.12 333	14.62 371	18.12 460	22.62 575	25.12 638	28.62 727	-- --	-- --	in mm
H (Open)	16.75 425	19.00 485	19.88 505	22.50 570	25.25 640	33.25 845	35.50 900	38.62 980	-- --	-- --	in mm
Do	8 200	10 240	11 280	13 320	16 400	18 450	20 500	24 600	-- --	-- --	in mm
Wt(kg.)	25 20	32 22	38 27	56 41	96 75	150 117	360 310	550 492	-- --	-- --	RF BW

CAST STEEL GLOBE VALVE 600 LB / 900 LB

Applicable standards :

STEEL GLOBE VALVES BS EN 13709/API600
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598



Design descriptions :

STRAIGHT PATTERN BODY DESIGN
 OS&Y OUT SIDE SCREW AND YOKE
 BB, BOLTED BONNET
 YOKE INTEGRAL WITH BONNET
 RISING STEM AND HAND WHEEL
 LOOSE DISC, CHOICE OF PLUG OR BALL
 RENEWABLE SEAT RING
 IMPACT HAND WHEEL FOR 10" & ABOVE
 HORIZONTAL SERVICE
 FLANGED OR BUTT WELDING ENDS
 AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	Low Temperature Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A217-F11+HF	A350-LF2+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Steel Ring	304SS ring	Steel Ring
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB
13	Eye Bolt Pin	Carbon Steel	A276-420	Carbon Steel
14	Eye Bolt	Carbon Steel	A193-B7	Carbon Steel
15	Eye Bolt Nut	Carbon Steel	A194-2H	Carbon Steel
16	Yoke Sleeve		Aluminum-Bronze	
17	Hand Wheel		Malleable Iron	

Note : 1) Ductile Ni-resist optional

2) Disc and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 600 Lb

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
L/L1 (RF/BW)	11.50 292	13.00 330	14.00 356	17.00 432	22.00 559	26.00 660	31.00 787	33.00 838	in mm
L2 (RTJ)	11.62 295	13.12 333	14.12 359	17.12 435	22.12 562	26.12 663	31.12 790	33.12 841	in mm
H (Open)	17.50 445	19.75 502	21.00 533	24.50 622	29.50 750	36.50 927	44.88 1140	53.12 1350	in mm
Do	10 240	11 280	13 320	16 400	18 450	20 500	24 600	24 600	in mm
Wt(kg.)	35 27	50 34	60 42	110 84	230 192	410 350	770 680	1140 1030	RF BW

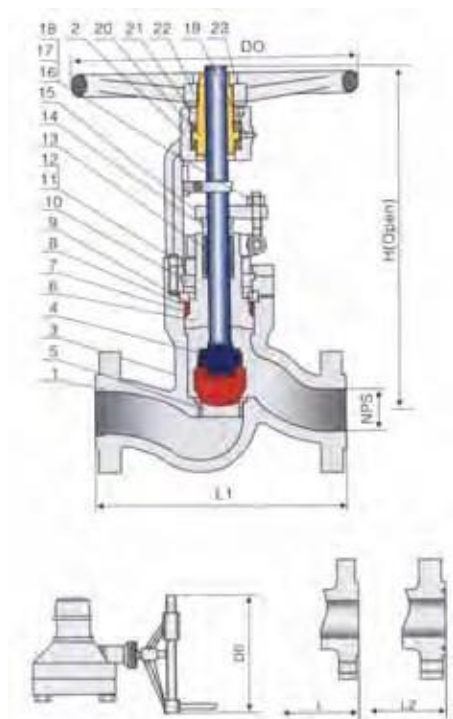
Dimensional datas of ANSI Class 900 Lb

NPS DN	2 50	2 1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	in mm
L/L1 (RF/BW)	14.50 368	16.50 419	15.00 381	18.00 457	24.00 610	29.00 737	33.00 838	-- --	in mm
L2 (RTJ)	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	-- --	in mm
H (Open)	22.00 560	23.25 590	25.25 640	31.88 810	41.38 1050	53.50 1360	61.88 1570	-- --	in mm
Do	11 280	13 320	16 400	18 450	20 500	24 600	24 600	-- --	in mm
Wt(kg.)	57 41	82 53	91 58	168 117	365 238	665 538	1250 1060	-- --	RF BW

CAST STEEL GLOBE VALVE 1500 LB / 2500 LB

Applicable standards:

STEEL GLOBE VALVES BS EN 13709/API600
 STEEL VALVES ASME B16.34
 FACE TO FACE ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 INSPECTION AND TEST API 598



Design descriptions:

PBS, PRESSURE SEAL BONNET
 OS&Y OUT SIDE SCREW AND YOKE
 BB, BOLTED BONNET
 RENEWABLE SEAT RING
 RISING STEM AND HAND WHEEL
 FLANGED OR BUTT WELDING ENDS
 AVAILABLE WITH BG OPERATOR



Materials of Parts

No.	Part Name	Carbon Steel	ASTM Material 1/1/4cr -1/2 mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Yoke	A216-WCB	A217-WC6	A351-CF8M
3	Disc	A216-WCB+HF	A217-WC6+HF	A351-CF8M+MF
4	Stem	A182-F6a	CR-MO-V	A182-316
5	Seat ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket	Steel Ring	304SS ring	316SS RING
8	Adapter ring	Carbon Steel	A-276-420	A276-316
9	Retainer	Carbon Steel	A-276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B16	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-7	A194-8M
13	Packing		Graphite	
14	Gland	A276-420	A276-304	A276-316L
15	Gland Flange	A216-WCB	A217-WC6	A351-CF8M
16	Eye Bolt Pin	Carbon Steel	A276-420	A276-316
17	Eye Bolt	Carbon Steel	A193-B7	A193-B8
18	Eye Bolt Nut	Carbon Steel	A194-2H	A194-8
19	Grease Fitting		Brass + Steel	
20	Yoke Sleeve		Aluminium - Bronze	
21	Yoke Sleeve Jam Nut	Carbon Steel		Stainless Steel
22	Hand Wheel		Malleable Iron	
23	Hand Wheel Nut		Carbon Steel	

Note : 1) Graphite Optional

2) Ductile Ni-resist optional

3) Wedge and seat ring may either be solid facing material or a base material equal to or better than the body / bonnet material with facing as shown.

Dimensional datas of ANSI Class 1500 Lb

NPS	2	2 1/2	3	4	6	8	in
DN	50	65	80	100	150	200	mm
L/L1 (RF/BW)	14.50 368	16.50 419	18.50 470	21.50 546	27.75 705	32.75 832	in mm
L2 (RTJ)	14.62 371	16.62 422	18.62 473	21.62 549	28.00 711	33.12 841	in mm
H (Open)	22.00 560	23.25 590	29.50 750	36.00 915	48.62 1235	65.00 1650	in mm
Do	13 320	16 400	18 450	20 500	24 600	28 700	in mm
Wt(kg.)	68 57	97 81	116 95	215 184	445 347	795 635	RF BW

Dimensional datas of ANSI Class 2500 Lb

NPS	2	2 1/2	3	4	6	8	in
DN	50	65	80	100	150	200	mm
L/L1 (RF/BW)	17.75 451	20.00 508	22.75 578	26.50 673	36.00 914	-- --	in mm
L2 (RTJ)	17.88 445	20.50 414	23.00 584	26.88 683	36.50 927	-- --	in mm
H (Open)	25.50 650	28.12 715	32.50 825	47.00 1195	70.50 1790	-- --	in mm
Do	16 400	18 450	20 500	24 600	28 700	-- --	in mm
Wt(kg.)	97 72	138 95	167 108	305 196	633 351	-- --	RF BW

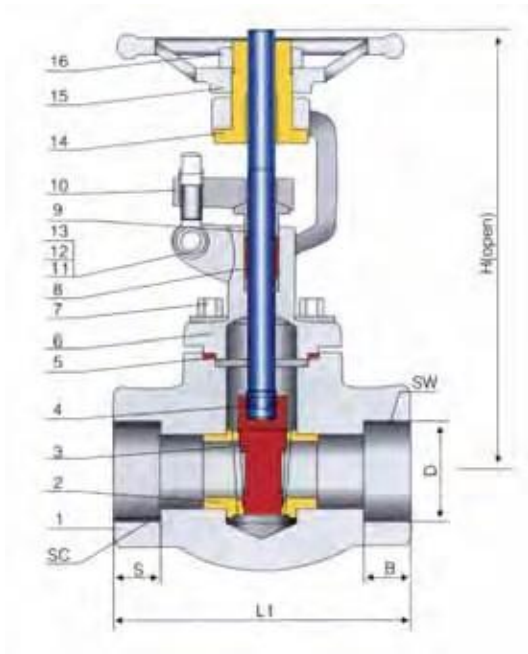
FORGED STEEL GATE VALVE 800 LB

Applicable standards:

STEEL GATE VALVES API602
 STEEL VALVES ASME B16.34
 FACE TO FACE, MANUFACTURER STANDARD
 FACE TO FACE, FLANGES, ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 SOCKET-WELDING ENDS, ASME B16.11
 SCREWED ENDS ASME B1.20.1
 INSPECTION AND TEST API 598

Design descriptions:

OUTSIDE SCREW AND YOKE (OS&Y)
 BOLTED BONNET
 CHOICE OF WB, WELDED BONNET
 SINGLE WEDGE, FULLY GUIDED
 RENEWABLE SEAT RINGS
 YOKE INTEGRAL WITH BONNET
 RISING STEM AND NON-RISING HAND WHEEL
 SW, SCREWED ENDS
 BW, BUTT WELDING ENDS
 FLANGED ENDS



Materials of Parts

No.	Part Name	C-Si	ASTM Material 16Cr-12Ni-2Mo	11/4 Cr-1/2 Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Wedge	A182-F6a	A182-F316	A182-F6a+HF
4	Stem	A276-410	A276-316	A276-410
5	Stem Ring	A276-410	A182-316	A276-410+HF
6	Bonnet Gasket	Graphite+304	Graphite+316	Graphite+304
7	Bonnet Stud	A193-B7	A193-B8M	A193-B16
8	Packing		Graphite	
9	Gland	A276-410	A276-316	A276-410
10	Gland Flange	A105	A182-F316	A182-F11
11	Eye Bolt Pin	A276-410	A276-316	A276-410
12	Eye Bolt	A193-B7	A193-B8M	A193-B16
13	Eye Bolt Nut	A194-2H	A194-8M	A194-2H
14	Yoke Sleeve		A276-410	
15	Hand Wheel		Malleable Iron	
16	Hand Wheel Nut		Carbon Steel	

Note : 1) Spiral wound construction

Dimensional datas of 150Lb / 300Lb / 600Lb

NPS DN	Unit	L1"	L(Flanged Ends)			d	SW			SC	H(opne)	D0	Wt2 (kg)
			150Lb	300Lb	600Lb		D	B	NPT	S			
3/8 10	in mm	3.12 79	4.00 102	5.50 140	6.50 165	0.394 10	0.693 17.6	0.378 9.6	3/8	0.540 13.6	6.00 151	4.00 100	4.5/4
1/2 15	in mm	3.12 79	4.25 108	5.50 140	6.50 165	0.394 10	0.858 21.8	0.78 9.6	1/2	0.535 13.6	6.00 151	4.00 100	5.1/4
3/4 20	in mm	3.62 92	4.62 117	6.00 152	7.50 190	0.531 13.5	1.067 27.1	0.500 12.7	3/4	0.547 13.9	6.25 158	4.00 100	8.2/4.3
1 25	in mm	4.38 111	5.00 127	6.50 165	8.50 216	0.709 18	1.331 33.8	0.500 12.7	1	0.681 17.3	7.25 185	5.00 125	10.5/6.6
1 1/4 32	in mm	4.75 120	5.50 140	7.00 178	9.00 229	0.945 24	1.677 42.6	0.500 12.7	1 1/4	0.709 18	9.38 239	6.25 160	12.4/9.5
1 1/2 40	in mm	4.75 120	6.50 165	7.50 190	9.50 241	1.181 30	1.917 48.7	0.500 12.7	1 1/2	0.724 18.4	9.50 243	6.25 160	20.1/11
2 50	in mm	5.50 140	7.00 178	8.50 216	11.50 292	1.437 36.5	2.406 61.1	0.626 15.9	2	0.756 19.2	11.00 279	7.00 180	28/14.5

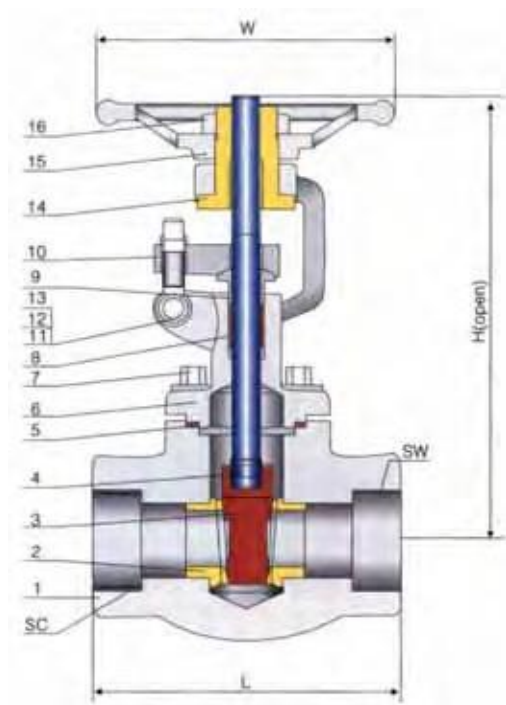
FORGED STEEL GATE VALVE 900 LB / 1500 LB

Applicable standards:

STEEL GATE VALVES API602
 STEEL VALVES ASME B16.34
 FACE TO FACE, MANUFACTURER STANDARD
 FACE TO FACE, FLANGES, ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 SOCKET-WELDING ENDS, ASME B16.11
 SCREWED ENDS ASME B1.20.1
 INSPECTION AND TEST API 598

Design descriptions:

OUTSIDE SCREW AND YOKE (OS&Y)
 BOLTED BONNET
 CHOICE OF WB, WELDED BONNET
 SINGLE WEDGE, FULLY GUIDED
 RENEWABLE SEAT RINGS
 YOKE INTEGRAL WITH BONNET
 RISING STEM AND NON-RISING HAND W
 SW, SCREWED ENDS
 BW, BUTT WELDING ENDS
 FLANGED ENDS



Materials of Parts

No.	Part Name	C-Si	ASTM Material 16Cr-12Ni-2Mo	11/4 Cr-1/2 Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Wedge	A182-F6a	A182-F316	A182-F6a+HF
4	Stem	A276-410	A276-316	A276-410
5	Stem Ring	A276-410	A182-316	A276-410+HF
6	Bonnet Gasket	Graphite+304	Graphite+316	Graphite+304
7	Bonnet Stud	A193-B7	A193-B8M	A193-B16
8	Packing		Graphite	
9	Gland	A276-410	A276-316	A276-410
10	Gland Flange	A105	A182-F316	A182-F11
11	Eye Bolt Pin	A276-410	A276-316	A276-410
12	Eye Bolt	A193-B7	A193-B8M	A193-B16
13	Eye Bolt Nut	A194-2H	A194-8M	A194-2H
14	Yoke Sleeve		A276-410	
15	Hand Wheel		Malleable Iron	
16	Hand Wheel Nut		Carbon Steel	

Note : 1) Spiral wound construction

Dimensional datas of 900Lb / 1500Lb

	NPS DN		L1"	H(opne)	W	Wt2 (kg)	
	Conv.	Full				Bolted	Welded
900Lb	3/8		95	169	100	2.5	2.4
	1/2	3/8	111	197	125	4.3	4.2
	3/4	1/2	111	197	125	4.2	4.0
	1	3/4	120	236	160	6.6	6.3
1500Lb	1 1/4	1	120	246	160	8.8	8.7
	1 1/2	1 1/4	140	283	180	12.5	12.1
	2	1 1/2	178	330	200	17.2	17.2
		2	210	354	240	23.5	22.0

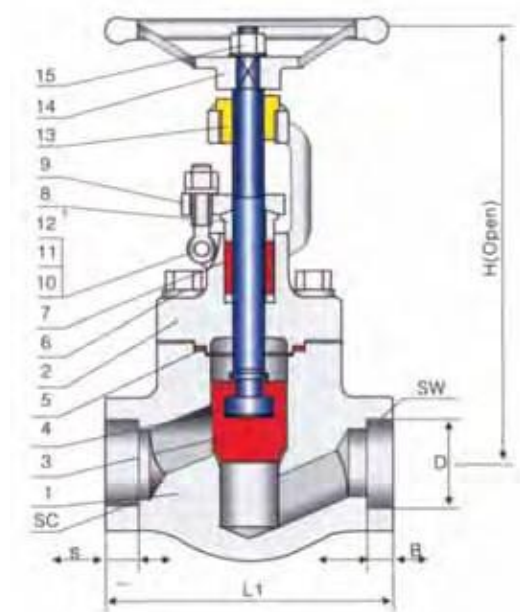
FORGED STEEL GLOBE VALVE 800 LB

Applicable standards:

STEEL GATE VALVES API602
 STEEL VALVES ASME B16.34
 FACE TO FACE, MANUFACTURER STANDARD
 FACE TO FACE, FLANGES, ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 SOCKET-WELDING ENDS, ASME B16.11
 SCREWED ENDS ASME B1.20.1
 INSPECTION AND TEST API 598

Design descriptions:

OUTSIDE SCREW AND YOKE (OS&Y)
 BOLTED BONNET
 CHOICE OF WB, WELDED BONNET
 LOOSE DISC, CHOICE OF PLUG OR BALL
 YOKE INTEGRAL WITH BONNET
 RISING STEM AND HAND WHEEL
 HORIZONTAL SERVICE
 SW, SOCKET-WELDING ENDS
 SC, SCREWED ENDS
 BW, BUTT WELDING ENDS



Materials of Parts

No.	Part Name	C-Si	ASTM Material 16Cr-12Ni-2Mo	1 1/4 Cr-1/2 Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F6a+HF
4	Stem	A276-410	A276-316	A276-410
5	Bonnet Gasket	Graphite+304	Graphite+316	Graphite+304
6	Bonnet Stud	A193-B7	A193-B8M	A193-B16
7	Packing		Graphite	
8	Gland	A276-410	A276-316	A276-410
9	Gland Flange	A105	A182-F316	A182-F11
10	Eye Bolt Pin	A276-410	A276-316	A276-410
11	Eye Bolt	A193-B7	A193-B8M	A193-B16
12	Eye Bolt Nut	A194-2H	A194-8M	A194-2H
13	Yoke Sleeve		A276-410	
14	Hand Wheel		Malleable Iron	
15	Hand Wheel Nut		Carbon Steel	

Note : 1) seat integral with body
 2) Spiral wound construction

Dimensional datas of 150Lb / 300Lb / 600Lb

NPS DN	Unit	L1"	L(Flanged Ends)			d	SW			SC	H(opne)	D0	Wt2 (kg)
			150Lb	300Lb	600Lb		D	B	NPT	S			
3/8 10	in mm	3.12 79	4.00 102	6.00 152	6.50 165	0.354 9	0.693 17.6	0.378 9.6	3/8	0.540 13.6	6.50 164	4.00 100	3.8/2.8
1/2 15	in mm	3.12 79	4.25 108	6.00 152	6.50 165	0.354 9	0.858 21.8	0.78 9.6	1/2	0.535 13.6	6.50 164	4.00 100	5.6/3.4
3/4 20	in mm	3.62 92	4.62 117	7.00 178	7.50 190	0.512 13	1.067 27.1	0.500 12.7	3/4	0.547 13.9	6.50 164	4.00 100	7.8/4.7
1 25	in mm	4.38 111	5.00 127	8.00 203	8.50 216	0.689 17.5	1.331 33.8	0.500 12.7	1	0.681 17.3	8.00 203	5.00 125	12.5/9.2
1 1/4 32	in mm	4.75 120	5.50 140	8.50 216	9.00 229	0.906 23	1.677 42.6	0.500 12.7	1 1/4	0.709 18	8.88 224	6.25 160	17/10.5
1 1/2 40	in mm	6.00 152	5.50 140	9.00 229	9.50 241	1.142 29	1.917 48.7	0.500 12.7	1 1/2	0.724 18.4	10.25 260	6.25 160	23.5/13.3
2 50	in mm	6.75 172	8.00 203	10.50 267	11.50 292	1.378 35	2.406 61.1	0.626 15.9	2	0.756 19.2	11.88 300	7.00 180	38.8/18.9

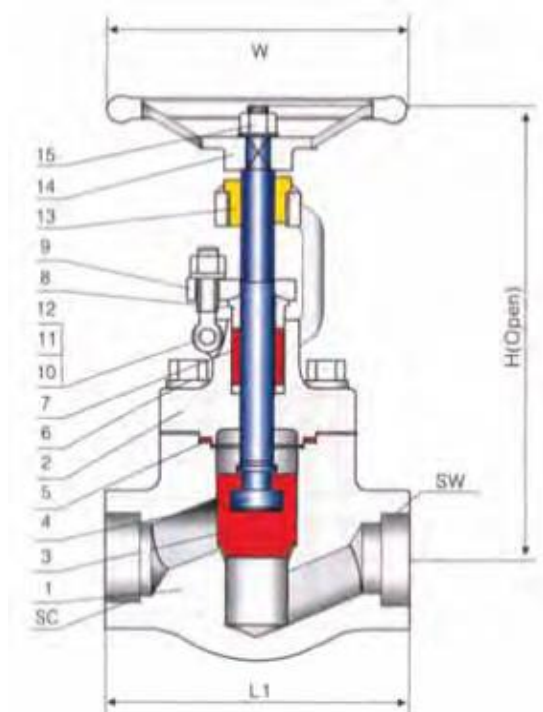
FORGED STEEL GLOBE VALVE 900 LB / 1500 LB

Applicable standards:

STEEL GATE VALVES API602
 STEEL VALVES ASME B16.34
 FACE TO FACE, MANUFACTURER STANDARD
 FACE TO FACE, FLANGES, ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 SOCKET-WELDING ENDS, ASME B16.11
 SCREWED ENDS ASME B1.20.1
 INSPECTION AND TEST API 598

Design descriptions:

OUTSIDE SCREW AND YOKE (OS&Y)
 BOLTED BONNET
 CHOICE OF WB, WELDED BONNET
 SINGLE WEDGE, FULLY GUIDED
 RENEWABLE SEAT RINGS
 YOKE INTEGRAL WITH BONNET
 RISING STEM AND NON-RISING HAND WHE
 SW, SCREWED ENDS
 BW, BUTT WELDING ENDS
 FLANGED ENDS



Materials of Parts

No.	Part Name	ASTM Material		
		C-Si	16Cr-12Ni-2Mo	1 1/4 Cr-1/2 Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Bonnet	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F6a+HF
4	Stem	A276-410	A276-316	A276-410
5	Bonnet Gasket	Graphite+304	Graphite+316	Graphite+304
6	Bonnet Stud	A193-B7	A193-B8M	A193-B16
7	Packing		Graphite	
8	Gland	A276-410	A276-316	A276-410
9	Gland Flange	A105	A182-F316	A182-F11
10	Eye Bolt Pin	A276-410	A276-316	A276-410
11	Eye Bolt	A193-B7	A193-B8M	A193-B16
12	Eye Bolt Nut	A194-2H	A194-8M	A194-2H
13	Yoke Sleeve		A276-410	
14	Hand Wheel		Malleable Iron	
15	Hand Wheel Nut		Carbon Steel	

Note : 1) seat integral with body
 2) Spiral wound construction

Dimensional datas of 900Lb / 1500Lb

	NPS DN		L1"	H(opne)	W	Wt2 (kg)	
	Conv.	Full				Bolted	Welded
900Lb	3/8		95	171	100	2.2	2.0
	1/2	3/8	111	207	125	3.7	3.4
	3/4	1/2	111	207	125	3.6	3.3
	1	3/4	120	240	160	6.8	6.0
1500Lb	1 1/4	1	152	258	160	7.6	5.6
	1 1/2	1 1/4	172	330	180	11.6	10.3
	2	1 1/2	200	355	200	15.0	14.2
		2	200	370	240	21.9	18.0

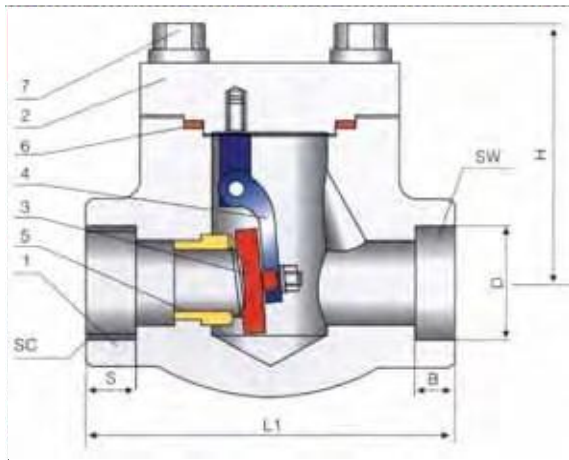
FORGED STEEL CHECK VALVE 800 LB

Applicable standards:

STEEL CHECK VALVES API602
 STEEL VALVES ASME B16.34
 FACE TO FACE, MANUFACTURER STANDARD
 FACE TO FACE, FLANGES, ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 SOCKET-WELDING ENDS, ASME B16.11
 SCREWED ENDS ASME B1.20.1
 INSPECTION AND TEST API 598

Design descriptions:

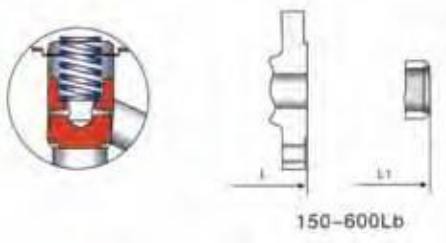
BOLTED COVER
 CHOICE OF WB, WELDED COVER
 SEAT RINGS TYPE
 SEAT RINGS INTEGRAL WITH BODY OF LIFT
 HORIZONTAL OR VERTICAL SERVICE
 SW, SOCKET-WELDING ENDS
 SC, SCREWED ENDS
 BW, BUTT WELDING ENDS
 FLANGED ENDS



Materials of Parts

No.	Part Name	C-Si	ASTM Material 16Cr-12Ni-2Mo	1 1/4 Cr-1/2 Mo-Si
1	Body	A105	A182-F316	A182-F11
2	Cover	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F6a+HF
4	Hinge	A276-410	A276-316	A276-410
5	Seat	A276-410	A182-F316	A276-410+HF
6	Gasket	Graphite+304	Graphite+316	Graphite+304
7	Stud	A193-B7	A193-B8M	A193-B16

Note : 1) Lift type check valve seat ring integral with body.
 2) Spiral wound construction



Dimensional datas of 150Lb / 300Lb / 600Lb

NPS DN	Unit	L1"	L(Flanged Ends)			d	SW			SC	H(opne)	Wt2 (kg)
			150Lb	300Lb	600Lb		D	B	NPT	S		
3/8 10	in mm	3.12 79	4.00 102	6.00 152	6.50 165	0.354 9	0.693 17.6	0.378 9.6	3/8	0.540 13.6	2.40 61	3.8/2.8
1/2 15	in mm	3.12 79	4.25 108	6.00 152	6.50 165	0.354 9	0.858 21.8	0.78 9.6	1/2	0.535 13.6	2.40 61	5.6/3.4
3/4 20	in mm	3.62 92	4.62 117	7.00 178	7.50 190	0.512 13	1.067 27.1	0.500 12.7	3/4	0.547 13.9	2.40 61	7.8/4.7
1 25	in mm	4.38 111	5.00 127	8.00 203	8.50 216	0.689 17.5	1.331 33.8	0.500 12.7	1	0.681 17.3	3.07 78	12.5/9.2
1 1/4 32	in mm	4.75 120	5.50 140	8.50 216	9.00 229	0.906 23	1.677 42.6	0.500 12.7	1 1/4	0.709 18	3.31 84	17/10.5
1 1/2 40	in mm	4.75 120	6.50 165	9.00 229	9.50 241	1.142 29	1.917 48.7	0.500 12.7	1 1/2	0.724 18.4	10.25 3.98	23.5/13.3
2 50	in mm	5.50 140	8.00 203	10.50 267	11.50 292	1.378 35	2.406 61.1	0.626 15.9	2	0.756 19.2	4.72 120	38.8/18.9

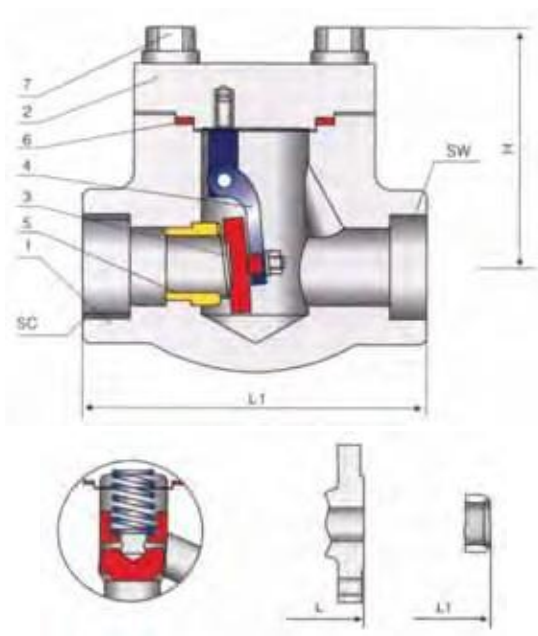
FORGED STEEL CHECK VALVE 900 LB / 1500 LB

Applicable standards:

STEEL CHECK VALVES API602
 STEEL VALVES ASME B16.34
 FACE TO FACE, MANUFACTURER STANDARD
 FACE TO FACE, FLANGES, ASME B16.10
 END FLANGES ASME B16.5
 BUTT WELDING ENDS ASME B16.25
 SOCKET-WELDING ENDS, ASME B16.11
 SCREWED ENDS ASME B1.20.1
 INSPECTION AND TEST API 598

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Materials of Parts

No.	Part Name	ASTM Material		
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1	Body	A105	A182-F316	A182-F11
2	Cover	A105	A182-F316	A182-F11
3	Disc	A182-F6a	A182-F316	A182-F6a+HF
4	Hinge	A276-410	A276-316	A276-410
5	Seat	A276-410	A182-F316	A276-410+HF
6	Gasket	Graphite+304	Graphite+316	Graphite+304
7	Stud	A193-B7	A193-B8M	A193-B16

Note : 1) Lift type check valve seat ring integral with body.
 2) Spiral wound construction

Dimensional datas of 900Lb / 1500Lb

	NPS DN	L1"	H(opne)	Wt2 (kg)
900Lb	3/8	92	79	3.1
	1/2	111	79	3.0
	3/4	111	79	3.6
	1	120	97	4.3
1500Lb	1 1/4	120	105	6.1
	1 1/2	140	120	8.8
	2	178	140	12.6