



FBV VALVE

PRODUCT GUIDE

[Http://www.fbvalve.com](http://www.fbvalve.com)

FBV

Engineered Solutions

Version: GV-12A

FBV VALVE

CONTENTS

FBV Valve / Cast Steel Valve Series

Cast Steel Gate Valve.....	01~05
Cast Steel Gate Valve (Pressure Seal Bonnet).....	06~08
Cast Steel Globe Valve.....	09~12
Cast Steel Globe Valve (Pressure Seal Bonnet).....	13~15
Cast Steel Check Valve.....	16~19
Cast Steel Check Valve (Pressure Seal Bonnet).....	20~22
Cast Steel Lift Type Check Valve.....	23~24
Cast Steel Dual Plate Check Valve.....	25~26

FBV Valve / Forged Steel Valve Series

Forged Steel Gate Valve.....	27~32
Forged Steel Globe Valve.....	33~37
Forged Steel Check Valve.....	38~40

FBV

Cast Steel Gate Valve

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Cast Steel Gate Valve

└ Standards

Design and manufacture: API 600 (ISO 10434), ASME B16.34

Test & Inspection : API 598.

End flange dimension: ASME B16.5 (for NPS \leq 24); ASME B16.47 series B, API 605 or ASME B16.47 series A, MSS SP-44 (for NPs $>$ 24).

BW end dimension: ASME B16.25.

Face to face and end to end dimension: ASME B16.10.

Pressure-temperature rating: ASME B16.34.

└ Design of Disc

Gate Valves with NPS \geq 2 are flexible wedged gate; gate valves with NPS $<$ 2 are solid wedged gate.

└ Body and Bonnet Connection

The body and bonnet of Class150~Class 900 gate valves are usually connected with studs and nuts. And the body and bonnet of Class1500~Class 2500 gate valves are usually a pressure sealed design.

└ Gasket of Cover Flange

Carbon steel or stainless steel + flexible graphite combined gasket is used for Class150 gate valve; stainless steel + flexible graphite wounded gasket is used for Class 300 gate valve; stainless steel + flexible graphite wounded gasket is used for Class 600 gate valve (ring joint gasket optional);ring joint gasket is used for Class 900 gate valve; pressurized seal design is used for Class1500~Class 2500 gate valve.

└ Actuation

Hand wheel or gear box is usually used for gate valve actuation. Chain wheel and electric actuator can be also used for gate valve actuation if requested by customers.

└ Belleville Spring Loaded Packing Impacting System

If being requested by the customer, the Belleville spring loaded packing impacting system can be adopted for enhancing the durability and reliability of the packing seal.

└ Packing Seal

Molded flexible graphite is used for packing material. PTFE or combined packing material can be also used if requested by Customers. The internal surface of the stuffing box, of which area is contacted with the packing, is fine finished (Ra 3.2 μ m).The stem surface, contacting with the packing, should be rolled and pressed after being precisely machined, so as to reach to the high finish and compactness (Ra 0.8 μ m) and ensure the reliable tightness of the stem area.

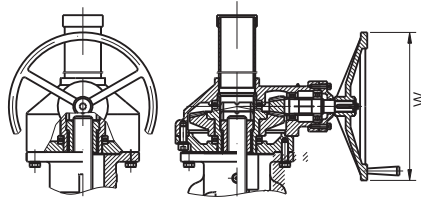
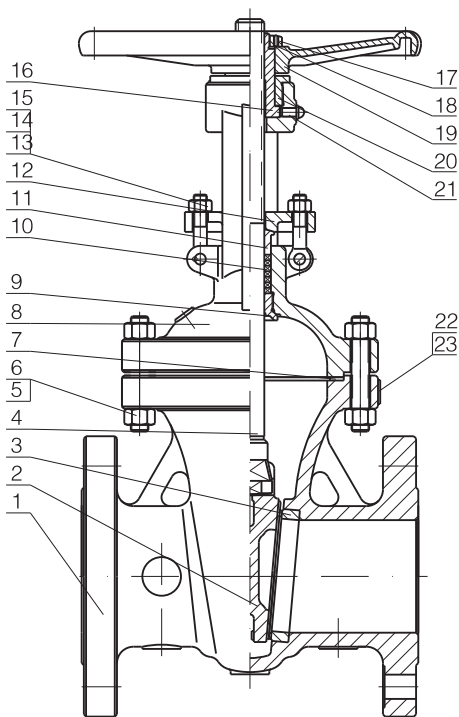
└ Back Seat

All our gate valves have the back seat sealing design. In most cases, the carbon steel gate valve is fitted with a renewable back seat. For stainless steel gate valves, the back seat is machined directly in the bonnet or is machined after welding. When the gate valve in the fully open position, the sealing of the back seat can be very reliable. However, as per the requirements of API 600, the packing shall not be added or changed under pressure.

└ Seat

For carbon steel gate valves, the seat is usually forged steel. The sealing surface of the seat is spray welded with hard alloy specified by customers. Renewable threaded seat is used for NPS \leq 10 gate valves, and welded on seat can be also optional if requested by customers. Welded on seats are used for NPS \leq 10 carbon steel gate valves. For stainless steel gate valves, stainless seats are generally used or have welded hard alloy faces applied to the seats.Threaded or welded on seat is also optional for stainless steel gate valve if requested by customers.

FBV Valve / Cast Steel Gate Valve Series



Available With Gear Box

Applicable Standards:

Design and Manufacture : API 600
 Face to Face and End to End: ASME B16.10
 Flanged End: ASME B16.5/ASME B16.47
 Butt Welded End: ASME B16.25
 Test & Inspection: API 598

Design Description:

Full bore design
 Outside Screw and Yoke(OS & Y)
 Bolted Bonnet(BB)
 Flexible wedge, fully guided
 Solid or split wedge gate
 Renewable seat rings
 Forged T-head stem
 Rising stem and non-rising handwheel
 Flanged or butt welding ends
 Available with bevel gear operator

Main Materials:

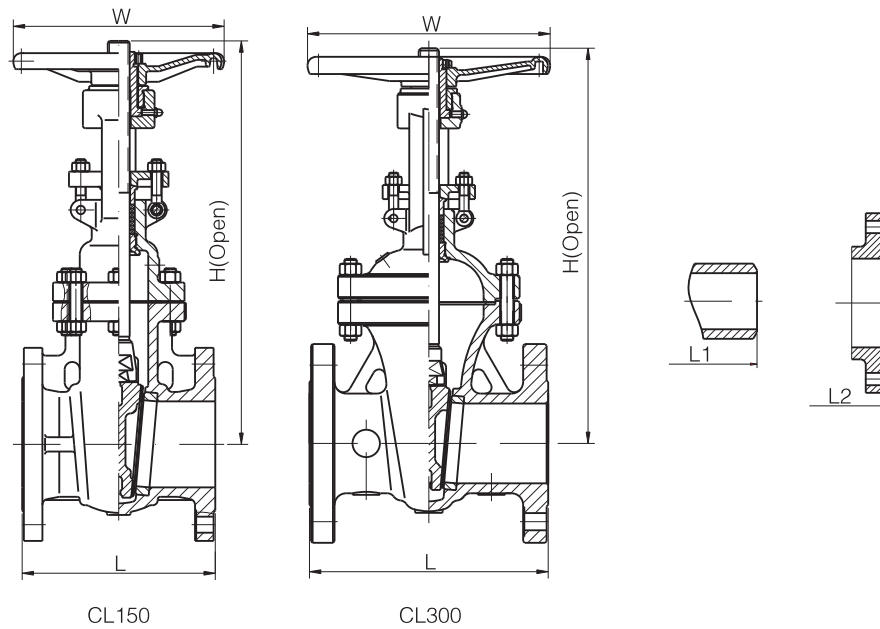
WCB, LCB, WC6, WC9, CF8, CF8M,
 CF3, CF3M, A995 4A, A995 5A, A995 6A,
 Alloy 20, Monel, Inconel

Main Parts Material Sheet

NO.	PART	ASTM Material				
		WCB	LCB ⁽¹⁾	WC6	CF8(M)	CF3(M)
1	BODY	A216 WCB	A352 LCB	A217 WC6	A351 CF8(M)	A351 CF3(M)
2	GATE	A216 WCB+13Cr	A352 LCB+13Cr	A217 WC6+STL	A351 CF8(M)	A351 CF3(M)
3	SEAT	A105+13Cr	A105+13Cr	A217 WC6+STL	A351 CF8(M)+STL.6	A351 CF3(M)+STL.6
4	STEM	A182 F6	A182 F6	A182 F6	A182 F304 / F316	A182 F304L(F316L)
5	BONNET BOLT	A193 B7	A320 L7	A193 B16	A193 B8(M)	A193 B8(M)
6	BONNET NUT	A194 2H	A194 7	A194 4	A194 8(M)	A194 8(M)
7	GASKET	SS304+GRAPHITE			PTFE / SS304+GRAPHITE	PTFE / SS316+GRAPHITE
8	BONNET	A216 WCB	A352 LCB	A217 WC6	A351 CF8(M)	A351 CF3(M)
9	BACKSEAT	A182 F6	A182 F6	A182 F6	-	-
10	PACKING	FLEXIBLE GRAPHITE			PTFE / FLEXIBLE GRAPHITE	
11	GLAND	A182 F6	A182 F6	A182 F6	A182 F304	A182 F304L(F316L)
12	GLAND FLANGE	A216 WCB	A352 LCB	A217 WC6	A351 CF8(M)	A351 CF3(M)
13	GLAND EYEBOLT	A193 B7			A193 B8	A193 B8
14	NUT	A194 2H			A194 8	A194 8
15	PIN	AISI 1025			AISI 1025	
16	STEM NUT	BRONZE			BRONZE	
17	HANDWHEEL NUT	AISI 1035			AISI 1035	
18	SCREW	ASTM A36			ASTM A36	
19	HANDWHEEL	A536 60-40-18			A536 60-40-18	
20	BEARING GLAND	AISI 1035			AISI 1035	
21	GREASE NIPPLE	BRASS			BRASS	
22	NAMEPLATE	SS304			SS304	

NOTE:(1) The length of the bonnet extension of cryogenic valves shall be determined based on actual working temperature.

Cast Steel Gate Valve (Bolt Bonnet)



Dimensions and Weights

CLASS 150

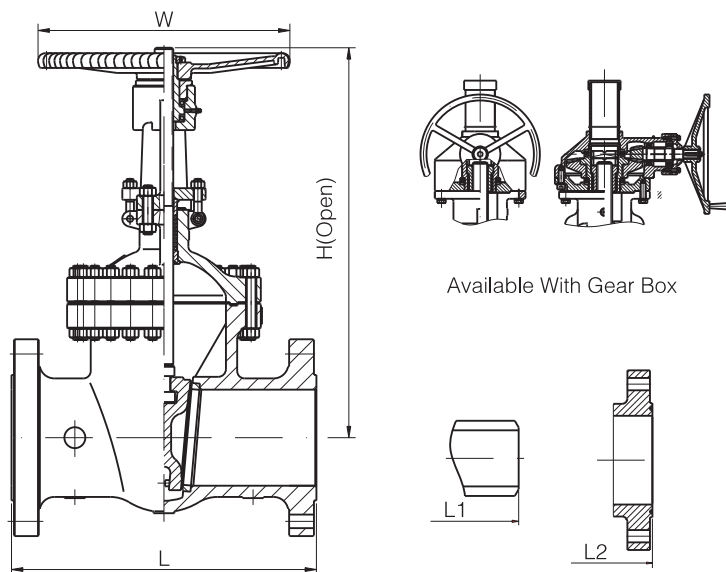
Size	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	40	42	48
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	1000	1050	1200
L (RF)	in	7.00	7.50	8.00	9.00	10.50	11.50	13.00	14.00	15.00	16.00	17.00	18.00	20.00	22.00	24.00	24.00	28.00	28.00	30	31	34
	mm	178	191	203	229	267	292	330	356	381	406	432	457	508	559	610	610	711	711	762	787	864
L1 (BW)	in	8.5	9.50	11.12	12.00	15.88	16.50	18.00	19.75	22.50	24.00	26.00	28.00	32.00	34.00	36.00	36.00	38.00	40.00	42	43	46
	mm	216	241	283	305	403	419	457	502	572	610	660	711	813	864	914	914	965	1016	1067	1092	1168
L2 (RTJ)	in	7.5	8	8.5	9.5	11	12	13.5	14.5	15.5	16.5	17.5	18.5	20.5	-	24.5	24.5	26.5	28.5	-	-	-
	mm	191	203	216	242	279	305	343	368	394	419	445	470	521	-	622	622	673	724	-	-	-
H (Open)	in	15.25	17.00	18.88	23.00	30.50	37.62	45.50	53.12	59.38	67.00	74.50	83.50	98.25	110.50	116.50	124.00	129.00	146.50	183.86	193.75	217.5
	mm	368	434	480	584	765	956	1149	1350	1508	1703	1892	2119	2500	2806	2960	3150	3280	3720	4670	4920	5525
W	in	8	8	10	12	12	14	16	18	20	22	24	26	29	29	32	32	38	40	30	30	30
	mm	200	200	250	300	300	350	400	450	500	550	600	640	720	720	800	800	950	1000	760	760	760
WT(kg)	RF	18	25	32	50	77	121	178	265	363	463	621	792	1190	1521	1838	2261	2490	3310	4815	5300	7110
	BW	15	18	26	41	69	108	156	248	330	424	587	752	1144	1570	1900	3310	2540	3380	4840	5275	7050

Dimensions and Weights

CLASS 300

Size	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	40	42	48
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900	1000	1050	1200
L/L1 (RF/BW)	in	8.50	9.50	11.12	12.00	15.88	16.50	18.00	19.75	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	68.00	76	78	88
	mm	216	241	283	305	403	419	457	502	762	838	914	991	1143	1245	1346	1397	1524	1727	1930	1981	2235
L2 (RTJ)	in	9.12	10.12	11.75	12.62	16.50	17.12	18.62	20.38	30.62	33.62	36.62	39.75	45.88	50.00	54.00	56.00	61.12	69.12	-	-	-
	mm	232	257	298	321	419	435	473	518	778	854	930	1010	1165	1270	1372	1422	1553	1756	-	-	-
H (OPEN)	in	16.12	17.88	20.00	24.00	31.75	39.38	47.62	55.75	62.25	67.88	77.12	86.38	102.00	117.00	122.00	126.00	130.00	152.00	188.63	198.13	217.38
	mm	410	453	509	612	805	1000	1210	1415	1580	1725	1960	2195	2590	2975	3100	3200	3300	3860	4791	5032	5522
W	in	8	8	10	12	14	16	18	20	22	22	24	26	29	29	32	32	38	40	24	24	24
	mm	200	200	250	300	350	400	450	500	550	550	600	640	720	720	800	800	950	1000	610	610	610
WT (Kg)	RF/RTJ	23	35	50	71	144	209	322	482	683	950	1145	1635	2660	3090	3310	3595	3720	3985	8460	9500	12400
	BW	17	26	39	53	113	164	256	390	565	805	965	1410	2305	2540	2725	3055	3360	3630	6160	6800	9000

Cast Steel Gate Valve (Bolt Bonnet)



Available With Gear Box

Dimensions and Weights

CLASS 600

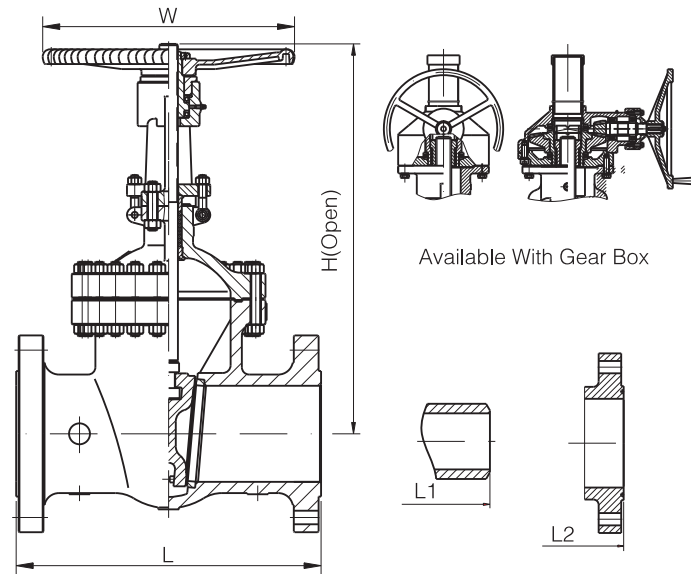
Size	in	2	2½	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900
L/L1 (RF/BW)	in	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00	57.00	61.00	65.00	70.00	82.00
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1549	1651	1778	2083
L2 (RTJ)	in	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	57.50	61.50	65.50	70.62	82.62
	mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	1461	1562	1664	1794	2099
H (OPEN)	in	16.50	18.75	20.38	25.50	33.00	40.38	48.38	57.00	62.00	70.62	76.00	87.00	101.50	105.00	109.50	114.00	124.00	140.00
	mm	418	476	518	646	840	1025	1230	1450	1575	1795	1930	2210	2580	2665	2780	2895	3150	3560
W	in	8	10	10	12	18	20	24	24	24	24	26	26	29	29	32	32	38	40
	mm	200	250	250	300	450	500	600	600	600	600	640	640	720	720	800	800	950	1000
WT (Kg)	RF/RTJ	36	52	67	112	170	393	610	890	1245	1530	1965	2450	2995	3475	3725	2045	4185	4480
	BW	29	42	53	83	125	310	472	730	1055	1240	1625	2030	2590	2855	3065	3440	3780	4085

Dimensions and Weights

CLASS 900

Size	in	2	2½	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
L/L1 (RF/BW)	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.50	44.50	48.00	52.00	61.00
	mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1549
L2 (RTJ)	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88	48.50	52.50	61.75
	mm	371	422	384	460	613	740	841	968	1038	1140	1232	1334	1568
H (OPEN)	in	19.62	21.50	22.50	26.62	35.50	43.50	53.00	60.00	74.88	81.00	87.00	101.00	104.00
	mm	498	547	573	678	900	1103	1345	1525	1900	2055	2215	2565	2640
W	in	10	10	12	18	20	24	26	29	32	32	38	38	40
	mm	250	250	300	450	500	600	640	720	800	800	950	950	1000
WT (Kg)	RF/RTJ	74	101	131	172	335	640	1100	1600	2250	2850	3060	3835	4900
	BW	54	78	105	135	260	515	920	1380	2010	2565	2485	3250	4065

Cast Steel Gate Valve (Bolt Bonnet)



Dimensions and Weights

CLASS 1500

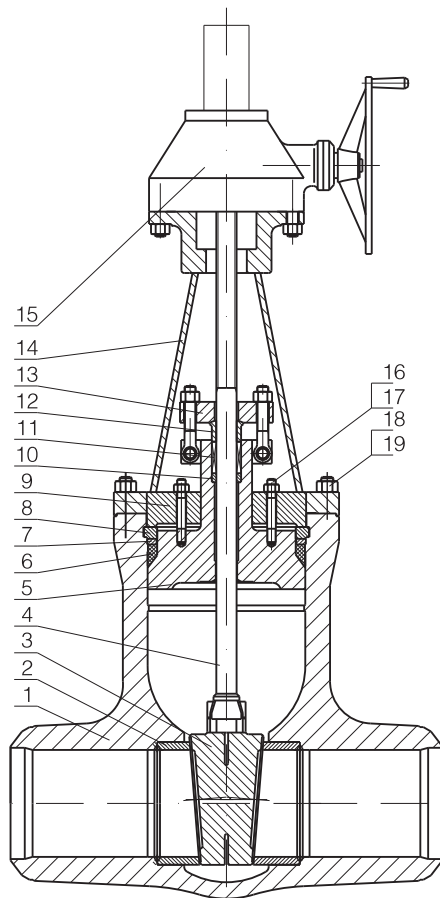
Size	in	2	2½	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
L/L1 (RF/BW)	in	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50	49.50	54.50	60.50	65.50	76.50
	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943
L2 (RTJ)	in	15.50	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	61.38	66.38	77.62
	mm	371	422	473	549	711	841	1000	1146	1276	1407	1559	1686	1972
H (OPEN)	in	24.25	26.00	30.00	34.12	39.50	45.00	54.00	61.00	74.88	80.50	93.75	101.50	114.75
	mm	615	658	760	868	1005	1145	1370	1550	1900	2050	2380	2580	2915
W	in	10	12	18	20	24	18	18	24	24	24	24	24	24
	mm	250	300	450	500	600	460	460	600	600	600	600	600	600
WT (Kg)	RF/RTJ	116	166	209	296	510	920	1910	3145	4100	6200	8965	13100	15860
	BW	105	150	188	265	412	760	1640	2755	3200	5300	8070	11790	14275

Dimensions and Weights

CLASS 2500

Size	in	2	2½	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
L/L1 (RF/BW)	in	17.75	20.00	22.75	26.50	36.00	40.25	50.00	56.00	-	-	-	-	-
	mm	451	508	578	673	914	1022	1270	1422	-	-	-	-	-
L2 (RTJ)	in	17.88	20.50	23.00	26.88	36.50	10.88	50.88	56.88	-	-	-	-	-
	mm	454	514	584	683	927	1038	1292	1445	-	-	-	-	-
H (OPEN)	in	21.88	29.00	35.00	41.50	57.00	63.38	81.75	89.75	-	-	-	-	-
	mm	631	736	890	1055	1450	1610	2075	2280	-	-	-	-	-
D0	in	12	18	20	20	24	24	24	24	-	-	-	-	-
	mm	300	450	500	500	600	600	600	600	-	-	-	-	-
WT (Kg)	RF/RTJ	155	210	310	580	1600	2450	4570	7150	-	-	-	-	-
	BW	124	160	245	460	1310	2010	3800	6000	-	-	-	-	-

Cast Steel Gate Valve (Pressure Seal Bonnet)



Applicable Standards:

Design and Manufacture: ASME B16.34
 Face to Face and End to End: ASME B16.10
 Flanged End: ASME B16.5/ASME B16.47
 Butt Welded End: ASME B16.25
 Test & Inspection: API 598

Design Description:

Full bore design
 Outside Screw and Yoke(OS & Y)
 Pressure Seal Bonnet(PSB)
 Flexible wedge, fully guided
 Solid or split wedge gate
 Renewable seat rings
 Forged T-head stem
 Rising stem and non-rising handwheel
 Flanged or butt welding ends
 Available with bevel gear operator

Main Materials:

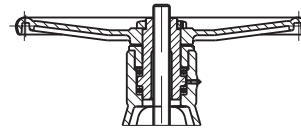
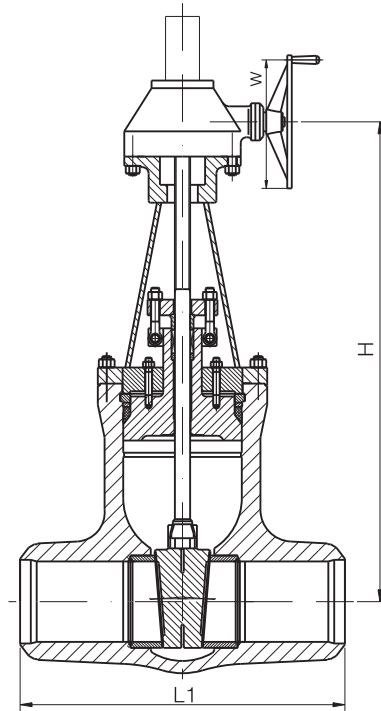
WCB, LCB, WC6, WC9, CF8, CF8M,
 CF3, CF3M, A995 4A, A995 5A, A995 6A,
 Alloy 20, Monel, Inconel

Main Parts Material Sheet

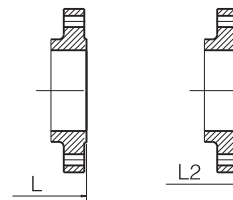
NO.	PART	ASTM Material				
		WCB	WC6	WC9	CF8(M)	CF3(M)
1	BODY	A216 WCB	A217 WC6	A217 WC9	A351 CF8(M)	A351 CF3(M)
2	SEAT	A105+STL	A217 WC6+STL	A217 WC9+STL	A351 CF8(M)+STL.6	A351 CF3(M)+STL.6
3	GATE	A216 WCB+STL	A217 WC6+STL	A217 WC9+STL	A351 CF8(M)+STL.6	A351 CF3(M)+STL.6
4	STEM	A182 F6	A182 F6	A182 F6	A182 F304(F316)	A182 F304L(F316L)
5	BONNET	A216 WCB	A217 WC6	A217 WC9	A351 CF8(F316)	A351 CF3(M)
6	PRESSURE SEAL RING	PURE IRON			A182 F304(F316)	A182 F304L(F316L)
7	RING	A182 F6			A182 F304(F316)	A182 F304L(F316L)
8	SEGMENT RING	A182 F6			A182 F304(F316)	A182 F304L(F316L)
9	BONNET RETAINER	A105	A182 F11	A182 F22	A182 F304(F316)	A182 F304L(F316L)
10	PACKING WASHER	F6a			SS304(F316)	SS304L(F316L)
11	PACKING	SS304+FLEXIBLE GRAPHITE			SS304+FLEXIBLE GRAPHITE/SS316+FLEXIBLE GRAPHITE	
12	GLAND	A182 F6			A182 F304(F316)	A182 F304(F316)
13	GLAND FLANGE	CARBON STEEL			A351 CF8	A351 CF8
14	YOKE	CARBON STEEL			A351 CF8	A351 CF8
15	GEAR BOX	ASSEMBLY			ASSEMBLY	
16	STUD	A193 B7	A193 B16	A193 B16	A193 B8	A193 B8
17	NUT	A194 2H	A194 4	A194 4	A194 8	A194 8

FBV Valve / Cast Steel Gate Valve

Cast Steel Gate Valve (Pressure Seal Bonnet)



Available With Handwheel Operator



Dimensions and Weights

CLASS 900

Size	in	2	2 1/2	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
L1 (BW)	in	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00
	mm	216	254	305	356	508	660	787	914	991	1092
L (RF)	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.50	44.50
	mm	368	419	381	457	610	737	838	935	1029	1130
L2 (RTJ)	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88
	mm	371	422	384	460	613	740	841	968	1038	1140
H (Open)	in	17.62	17.62	19.5	22.88	32.62	67.62	45.5	53.12	59	70.5
	mm	448	448	495	580	830	955	1155	1350	1500	1790
D0	in	14	14	14	14	18	24	28	34	34	34
	mm	350	350	350	350	450	600	700	850	850	850
WT(Kg)	BW	39	39	48	69	158	289	482	710	998	1390
	RF/RTJ	69	69	72	110	253	430	710	1025	1452	1960

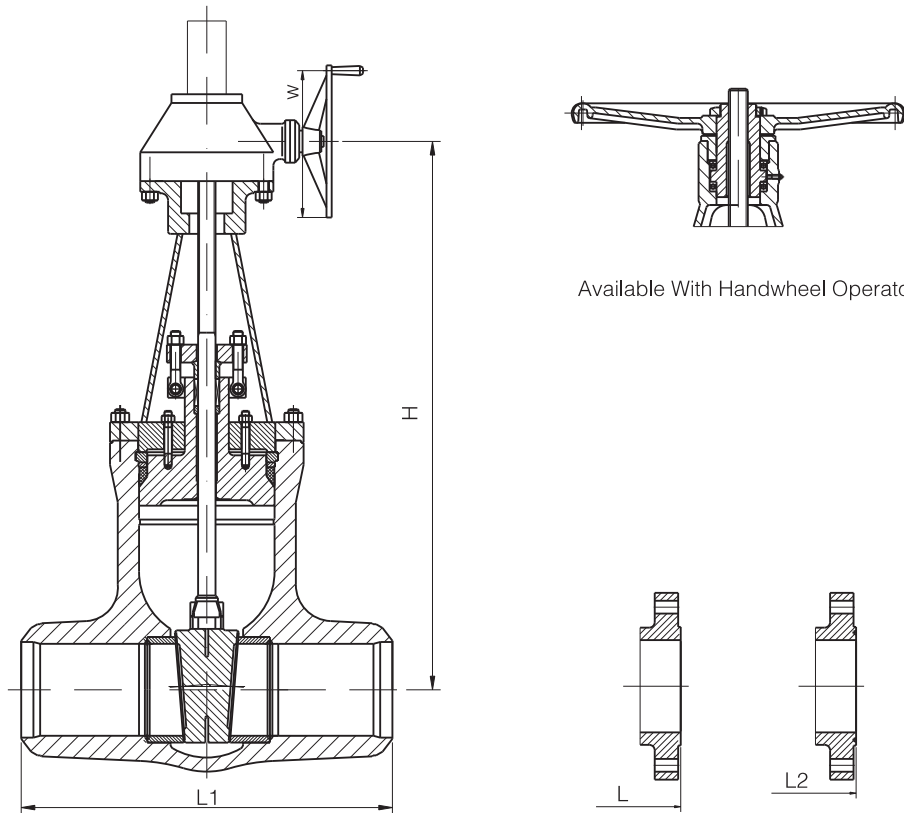
Dimensions and Weights

CLASS 1500

Size	in	2	2 1/2	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
L1 (BW)	in	8.5	10.00	12.00	16.00	22.00	28.00	34.00	39.00	42.00	47.00
	mm	216	254	305	406	559	711	864	991	1067	1194
L (RF)	in	14.50	16.50	18.50	21.5	27.75	32.75	39.00	44.50	49.50	54.50
	mm	368	419	470	546	705	832	991	1130	1257	1384
L2 (RTJ)	in	14.62	16.62	18.62	21.62	28	33.13	39.38	45.12	50.25	55.38
	mm	371	422	473	549	711	841	1000	1146	1276	1407
H (Open)	in	24.25	26	30	34.12	39.5	45	54	61	74.88	80.5
	mm	615	658	760	868	1005	1145	1370	1550	1900	2050
D0	in	10	12	18	20	24	18	18	24	24	24
	mm	250	300	450	500	600	460	460	600	600	6050
WT(Kg)	BW	105	150	188	265	412	760	1640	2755	3200	5300
	RF/RTJ	116	166	209	296	510	920	1910	3145	4100	2600

FBV Valve / Cast Steel Gate Valve

Cast Steel Gate Valve (Pressure Seal Bonnet)



Available With Handwheel Operator

Dimensions and Weights

CLASS 2500

Size	in	2	2 1/2	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
L1 (BW)	in	11.00	13.00	14.50	18.00	24.00	30.00	36.00	41.00	-	-
	mm	279	330	368	457	610	762	914	1041	-	-
L (RF)	in	17.50	20.00	22.75	26.5	36.00	40.25	50.00	56.00	-	-
	mm	451	508	578	673	914	1022	1270	1422	-	-
L2 (RTJ)	in	17.88	20.5	28	36.88	36.5	40.88	50.88	56.88	-	-
	mm	454	514	584	683	927	1038	1292	1445	-	-
H (Open)	in	21.88	29	35	41.5	57	63.38	81.75	89.75	-	-
	mm	631	736	890	1055	1450	1610	2075	2680	-	-
D0	in	12	18	20	20	24	24	24	24	-	-
	mm	300	450	500	500	600	600	600	600	-	-
WT(Kg)	BW	124	160	245	460	1310	2010	3800	6000	-	-
	RF/RTJ	155	210	310	580	1600	2450	4570	7150	-	-

FBV

Cast Steel Globe Valve

<http://www.fbvalve.com>



Cast Steel Globe Valve

Standards

Design and Manufacture: BS 1873 and ASME B16.34.
Test & Inspection : API 598.
End flange dimension: ASME B16.5.
BW end dimension: ASME B16.25.
Face to face and end to end: ASME B16.10.
Pressure-temperature ratings: ASME B16.34.

Design Features

Bolted Bonnet; outside screw and yoke; rising stems; Metallic seating surfaces.

Body and Bonnet Connection

The body and bonnet of Class150 ~ Class 900 valves are usually with studs and nuts. And the body and bonnet of Class1500~Class 2500 valves are usually of a pressure seal design.

Gasket of Cover Flange

Stainless steel + flexible graphite wounded gasket is used for Class150 and Class 300 globe valve. Stainless steel + flexible

graphite wounded gasket is used for Class 600, and ring joint gasket is optional for Class 600. Ring joint gasket is used for Class 900 globe valve. Pressurized seal design is used for Class 1500 ~ Class 2500 globe valve.

Actuation

Hand wheel, impact hand wheel & gear box are usually used for globe valve actuation. Chain wheel and electric actuator can be also used for globe valve actuation if requested by customers.

Packing Seal

Molded flexible graphite is used for packing material. PTFE or combined packing material can also be used if requested by customer.

The internal surface of the stuffing box, of which area is contacted with the packing, is of excellent finish (Ra 3.2 μ m). The stem surface, contacting with the packing, should be rolled and pressed after being precisely machined, so as to reach high finish and compactness (Ra 0.8 μ m) and ensure the reliable tightness of the stem area.

Belleville Spring Loaded Packing Impacting System

If requested by the customer, the Belleville spring loaded packing impacting can be adopted for enhancing the durability and reliability of the packing seal.

Back Seat Design

All our globe valves have the back seat sealing design. In most cases, the carbon steel globe valve is fitted with a renewable back seat.

For stainless steel globe valve, the back seat is machined directly in the bonnet or is machined after welding. When the globe valve is at fully open position, the sealing of the back seat can be very reliable. However, as per the requirement of API, it is not advisable to add or change packing by the means of back seating when the valve is pressure containing.

Seat

For carbon steel globe valve, the seat is usually forged steel. The sealing surface of the seat is spray welded with hard alloy specified by customer. Renewable threaded seat is used for NPS \leq 10 globe valve, and welded on seat can also be optional if requested by customers.

Welded on seat is used for NPS \geq 12 carbon steel globe valves. For stainless steel globe valve, integral seat is usually adopted, or to weld hard alloy directly integrally. Threaded or welded on seat is also optional for stainless steel globe valve if requested by Customers.

Stem Design

The stem is of integral forged design. The minimum diameter of the stem shall be as per the standard requirements.

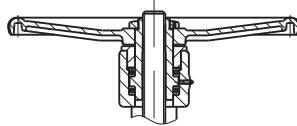
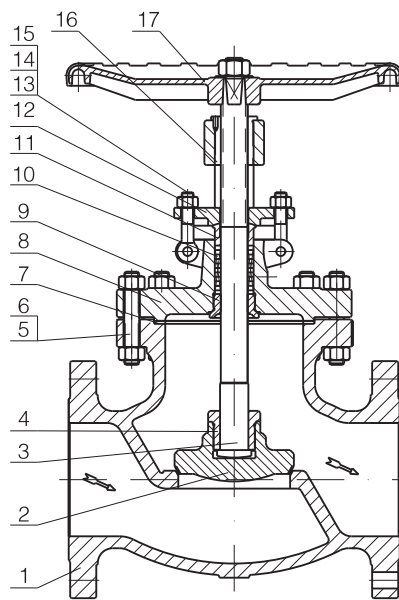
Stem Nut

Usually, the stem nut is made of copper alloy. It also can be made of ASTM A439 D2 if requested by customers. For large sized globe valve, rolling bearing is fitted at the two sides of stem nut in order to minimize the open and close torque of the globe valve.

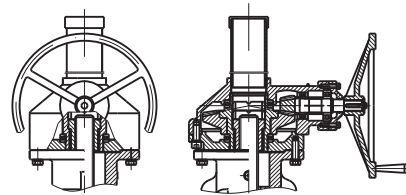
Special Globe Valve

Except for common globe valves, we also produce cryogenic globe Valve, bellow sealed globe valve, jacketed globe valve, etc.

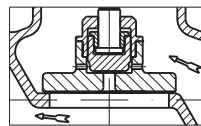
Cast Steel Globe Valve (Bolt Bonnet)



Available With Handwheel Operator



BEARINGS FOR LARGE TORQUE LOADS



DOUBLE DISC FOR HIGH AXIAL STRESS

Applicable Standards:

Design and Manufacture: BS 1873
 Face to Face and End to End: ASME B 16.10
 Flanged ends: ASME B16.5
 Butt welded ends: ASME B16.25
 Test & Inspection: API 598

Design Description:

Straight pattern body design
 Outside Screw and Yoke(OS & Y)
 Bolted Bonnet(BB)
 Yoke integral with bonnet
 Rising stem and handwheel
 Loose disc, optional plug or ball type
 Renewable seat ring
 Impact handwheel for NPS 10 & above
 Horizontal service
 Flanged or butt welding ends
 Available with bevel gear operator

Main Materials:

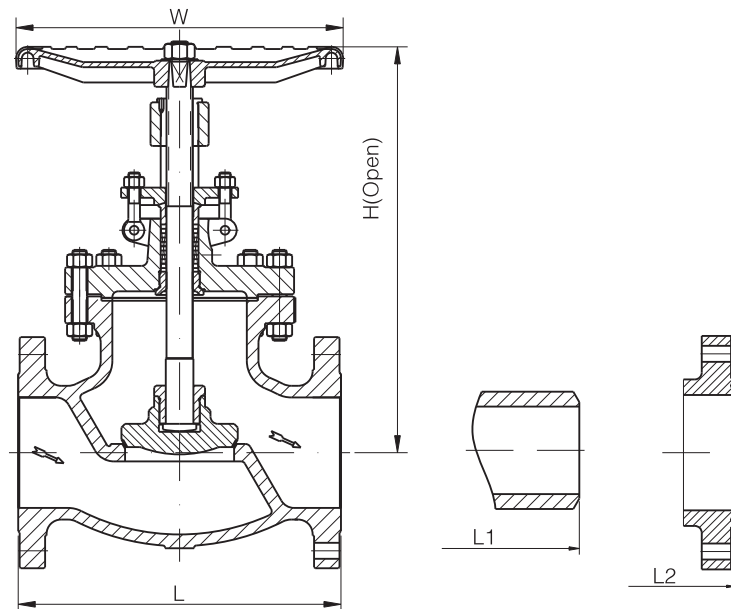
WCB, LCB, WC6, WC9, CF8, CF8M,
 CF3, CF3M, A995 4A, A995 5A, A995 6A,
 Alloy 20, Monel, Inconel

Main Parts Material Sheet

NO.	PART	ASTM Material				
		WCB	LCB ⁽¹⁾	WC6	CF8(M)	CF3(M)
1	BODY	A216 WCB+13Cr	A352 LCB+13Cr	A217 WC6+STL	A351 CF8(M)+STL	A351 CF3(M)+STL
2	DISC	A216 WCB+13Cr	A352 LCB+13Cr	A182 F11+STL	A351 CF8(M)	A351 CF3(M)
3	STEM	A182 F6	A182 F6	A182 F6	A182 F304(F316)	A182 F304L(F316L)
4	SLEEVE	A105	A105	A182 F11	A182 F304(F316)	A82 F304L(F316L)
5	BONNET BOLT	A193 B7	A320 L7	A193 B16	A193 B8(M)	A193 B8(M)
6	BONNET NUT	A194 2H	A194 7	A194 4	A194 8(M)	A194 8(M)
7	GASKET	SS304+GRAPHITE			PTFE / SS304+GRAPHITE	PTFE / SS316+GRAPHITE
8	BONNET	A216 WCB	A352 LCB	A217 WC6	A351 CF8(M)	A351 CF8M
9	BACKSEAT	A182 F6	A182 F6	A182 F6	-	-
10	PACKING	FLEXIBLE GRAPHITE			PTFE / FLEXIBLE GRAPHITE	
11	GLAND	A182 F6	A182 F6	A182 F6	A182 F304(F316)	A182 F304L(F316L)
12	GLAND FLANGE	A216 WCB	A352 LCB	A217 WC6	A351 CF8	A351 CF3
13	GLAND EYEBOLT		A193 B7		A193 B8	A193 B8
14	NUT		A194 2H		A194 8	A194 8
15	PIN		AISI 1025		AISI 1025	
16	STEM NUT		BRONZE		BRONZE	
17	HANDWHEEL NUT		AISI 1035		AISI 1035	

NOTE:(1) The length of the bonnet extension of cryogenic valves shall be determined based on actual working temperature.

Cast Steel Globe Valve (Bolt Bonnet)



Dimensions and Weights

CLASS 150

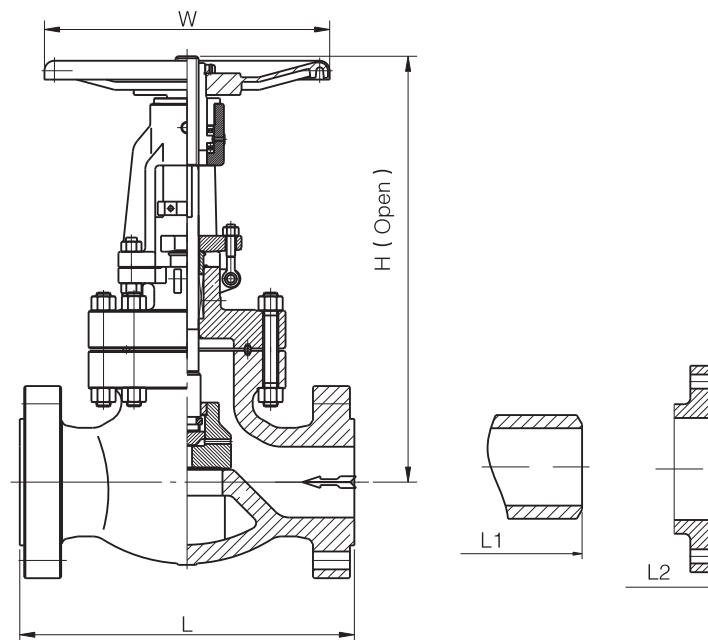
Size	in	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16
	mm	40	50	65	80	100	150	200	250	300	350	400
L/L1 (RF/BW)	in	6.5	8.00	8.50	9.50	11.50	16.00	19.50	24.50	27.50	31.00	36.00
	mm	165	203	216	241	292	406	495	622	698	787	914
L2 (RTJ)	in	7.0	8.00	8.50	9.50	11.50	16.00	19.50	24.50	27.50	31.00	36.00
	mm	178	203	216	241	292	406	495	622	698	787	914
H (Open)	in	14.25	15.00	21.00	17.50	20.25	22.00	24.25	32.00	35.88	48.38	57.00
	mm	326	380	535	445	515	560	615	815	910	1230	1450
D0	in	7.88	7	10	11	11	13	13	16	18	20	24
	mm	200	180	240	280	280	320	320	400	450	500	600
Weight (Kg)	RF/RTJ	18	19	30	41	64	86	110	280	380	510	740
	BW	14	16	22	33	43	72	88	245	345	450	665

Dimensions and Weights

CLASS 300

Size	in	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16
	mm	40	50	65	80	100	150	200	250	300	350	400
L/L1 (RF/BW)	in	9	10.50	11.50	12.50	14.00	17.50	22.00	24.50	28.00	-	-
	mm	229	267	292	318	356	444	559	622	711	-	-
L2 (RTJ)	in	9.5	11.12	12.12	13.12	14.62	18.12	22.62	25.12	28.62	-	-
	mm	241	282	308	333	371	460	575	638	727	-	-
H (Open)	in	14.17	16.75	19.00	19.88	22.50	25.25	33.25	35.50	38.62	-	-
	mm	360	425	485	505	570	640	845	900	980	-	-
D0	in	7.88	8	10	11	13	16	18	20	24	-	-
	mm	200	200	240	280	320	400	450	500	600	-	-
Weight (Kg)	RF/RTJ	25	26	32	38	56	96	150	360	550	-	-
	BW	20	21	22	27	41	75	117	310	492	-	-

Cast Steel Globe Valve (Bolt Bonnet)



Dimensions and Weights

CLASS 600

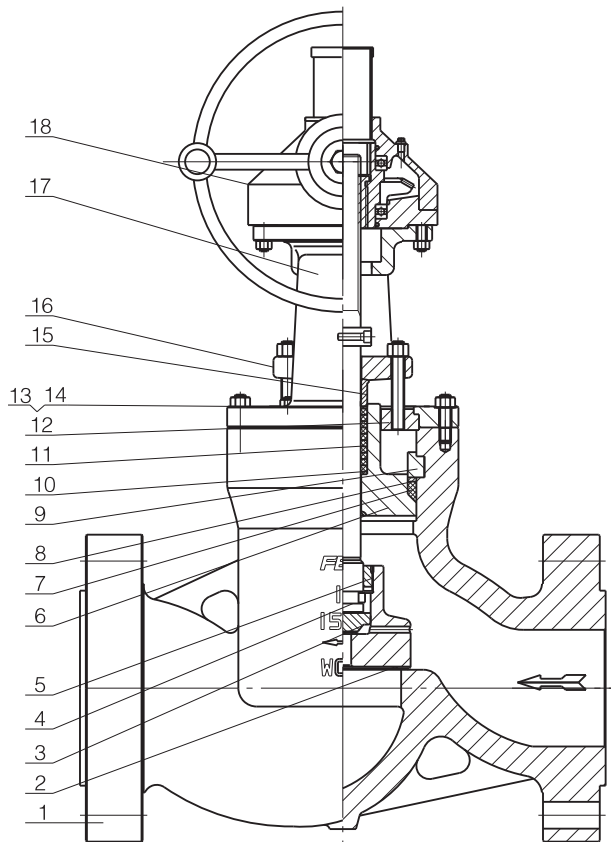
Size	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16
	mm	15	20	25	40	50	65	80	100	150	200	250	300	350	400
L/L1 (RF/BW)	in	6.50	7.50	8.50	9.50	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	-	-
	mm	165	190	216	241	292	330	356	432	559	660	787	838	-	-
L2 (RTJ)	in	-	-	-	-	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.13	-	-
	mm	-	-	-	-	295	333	359	435	562	663	790	841	-	-
H (Open)	in	7.25	7.62	9.00	11.00	17.50	19.75	21.00	24.50	29.50	36.50	44.88	53.12	-	-
	mm	185	195	230	280	445	502	533	622	750	927	1140	1350	-	-
D0	in	4	4	6	8	10	11	13	16	18	20	24	24	-	-
	mm	100	100	140	200	240	280	320	400	450	500	600	600	-	-
WT (Kg)	BW	6	8	14	23	35	50	60	110	230	410	770	1140	-	-
	RF/RTJ	4.8	6.2	9.5	16.5	27	34	42	84	192	350	680	1030	-	-

Dimensions and Weights

CLASS 900

Size	in	2	2 1/2	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L1 (BW)	in	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00
	mm	216	254	305	356	508	660	787	914
L (RF)	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00
	mm	368	419	381	457	610	737	838	965
L2 (RTJ)	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12
	mm	371	422	384	460	613	740	841	968
H (Open)	in	22	22	22	27	36.38	43.38	50.62	57
	mm	557	557	557	685	925	1100	1285	1450
D0	in	16	16	16	16	28	28	36	36
	mm	400	400	400	400	700	700	900	900
WT (Kg)	BW	46	53	68	100	270	450	740	1150
	RF/RTJ	75	82	95	135	355	680	1050	1480

Cast Steel Globe Valve (Pressure Seal Bonnet)



Applicable Standards:

Design and Manufacture :ASME B16.34
 Face to Face and End to End: ASME B 16.10
 Flanged ends: ASME B16.5
 Butt welded ends: ASME B16.25
 Test & Inspection: API 598

Design Description:

Straight pattern body design
 Outside Screw and Yoke(OS & Y)
 Bolted Bonnet(BB)
 Yoke integral with bonnet
 Rising stem and handwheel
 Loose disc, optional plug or ball type
 Renewable seat ring
 Impact handwheel for NPS 10 & above
 Horizontal service
 Flanged or butt welded ends
 Available with bevel gear operator

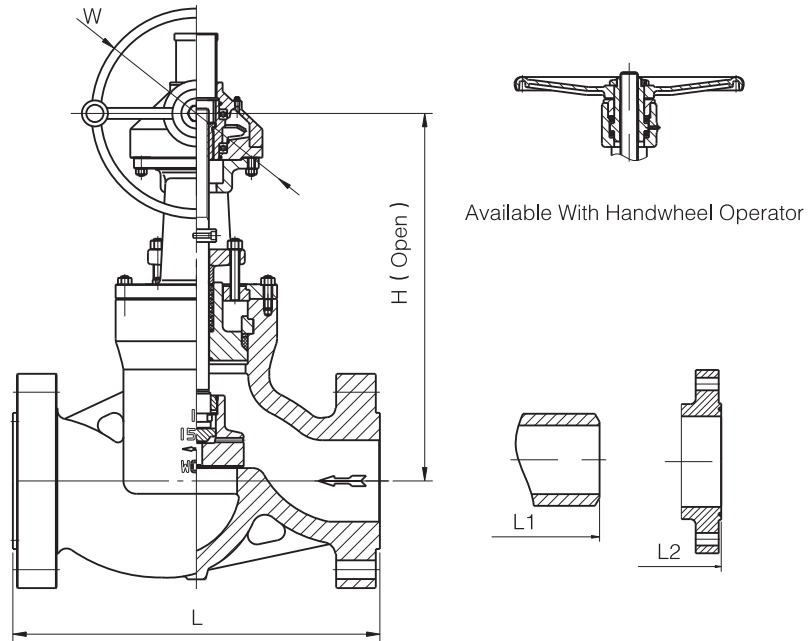
Main Materials:

WCB, LCB, WC6, WC9, CF8, CF8M,
 CF3, CF3M, A995 4A, A995 5A, A995 6A,
 Alloy 20, Monel, Inconel

Main Parts Material Sheet

NO.	PART	ASTM Material				
		WCB	WC6	WC9	CF8(M)	CF3(M)
1	BODY	A216 WCB	A217 WC6	A217 WC9	A351 CF8(M)	A351 CF3(M)
2	BIG DISC	A105+STL	A217 WC6+STL	A217 WC9+STL	A351 CF8(M)+STL.6	A351 CF3(M)+STL.6
3	SMALL DISC	A105+STL	A217 WC6+STL	A217 WC9+STL	A351 CF8(M)+STL.6	A351 CF3(M)+STL.6
4	STEM	A182 F6	A182 F6	A182 F6	A182 F304(F316)	A182 F304L(F316L)
5	DISC COVER	A105	A182 F6	A182 F6	A182 F304(F316)	A182 F304L(F316L)
6	BONNET	A105	A182 F11	A182 F22	A182 F304(F316)	A182 F304L(F316L)
7	PRESSURE SEAL RING	PURE IRON			A182 F304	A182 F316L
8	RING	A182 F6			A182 F304(F316)	A182 F304L(F316L)
9	SEGMENT RING	A182 F6			A182 F304(F316)	A182 F304L(F316L)
10	PACKING WASHER	A182 F6			SS304	SS316
11	PACKING	SS304+FLEXIBLE GRAPHITE			SS304+GRAPHITE	SS316+GRAPHITE
12	BONNET RETAINER	A105	A182 F11	A182 F22	A182 F304(F316)	A182 F304L(F316L)
13	STUD	A193 B7	A193 B16	A193 B16	A193 B8	A193 B8
14	NUT	A194 2H	A194 4	A194 4	A194 8	A194 8
15	GLAND	A182 F6			A182 F304	A182 F316
16	GLAND FLANGE	CARBON STEEL			A351 CF8	A351 CF3(M)
17	YOKE	CARBON STEEL			A351 CF8	A351 CF3(M)
18	GEAR BOX	ASSEMBLY				

Cast Steel Globe Valve (Pressure Seal Bonnet)



Dimensions and Weights

CLASS 900

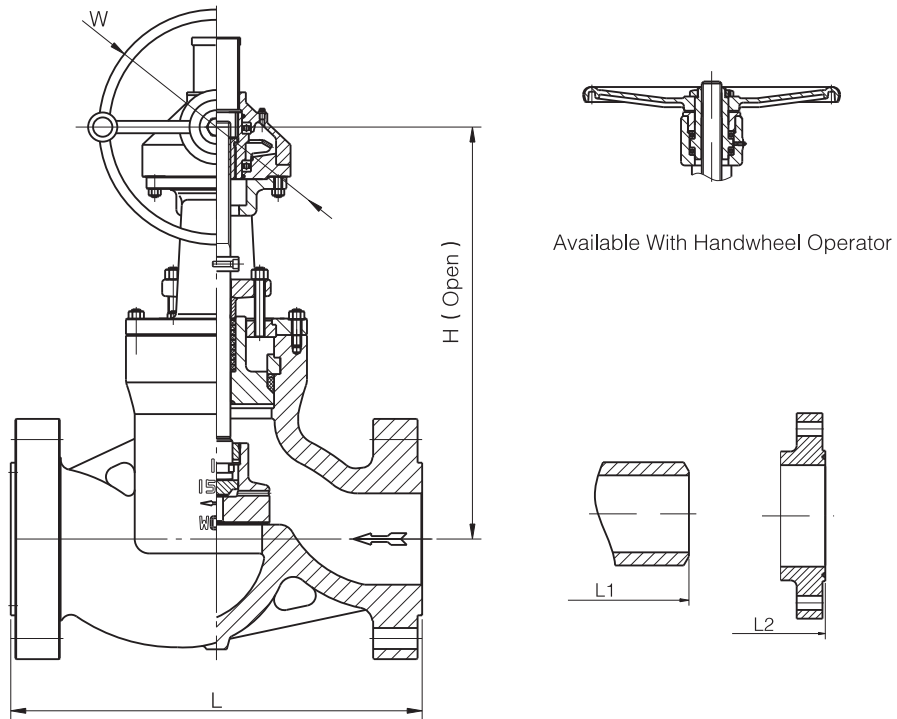
Size	in	2	2 ¹ / ₂	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L1 (BW)	in	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00
	mm	216	254	305	356	508	660	787	914
L (RF)	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00
	mm	368	419	381	457	610	737	838	965
L2 (RTJ)	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12
	mm	371	422	384	460	613	740	841	968
H (Open)	in	22	22	22	27	36.38	43.38	50.62	57
	mm	557	557	557	685	925	1100	1285	1450
D0	in	16	16	16	16	28	28	36	36
	mm	400	400	400	400	700	700	900	900
WT (Kg)	BW	46	53	68	100	270	450	740	1150
	RF/RTJ	75	82	95	135	355	680	1050	1480

Dimensions and Weights

CLASS 1500

Size	in	2	2 ¹ / ₂	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L1 (BW)	in	8.50	10.00	12.00	16.00	22.00	28.00	-	-
	mm	216	254	305	406	559	711	-	-
L (RF)	in	14.50	16.50	18.50	20.50	27.75	32.75	-	-
	mm	368	419	470	546	705	832	-	-
L2 (RTJ)	in	14.62	16.62	18.62	21.62	28.00	33.12	-	-
	mm	371	422	473	549	711	842	-	-
H (Open)	in	22	22	24.38	30	44.62	54.75	-	-
	mm	557	557	620	760	1135	1390	-	-
D0	in	16	18	20	24	28	36	-	-
	mm	400	450	500	600	700	900	-	-
WT (Kg)	BW	57	65	90	190	450	730	-	-
	RF/RTJ	86	112	162	240	580	950	-	-

Cast Steel Globe Valve (Pressure Seal Bonnet)



Dimensions and Weights

CLASS 2500

Size	in	2	2 ¹ / ₂	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L1 (BW)	in	11.00	13.00	14.50	18.00	24.00	-	-	-
	mm	279	330	368	457	610	-	-	-
L (RF)	in	17.75	20.00	22.75	26.50	36.00	-	-	-
	mm	451	508	578	673	914	-	-	-
L2 (RTJ)	in	17.88	20.54	23.00	26.88	36.50	-	-	-
	mm	454	514	584	683	927	-	-	-
H (Open)	in	23.38	20.38	28	32.25	49.62	-	-	-
	mm	595	595	710	820	1260	-	-	-
D0	in	16	20	24	28	36	-	-	-
	mm	400	500	600	700	900	-	-	-
WT (Kg)	BW	65	78	125	155	480	-	-	-
	RF/RTJ	115	136	205	275	860	-	-	-

FBV

Cast Steel Check Valve

<http://www.fbvalve.com>



Cast Steel Check Valve

Standards

Design and Manufacture: BS 1868, ASME B16.34, API 6D.
Test & Inspection : API 598 or API 6D.
End flange dimension: ASME B16.5 (for NPS≤24)
End flange dimension: ASME B16.5 (for NPS≤24 except for NPS 22);
MSS-SP-44 for NPS 22
ASME B16.47 series A for NPS≥26;
BW end dimension: ASME B16.25..
Face to face and end to end dimension: ASME B16.10.
Pressure-temperature rating: ASME B16.34.
Wall thickness: ASME B16.34 or BS 1868.

Seat

For carbon steel check valve, the seat is usually forged steel. The sealing surface of the seat is spray welded with hard alloy specified by the customer. Renewable threaded seat is used for NPS≤10 check valves, and welded on seat can also be optional if requested by customers. Welded on seat is used for NPS≥12 carbon steel gate valves. For stainless steel check valve, integral seat is usually applied, or to weld hard alloy directly integrally. Threaded or welded on seat is also optional for stainless steel check valve if requested by customers.

Design Features

Bolted cover (BC);
Swing or lift type disc;
Metallic seating surfaces.

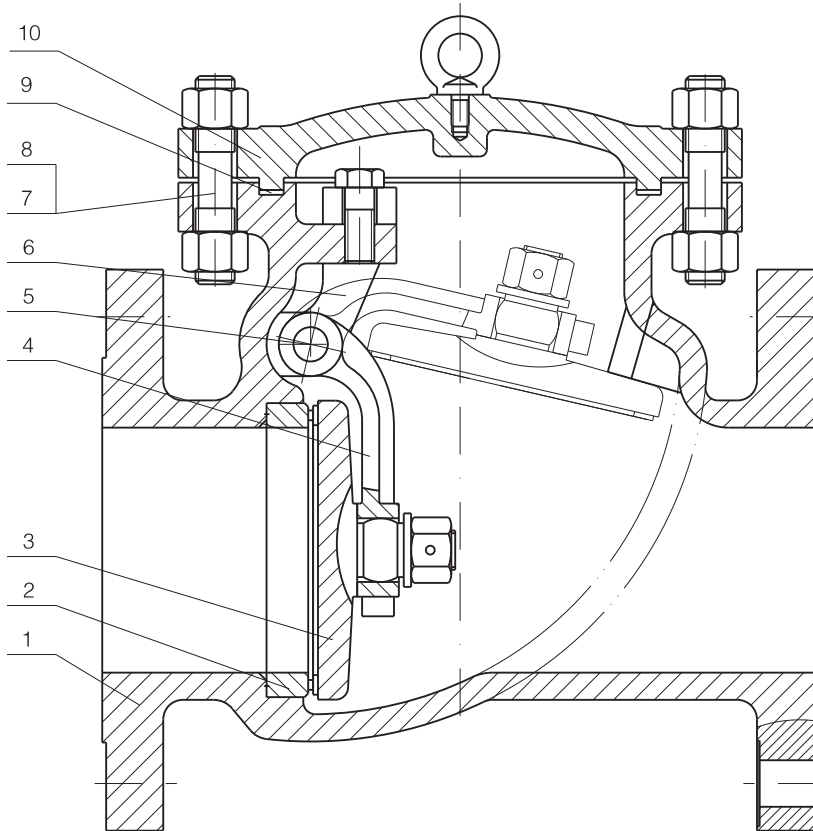
Body-to-Cover Joint

Stainless steel + flexible graphite wounded gasket is used for Class150 and Class 300 check valve; stainless steel flexible graphite wounded gasket is used for Class 600 check valve, and ring joint gasket is also optional for Class 600 check valve; ring joint gasket is used for Class 900 check valve; pressure seal design is used for Class1500 ~ Class 2500 check valves.

Body and Cover Connection

The body and bonnet of Class150 ~ Class 900 check valves are generally fastened with studs and nuts. And the body and bonnet of Class 1500 ~ Class 2500 check valves usually employ a pressure seal design.

Cast Steel Swing Check Valve (Bolt Cover)



Applicable Standards:

Design and Manufacture :BS1868
 Face to Face and End to End: ASME B 16.10
 Flanged ends: ASME B16.5
 Butt welded ends: ASME B16.25
 Test & Inspection: API 598

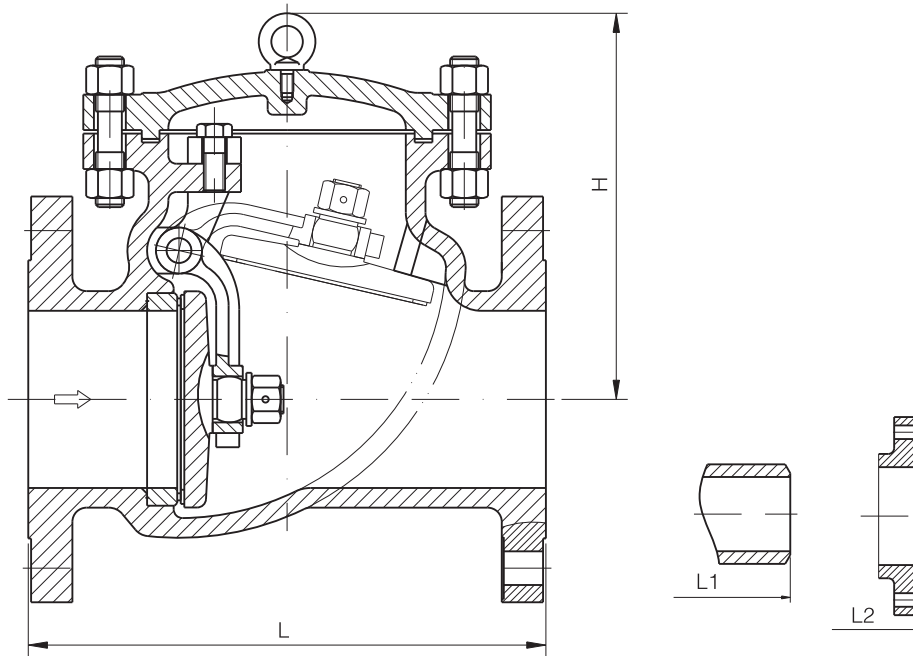
Main Materials:

WCB, LCB, WC6, WC9, CF8, CF8M,
 CF3, CF3M, A995 4A, A995 5A, A995 6A,
 Alloy 20, Monel, Inconel

Main Parts Material Sheet

NO.	PART	ASTM Material				
		WCB	LCB ⁽¹⁾	WC6	CF8(M)	CF3(M)
1	BODY	A216 WCB	A352 LCB	A217 WC6+STL	A351 CF8(M)+STL	A351 CF3(M)+STL
2	SEAT	A105+13Cr	A105+13Cr	-	-	-
3	DISC	A216 WCB+13Cr	A352 LCB+13Cr	A217 WC6+STL	A351 CF8(M)	A351 CF3(M)
4	HINGE	A216 WCB	A182 F6	A182 F6	A351 CF8(M)	A351 CF3(M)
5	HINGE PIN	A276 304	A182 F6	A182 F6	A182 F304(F316)	A182 F304(F316)
6	FORK	A216 WCB	A352 LCB	A217 WC6	A351 CF8(M)	A351 CF3(M)
7	COVER BOLT	A193 B7	A320 L7	A193 B16	A193 B8(M)	A193 B8(M)
8	COVER NUT	A194 2H	A194 7	A194 4	A194 8(M)	A194 8(M)
9	GASKET	SS304+GRAPHITE			PTFE/SS304+GRAPHITE	PTFE/SS316+GRAPHITE
10	COVER	A216 WCB	A352 LCB	A217 WC6	A351 CF8(M)	A351 CF3(M)

Cast Steel Swing Check Valve (Bolt Cover)



Dimensions and Weights

CLASS 150

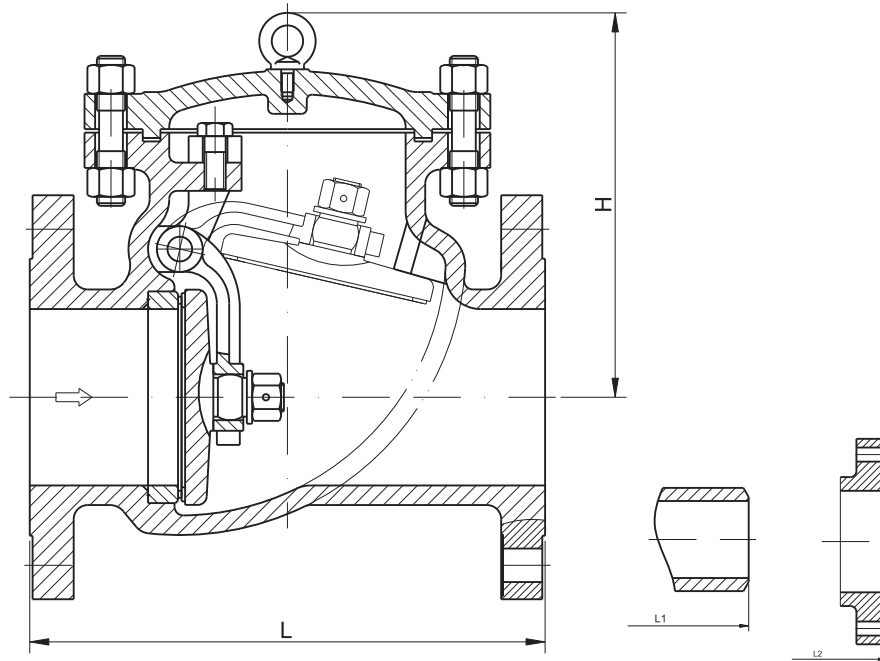
Size	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26
	mm	15	20	25	40	50	65	80	100	150	200	250	300	350	40	450	500	600	650
L/L1 (RF/BW)	in	4.25	4.62	5.00	6.50	8.00	8.50	9.50	11.50	14.00	19.50	24.50	27.50	31.00	34.00	38.50	38.50	51.00	-
	mm	108	117	127	165	203	216	241	292	356	495	622	699	787	864	978	978	1295	-
L2 (RTJ)	in	-	-	-	-	8.50	9.00	10.00	12.00	14.50	20.00	25.00	28.00	31.50	34.50	39.00	39.00	21.50	-
	mm	-	-	-	-	216	229	254	305	368	508	635	711	800	876	991	991	1308	-
H (Open)	in	3.12	3.38	3.88	4.38	6.00	6.50	6.88	8.00	11.50	13.88	15.38	17.00	18.75	20.62	22.88	24.62	24.75	-
	mm	80	85	100	110	152	165	175	204	293	353	390	432	475	525	582	627	883	-
WT (Kg)	BW	2.5	3.5	5	7.5	14	20	25	40	71	118	177	263	353	542	632	855	970	-
	RF/RTJ	2	3	3.5	5.5	10	12	17	29	57	96	143	227	295	468	552	755	831	-

Dimensions and Weights

CLASS 300

Size	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26
	mm	15	20	25	40	50	65	80	100	150	200	250	300	350	40	450	500	600	650
L/L1 (RF/BW)	in	6.00	7.00	8.00	9.00	10.50	11.50	12.50	14.00	17.50	21.00	24.50	28.00	33.00	34.00	38.50	40.00	53.00	-
	mm	152	178	203	229	267	292	318	356	445	533	622	711	838	864	978	1016	1346	-
L2 (RTJ)	in	-	-	-	-	11.12	12.12	13.12	14.62	18.12	21.62	25.12	28.62	33.62	34.62	39.12	40.75	53.88	-
	mm	-	-	-	-	283	308	333	371	460	549	638	727	854	879	994	1035	1368	-
H (Open)	in	3.12	3.38	3.88	4.38	6.00	6.50	6.88	8.00	11.50	13.88	15.38	17.00	18.75	20.62	22.88	24.62	34.75	-
	mm	80	85	100	110	152	165	175	204	293	353	390	432	475	525	582	627	883	-
WT (Kg)	BW	3	4	6	10	16	23	29	46	82	136	204	302	405	625	730	985	1115	-
	RF/RTJ	2.5	3.5	5	7	11	13	18	31	61	103	155	245	315	503	593	812	895	-

Cast Steel Swing Check Valve (Bolt Cover)



Dimensions and Weights

CLASS 600

Size	in	1/2	3/4	1	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26
	mm	15	20	25	40	50	65	80	100	150	200	250	300	350	40	450	500	600	650
L/L1 (RF/BW)	in	6.50	7.50	8.50	9.50	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00	–
	mm	165	190	216	241	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	–
L2 (RTJ)	in	–	–	–	–	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	–
	mm	–	–	–	–	295	333	359	435	562	664	791	841	892	994	1095	1200	1407	–
H (Open)	in	3.38	3.50	4.50	5.50	7.50	8.00	8.75	10.00	14.50	17.50	19.25	21.38	23.38	25.75	28.75	31.00	43.50	–
	mm	85	90	115	140	190	205	222	255	368	445	490	540	595	655	730	785	1105	–
WT (Kg)	BW	5.5	7.5	12	18	24	35	44	70	125	207	310	460	615	945	1105	1495	1695	–
	RF/RTJ	4	6	8	12.5	16	19	26	44	87	147	220	350	452	720	845	1160	1280	–

Dimensions and Weights

CLASS 900

Size	in	2	2 1/2	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
L1 (BW)	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.50	44.50
	mm	368	419	381	457	610	737	838	965	1029	1130
L (RF)	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.5	44.5
	mm	368	419	381	457	610	737	838	965	1029	1130
L2 (RTJ)	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.38	44.88
	mm	371	422	384	460	613	740	841	968	1038	1140
H	in	9.50	9.50	10.00	13.38	15.75	18.12	21.62	24.00	27.00	29.50
	mm	240	240	255	340	400	460	550	610	685	750
WT (Kg)	BW	22	34	38	71	176	485	761	1125	1345	1490
	RF/RTJ	44	55	61	116	255	630	940	1433	1710	1820

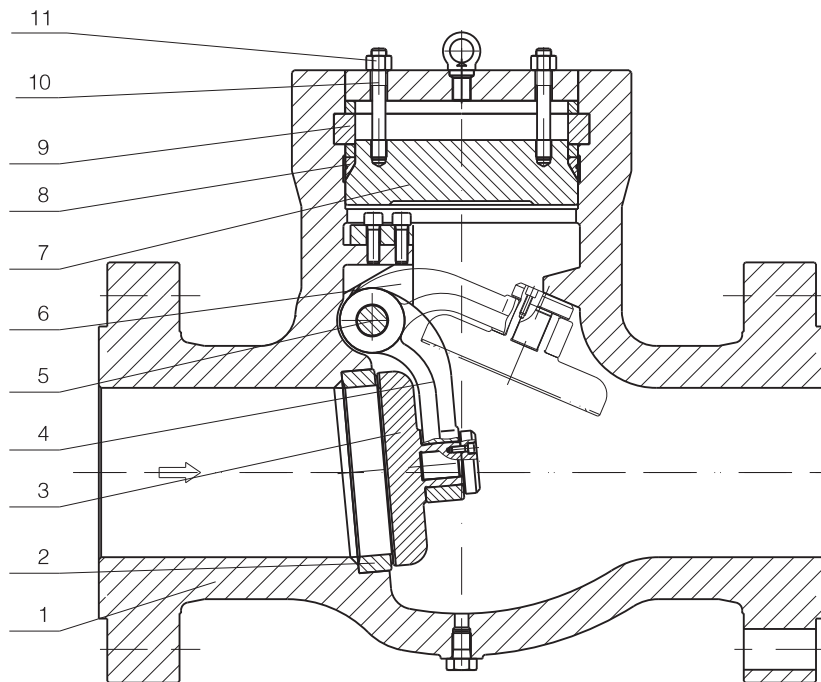
Cast Steel Swing Check Valve (Pressure Seal Cover)

Applicable Standards:

Design and Manufacture :ASME 16.34
 Face to face and End to End: ASME B 16.10
 Flanged ends: ASME B16.5
 Butt welded ends: ASME B16.25
 Test & Inspection: API 598

Main Materials:

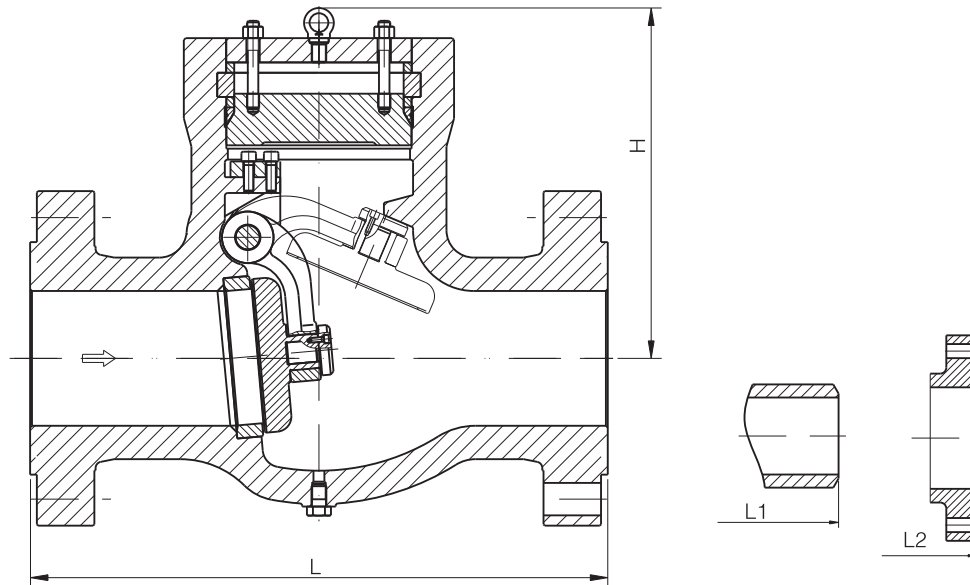
WCB, LCB, WC6, WC9, CF8, CF8M,
 CF3, CF3M, A995 4A, A995 5A, A995 6A,
 Alloy 20, Monel, Inconel



Main Parts Material Sheet

NO.	PART	ASTM Material				
		WCB	LCB ⁽¹⁾	WC6	CF8(M)	CF3(M)
1	BODY	A216 WCB	A352 LCB	A217 WC6+STL	A351 CF8(M)+STL	A351 CF3(M)+STL
2	SEAT	A105+13Cr	A105+13Cr	-	-	-
3	DISC	A216 WCB+13Cr	A352 LCB+13Cr	A217 WC6+STL	A351 CF8(M)+STL	A351 CF3(M)+STL
4	HINGE	A216 WCB	A352 LCB	A217 WC6	A351 CF8(M)	A351 CF3(M)
5	HINGE PIN	A276 304	A276 304	A276 304	A182 F304(F316)	A182 F304L(F316L)
6	FORK	A216 WCB	A350 LF2	A217 WC6	A351 CF8(M)	A351 CF3(M)
7	COVER	A105	A105	A182 F11	A182 F304(F316)	A182 F304L(F316L)
8	PRESSURE SEAL RING	PURE IRON			SS304 / SS316	SS304L / SS316L
9	SEGMENT RING	A182 F6			SS304 / SS316	SS304L / SS316L
10	STUD	A193 B7	A320 L7	A193 B16	A193 B8	A193 B8
11	NUT	A194 2H	A194 4	A194 4	A194 8	A194 8

Cast Steel Swing Check Valve (Pressure Seal Cover)



Dimensions and Weights

CLASS 900

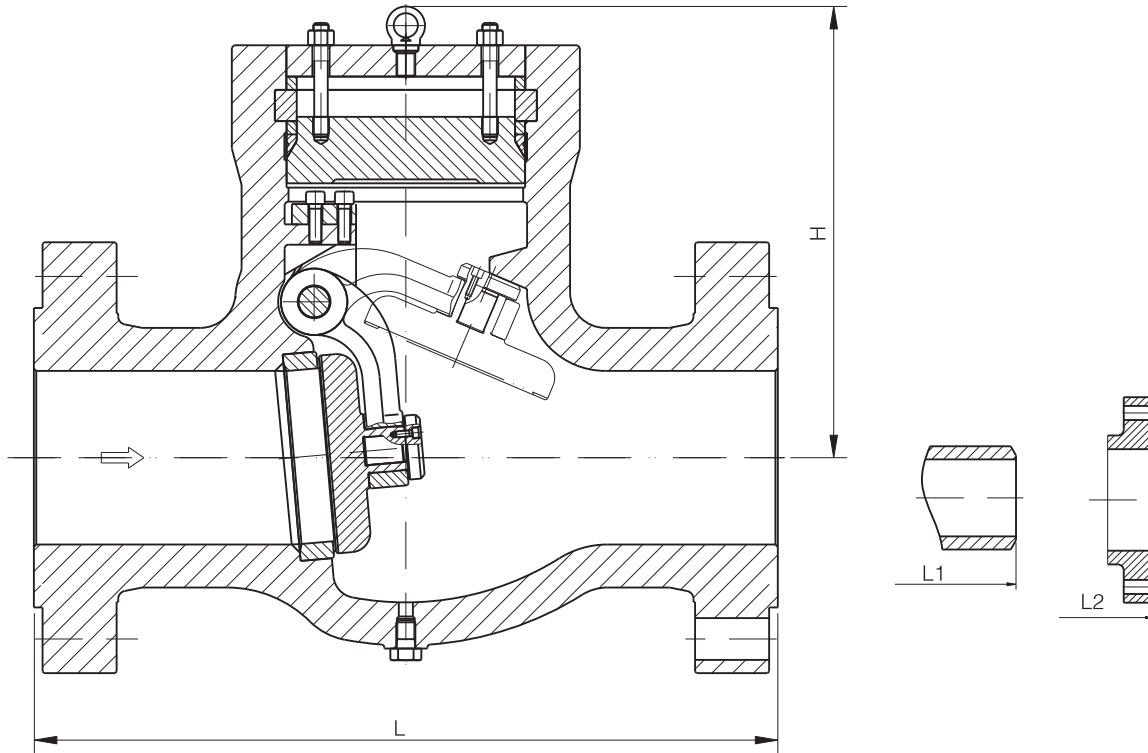
Size	in	2	2 ^{1/2}	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
L1 (BW)	in	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00
	mm	216	254	305	356	508	660	787	914	991	1092
L (RF)	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.5	44.5
	mm	368	419	381	457	610	737	838	965	1029	1130
L2 (RTJ)	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.38	44.88
	mm	371	422	384	460	613	740	841	968	1038	1140
H	in	9.50	9.50	10.00	13.38	15.75	18.12	21.62	24.00	27.00	29.50
	mm	240	240	255	340	400	460	550	610	685	750
WT (Kg)	BW	22	34	38	71	176	485	761	1125	1345	1490
	RF/RTJ	44	55	61	116	255	630	940	1433	1710	1820

Dimensions and Weights

CLASS 1500

Size	in	2	2 ^{1/2}	3	4	6	8	10	12	14
	mm	50	65	80	100	150	200	250	300	350
L1 (BW)	in	8.50	10.00	12.00	16.00	22.00	28.00	34.00	39.00	42.00
	mm	216	254	305	406	559	711	864	991	1067
L (RF)	in	14.50	16.50	18.50	21.50	27.75	32.75	39	44.5	49.5
	mm	368	419	470	546	705	832	991	1130	1257
L2 (RTJ)	in	14.62	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25
	mm	371	422	473	549	711	842	1000	1146	1276
H	in	9.50	9.50	11.88	15.38	18.00	20.62	24.00	27.00	30.00
	mm	240	240	300	390	455	525	610	685	760
WT (Kg)	BW	22	37	45	78	245	530	815	1213	1555
	RF/RTJ	44	61	110	155	378	675	1160	1710	2315

Cast Steel Swing Check Valve (Pressure Seal Cover)

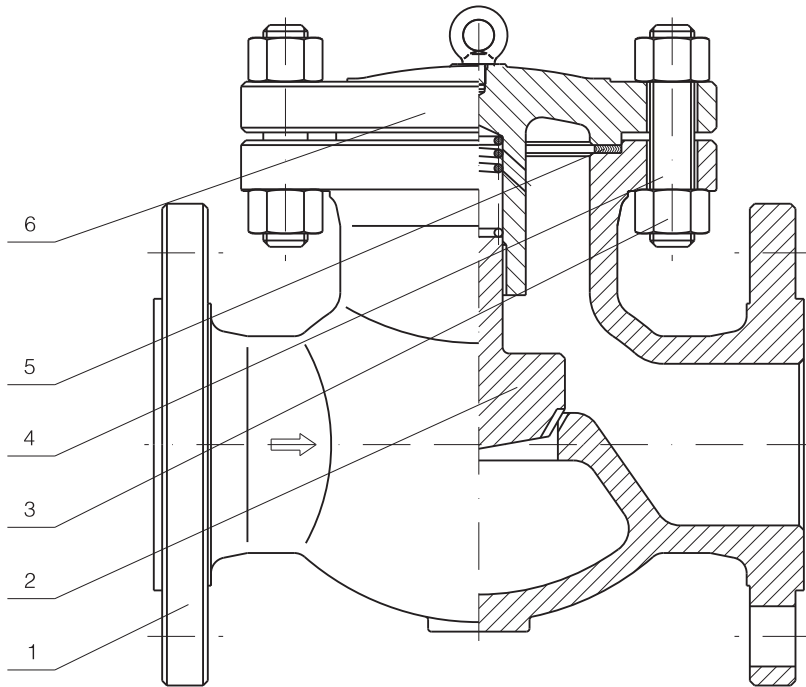


Dimensions and Weights

CLASS 2500

Size	in	2	2 ¹ / ₂	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L1 (BW)	in	11.00	13.00	14.50	18.00	24.00	30.00	36.00	41.00
	mm	279	330	368	457	610	762	914	1041
L (RF)	in	17.75	20.00	22.75	26.50	36.00	40.25	50	56
	mm	451	508	578	673	914	1022	1270	1422
L2 (RTJ)	in	17.88	20.50	23.00	26.88	36.50	40.88	50.88	56.88
	mm	454	514	584	683	927	1038	1292	1445
H	in	10.25	10.25	13.75	16.12	18.88	22.38	25.25	32.00
	mm	260	260	350	410	480	570	640	815
WT (Kg)	BW	55	78	95	182	300	630	825	1580
	RF/RTJ	93	130	170	315	618	1125	1760	2910

Cast Steel Lift Check Valve (Bolt Cover)



Applicable Standards:

Design and Manufacture :BS1868
 Face to face and End to End: ASME B 16.10
 Flanged ends: ASME B16.5
 Butt welded ends: ASME B16.25
 Test & Inspection: API 598

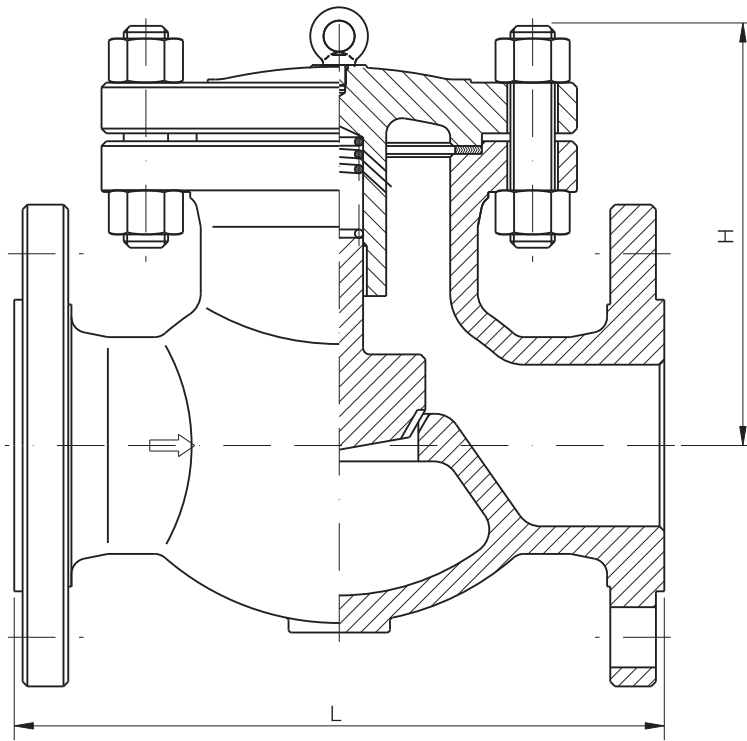
Main Materials:

WCB, LCB, WC6, WC9, CF8, CF8M,
 CF3, CF3M, A995 4A, A995 5A, A995 6A,
 Alloy 20, Monel, Inconel

Main Parts Material Sheet

NO.	PART	ASTM Material				
		WCB	LCB	WC6	CF8(M)	CF3(M)
1	BODY	A216 WCB+13Cr	A352 LCB+13Cr	A217 WC6+STL	A351 CF8(M)+STL	A351 CF3(M)+STL
2	DISC	A216 WCB+13Cr	A352 LCB+13Cr	A217 WC6+STL	A351 CF8(M)+STL	A351 CF3(M)+STL
3	COVER STUD	A193 B7	A320 L7	A193 B16	A193 B8(M)	A193 B8(M)
4	COVER NUT	A194 2H	A194 4	A194 4	A194 8(M)	A194 8(M)
5	GASKET	SS304+GRAPHITE/SS316+GRAPHITE				
6	COVER	A216 WCB	A352 LCB	A217 WC6	A351 CF8(M)	A351 CF3(M)

Cast Steel Lift Check Valve (Bolt Cover)

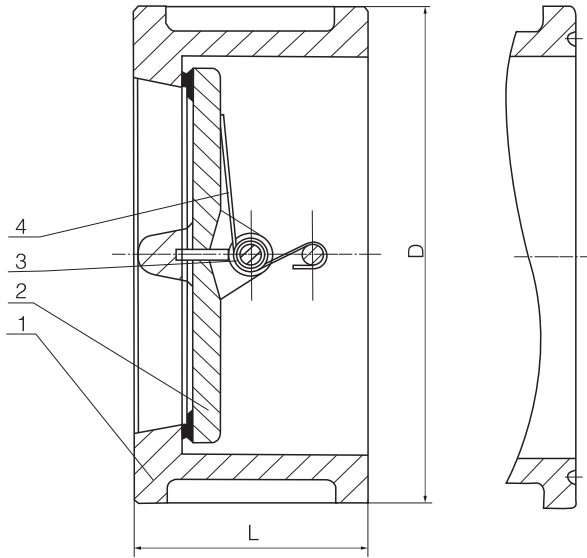


Dimensions and Weights

CLASS 150~900

Pressure	CLASS 150								
Size	mm	50	65	80	100	150	200	250	300
	in	2	2 1/2	3	4	6	8	10	12
L(mm)		203	216	241	292	356	495	622	698
H(mm)		165	175	190	215	265	320	365	415
Weight (Kg)		15	27	21	31	40	68	140	180
Pressure	CLASS 300								
Size	mm	50	65	80	100	150	200	250	300
	in	2	2 1/2	3	4	6	8	10	12
L(mm)		267	292	318	356	325	559	622	711
H(mm)		175	212	242	260	265	412	460	570
Weight (Kg)		17	20	25	37	81	132	187	260
Pressure	CLASS 600								
Size	mm	50	65	80	100	150	200	250	300
	in	2	2 1/2	3	4	6	8	10	12
L(mm)		292	330	356	432	559	660	787	838
H(mm)		120	140	160	200	225	460	570	635
Weight (Kg)		17	22.5	30	42	96	170	340	515
Pressure	CLASS 900								
Size	mm	50	65	80	100	150			
	in	2	2 1/2	3	4	6			
L(mm)		368	419	381	457	610			
H(mm)		250	280	290	335	510			
Weight (Kg)		25	29	50	85	220			

Wafer Type Dual Plate Check Valve



Class 150, 300

Class 600, 900

Technical Specification

Design Standard	API 594
Face to face	API 594
Flange ends	ASME B16.5
Test & inspection	API 598

Notes: the dimensions of end connections can be design as per customers' requirements.

Parts and Material List

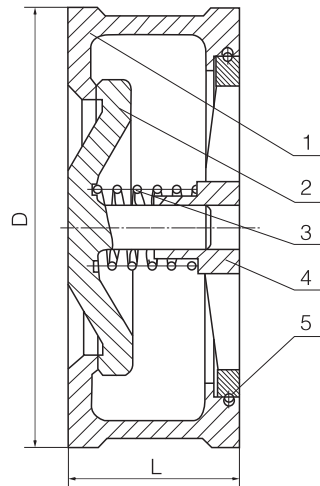
No.	Part	Material
1	Body	ASTM A216-WCB, ASTM A352-LCB ASTM A351-CF8, CF8M, CF8C, CF3, CF3M
2	Disc	ASTM A216-WCB, ASTM A352-LCB ASTM A351-CF8, CF8M, CF8C, CF3, CF3M
3	Pin	ASTM A182-F6a, ASTM A182-F22 ASTM A182-F304, F316, 321, F304L F316L
4	Spring	AISI 9260, AISI 6150 ASTM A182-F304, F316, F321, F304L, F316L

Dimensions and Weights

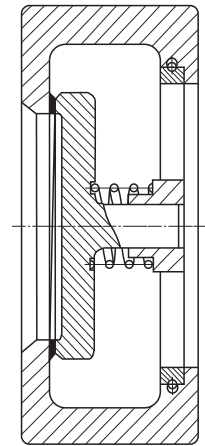
CLASS 150~900

Pressure		CLASS 150																
Size	mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600			
	in	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24			
L(mm)		60	67	73	73	86	98	127	146	181	184	191	203	219	222			
H(mm)		103	122	135	173	196	222	279	339	409	450	514	549	606	717			
Weight(Kg)		2	3.2	4	6	9	12	22	38	54	80	118	210	240	410			
Pressure		CLASS 300																
Size	mm	50	65	80	100	125	150	200	250	300	350	400						
	in	2	2 1/2	3	4	5	6	8	10	12	14	16						
L(mm)		60	67	73	73	86	98	127	146	181	222	232						
H(mm)		110	129	148	180	215	250	307	361	422	485	539						
Weight(Kg)		3.5	5	7	10	18.5	19	33	54	88	128	169						
Pressure		CLASS 600										CLASS 900						
Size	mm	50	65	80	100	125	150	200	250	300	350	400	50	65	80	100	150	200
	in	2	2 1/2	3	4	5	6	8	10	12	14	16	2	2 1/2	3	4	6	8
L(mm)		60	67	73	79	105	136	165	213	229	273	305	70	83	83	102	159	206
H(mm)		110	129	148	192	240	265	319	399	456	489	562	142	164	167	205	288	358
Weight(Kg)		3.5	5	7	12	22.5	35	45	77	110	135	163	6.5	9	14	24	43	56

Wafer Type Dual Plate Check Valve



Class 150/R F



Class 300/R F
Class 600, 900/RTJ

Technical Specification

Design Standard	API 594
Face to face	API 594
Flanged ends	ASME B16.5
Test & inspection	API 598

Note: the dimensions of connection ends can be designed as per customers' requirements.

Parts and Material List

N o.	Part	Material
1	Body	ASTM A216-WCB, ASTM A352-LCB ASTM A351-CF8, CF8M, CF8C, CF3, CF3M
2	Disc	ASTM A216-WCB, ASTM A352-LCB ASTM A351-CF8, CF8M, CF8C, CF3, CF3M
3	Spring	AISI9260, AISI6150 ASTM A182-F304, F316, F321, F304L, F316L
4	Plate	ASTM A216-WCB, ASTM A350-LF2 ASTM A351-CF8, CF8M, CF8C, CF3, CF3M
5	Lock ring	AISI9260, AISI6150 ASTM A182-F304, F316, F321, F304L, F316L

Dimensions and Weights

CLASS 150~900

Pressure	CLASS 150											CLASS 300											
	15	20	25	32	40	50	65	80	100	125	150	15	20	25	32	40	50	65	80	100	125	150	
Size	mm	15	20	25	32	40	50	65	80	100	125	150	15	20	25	32	40	50	65	80	100	125	150
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
L(mm)	16	19	22	31.5	31.5	40	46	50	60	90	106	25	31.5	35.5	40	45	56	63	71	80	110	125	
H(mm)	47	57	66	85	85	103	122	135	173	196	222	53	65	72	81	95	110	129	148	180	215	250	
Weight(Kg)	0.2	0.3	0.45	0.8	0.8	1.2	2.3	3.0	7.0	12	15	0.23	0.36	0.52	0.75	1.1	1.95	2.9	5.5	9.0	15	20	
Pressure	CLASS 600											CLASS 900											
	15	20	25	32	40	50	65	80	100	125	150	15	20	25	32	40	50	65	80	100	125	150	
Size	mm	15	20	25	32	40	50	65	80	100	125	150	15	20	25	32	40	50	65	80	100	125	150
	in	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
L(mm)	25	31.5	35.5	40	45	56	63	71	80	110	125	25	31.5	35.5	40	45	56	63	71	80	110	125	
H(mm)	53	65	72	81	95	110	129	148	192	240	265	63	69	78	88	98	142	164	167	205	247	288	
Weight(Kg)	0.25	0.38	0.55	0.8	1.2	2.0	2.0	6.0	10	17	22	0.3	0.4	0.6	1.0	1.5	2.5	4.0	8.0	13	20	25	

FBV

Forged Steel Gate/Globe/Check valves

<http://www.fbvalve.com>



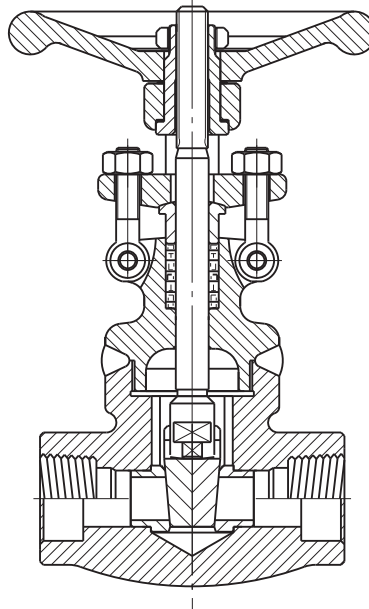
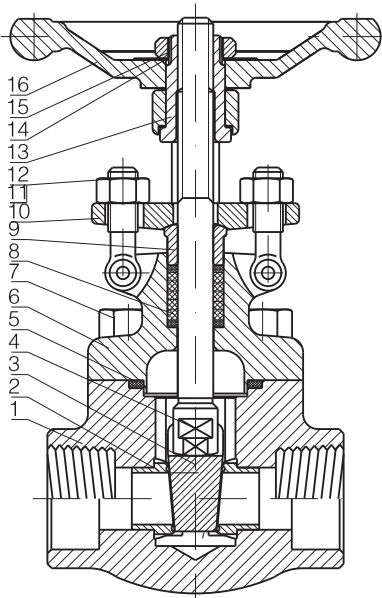
FBV valves are available in three bonnet designs. The first design is the Bolted Bonnet, with male–female joint, spiral wound gasket, made in SS304/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength, welded joint is available, The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

Forged Steel Gate/Globe/Check Valves

Construction Details

- Full bore or conventional port
- Two piece self-aligning packing gland
- Bolted bonnet & spiral wound gasket seal bonnet
- Bolted bonnet with spiral-wound gasket, threaded and
- Seal welded bonnet or threaded and pressure seal bonnet
- Integral backseat
- Socket weld ends to ASME B16.11
- Screwed ends (NPT) to ANSI/ASME B1.20.1

Forged Steel Gate Valve

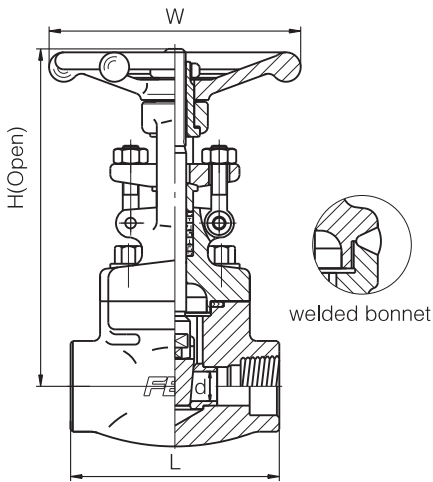


Applicable Standards

1. Design and Manufacture
API 602, BS5352, ASME B16.34
2. Connection end
Socket Weld End(SW): ASME B16.11
Threaded End(NPT): ASME B1.20.1
Butt-Weld End(BW): ASME B16.25
Flange End(RF/RTJ): ASME B16.5
3. Test & Inspection
API 602, API 598
4. Design Description
Bolted Bonnet(BB),
Welded Bonnet(WB),
Outside Screw and Yoke(OS&Y)
5. Main Materials:
A105, LF2, F5, F11, F22,
304(L), 316(L), F347, F321,
F51, Alloy 20, Monel

No.	PART	ASTM Material					
		A105	LF2	F11	F304(L)	F316(L)	F51
1	BODY	A105	LF2	F11	F304(L)	F316(L)	F51
2	SEAT	410	410	410+STL	304(L)	316(L)	F51
3	GATE	F6a	F6a	F6a+STL	F304(L)	F316(L)	F51
4	STEM	410	410	410	304(L)	316(L)	F51
5	GASKET	304 + Graphite			304+Graphite	316(L)+Graphite	316(L)+Graphite
6	BONNET	A105	LF2	F11	F304(L)	F316(L)	F51
7	BOLT	B7	L7	B16	B8(M)	B8(M)	B8M
8	PACKING	Flexible Graphite					
9	GLAND	A182 F6	LF2	F11	F304	F304	F304
10	GLAND FLANGE	A105	LF2	F11	F304	F304	F304
11	NUT	A194 2H			8		
12	EYEBOLT	A193 B7			B8		
13	STEM NUT	A276 410					
14	NAMEPLATE	AL					
15	LOCK NUT	AISI 1035					
16	HANDWHEEL	ASTM A197					

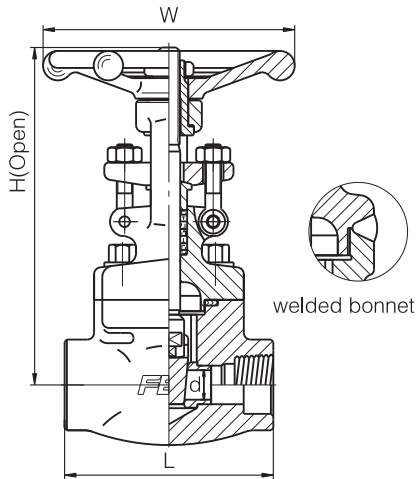
FBV Valve / Forged Steel Gate Valve



CL800

Bolted Bonnet/Welded Bonnet, Full Port/Reduced Port, Outside Screw and Yoke (OS&Y), Threaded, Butt Weld, Socket Weld. Design: API 602

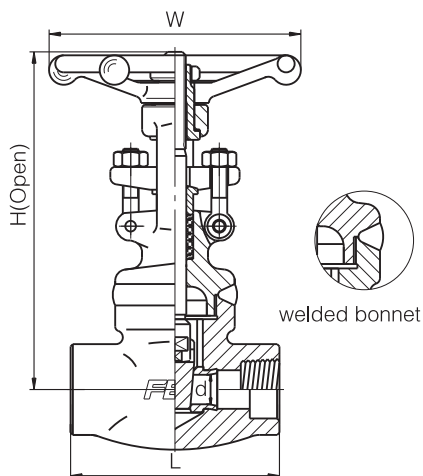
Size (NPS)	R.P	1/2	3/4	1	1.1/4	1.1/2	2	2.1/2
	F.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	L	79	92	111	120	120	140	178
Handwheel Diameter	W	100	100	125	160	160	180	200
Height	H	161	163	196	223	251	290	333
Flow Port Diameter	d	10.3	13.5	18	23	29	36	45
Weight	B.B	2.22	2.39	4.24	5.7	7.05	10.9	16.8
	W.B	1.9	2.1	3.2	6.9	6.9	10.4	15.8



CL900~1500

Bolted Bonnet/Welded Bonnet, Full Port/Reduced Port, Outside Screw and Yoke (OS&Y), Threaded, Butt Weld, Socket Weld. Design: API 602

Size (NPS)	R.P	1/2	3/4	1	1.1/4	1.1/2	2	2.1/2
	F.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	L	92	111	120	120	140	178	-
Handwheel Diameter	W	100	125	160	160	180	200	-
Height	H	191	191	219	243	296	316	-
Flow Port Diameter	d	10.5	13.5	18	23	29	36	-
Weight	B.B	2.3	4.4	6.8	7.6	11.6	15	-
	W.B	2.1	3.5	6.9	6.9	10.4	13.8	-

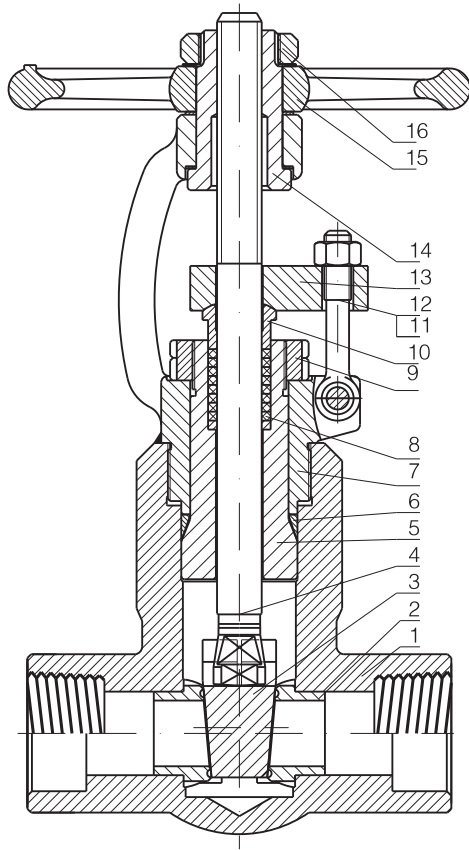


CL2500

Welded Bonnet, Full Port/Reduced Port, Outside Screw and Yoke (OS&Y), Threaded, Butt Weld, Socket Weld. Design: ASME B16.34

Size (NPS)	R.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	L	111	120	120	120	140	-	-
Handwheel Diameter	W	125	125	125	125	250	-	-
Height	H	215	218	220	238	271	-	-
Flow Port Diameter	d	8	10.3	13.5	18	23	-	-
Weight	W.B	-	-	-	-	-	-	-

Forged Steel Pressure Seal Gate Valve

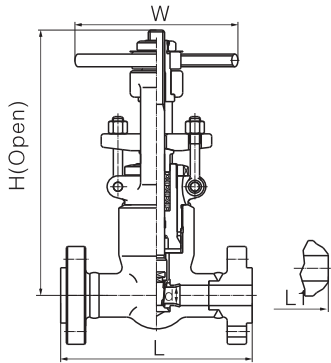


Applicable Standards

1. Design and manufacture
API 602, BS5352, ASME B16.34
2. Connection end
Socket Weld End(SW): ASME B16.11
Threaded End(NPT): ASME B1.20.1
Butt Weld End(BW): ASME B16.25
Flange End(RF/RTJ): ASME B16.5
3. Test & Inspection
API 602, API 598
4. Design Description
Bolted Bonnet(BB),
Welded Bonnet(WB),
Outside Screw and Yoke(OS&Y)
5. Main Materials:
A105, LF2, F5, F11, F22,
304(L), 316(L), F347, F321,
F51, Alloy 20, Monel

No.	PART	ASTM Material					
		A105	LF2	F11	F304(L)	F316(L)	F51
1	BODY	A105	LF2	F11	F304(L)	F316(L)	F51
2	SEAT	410	410	410+STL	304(L)+STL	316(L)+STL	F51
3	GATE	F6a	F6a	F6a+STL	F304(L)+STL	F316(L)+STL	F51
4	STEM	410	410	410	304(L)	316(L)	F51
5	BONNET	A105	LF2	F11	F304(L)	F316(L)	F51
6	PRESSURE SEAL RING	304 + Graphite			304+Graphite	316(L)+Graphite	316(L)+Graphite
7	YOKE	A105	LF2	B16	F304(L)	F316(L)	F51
8	PACKING	Graphite/SS304+Graphite				Graphite	
9	NUT	CARBON STEEL				F304	
10	GLAND	A182 F6	LF2	F11	F304		
11	NUT	A194 2H				A194 8	
12	EYEBOLT	A193 B7				A193 B8	
13	GLAND FLANGE	A105	LF2	F11	F304		
14	STEM NUT	A276 410					
15	LOCK NUT	AISI 1035					
16	HANDWHEEL	ASTM A197					

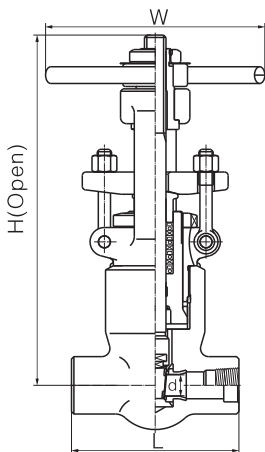
FBV Valve / Forged Steel Gate Valve



CL2500

Pressure Seal Bonnet , Full Port, Outside Screw and Yoke(OS & Y)
Flange-welded or Butt-Welded ends; Design to ASME B16.34

Size (NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF),L1(BW)	-	-	264	273	308	-	384	451
	L(RTJ)	-	-	264	273	308	-	387	454
Handwheel diameter	W	-	-	200	200	200	-	280	300
Height	H	-	-	325	325	327	-	478	540
Height (angle dimension)	d	-	-	13.5	13.5	19	-	30	36.5
Weight(Kg)		-	-	4.6	6.8	7.6	-	15	21.9



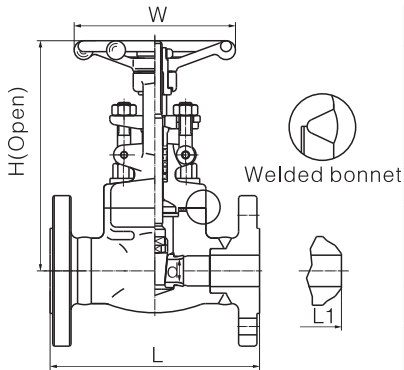
CL1500-CL2500

Pressure Seal Bonnet , Full Port, Outside Screw and Yoke(OS & Y)
Socket Welded ends, Design to ASME B16.34

Size (NPS)	F.P		3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face length	L	CL900~1500	140	140	140	140	178	178	216
		CL2500	186	186	186	186	232	232	279
Handwheel diameter	W	CL900~1500	200	200	200	200	280	280	300
		CL2500	200	200	200	200	280	280	300
Height	H	CL900~1500	318	318	318	322	467	468	540
		CL2500	325	325	325	327	467	468	540
Flow port diameter	d	CL900~1500	14	14	14	19	25	30	36.5
		CL2500	14	14	14	19	25	30	36.5
Weight(Kg)		CL900~1500	11.5	11.5	10.8	10.5	19.6	21.0	55.4
		CL2500	12.3	12.3	11.6	10.8	26.0	28.4	60.0

FBV Valve / Forged Steel Gate Valve

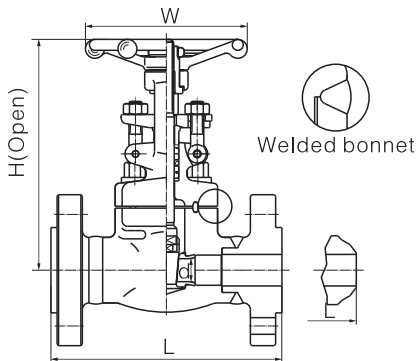
CL150-300-600 Bolted Bonnet, Reduced Port, Outside Screw and Yoke(OS & Y) Flange-welded or Socket-welded ends; Design to API602:BS5352



Size (NPS)			1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	
Face to face	CL150	L (RF) L1 (BW)	-	-	108	117	127	140	165	178	190	
	CL300		-	-	140	152	165	178	190	216	241	
	CL600		-	-	165	190	216	229	241	292	330	
Handwheel diameter			-	-	100	100	125	160	160	180	200	
Height	CL150	W	-	-	176	184	217	226	250	290	357	
	CL300,CL600		-	-	161	163	196	226	250	290	357	
Height (angle dimension)			H	-	10	13.5	18	24	29	36.5	45	
Weight (Kg)	CL150	RF	d	-	-	3.4	3.98	6.12	7.2	10.4	15.5	24.5
		BW		-	-	2.8	3.3	5.4	7.1	8.2	12.5	20
	CL300	RF		-	-	3.77	4.89	7.23	9.6	12.64	18	26.2
		BW		-	-	3.5	4.4	6.8	8.1	9.2	15.4	22
	CL600	RF		-	-	4.2	5.8	8.8	12.1	15.6	19.5	32
		BW		-	-	4.5	5.1	8.2	10.5	12.4	20.1	28

If you want to order integral flange, please contact sale department

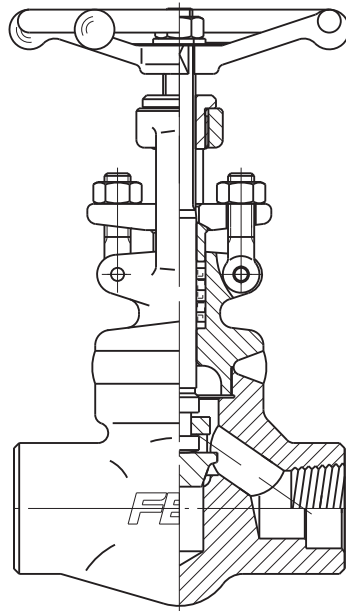
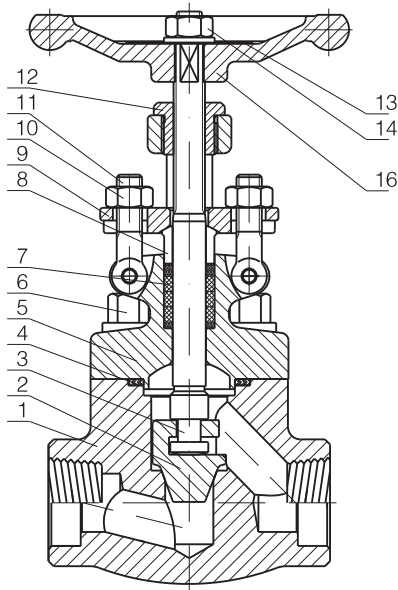
CL900-CL1500 Welded Bonnet, Full Port, Outside Screw and Yoke(OS & Y) Flange-welded or Socket-welded ends; Design to API 602,BS 5352



Size (NPS)		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Face to face	L(RF),L1(BW)	-	-	216	229	254	279	305	368
	L(RTJ)	-	-	216	229	254	279	305	371
Handwheel diameter	W	-	-	125	125	160	180	200	220
Height	H	-	-	191	192	219	257	296	316
Height (angle dimension)	d	-	-	13.5	18	24	29	36.5	45
Weight(Kg)		-	-	7.2	11.5	15.6	16.2	22.6	28.2

If you want to order integral flange, please contact sale department

Forged Steel Globe Valve

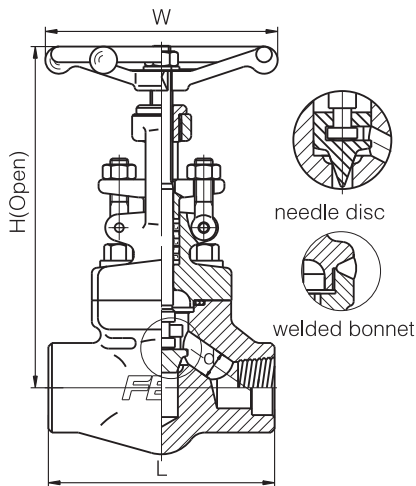


Applicable Standards

1. Design and manufacture
API 602, BS5352, ASME B16.34
2. Connection end
Socket Weld End(SW):ASME B16.11
Threaded End(NPT):ASME B1.20.1
Butt-Weld End(BW):ASME B16.25
Flange End(RF/RTJ):ASME B16.5
3. Test & Inspection
API 602, API 598
4. Design Description
Bolted Bonnet(BB),
Welded Bonnet(WB),
Outside Screw and Yoke(OS&Y)
5. Main Materials:
A105, LF2, F5, F11, F22,
304(L), 316(L), F347, F321,
F51, Alloy 20, Monel

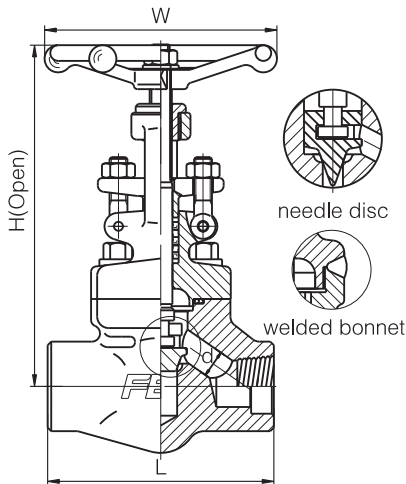
No.	PART	ASTM Material					
		A105	LF2	F11	F304(L)	F316(L)	F51
1	BODY	A105+SS304	LF2	F11	F304(L)	F316(L)	F51
2	DISC	F6a	F6a	F6a+STL	F304(L)	F316(L)	F51
3	STEM	410	410	410	304(L)	316(L)	F51
4	GASKET	A105	LF2	F11	304+Graphite	316(L)+Graphite	316(L)+Graphite
5	BONNET	304 + Graphite		B16	F304(L)	F316(L)	F51
6	BOLT	B7	L7	F11	B8(M)	B8(M)	B8M
7	PACKING	Flexible Graphite					
8	GLAND	A182 F6	LF2	F11	F304	F304	F304
9	GLAND FLANGE	A105	LF2		F304	F304	F304
10	NUT	A194 2H			8		
11	EYEBOLT	A193 B7			B8		
12	STEM NUT	A276 410					
13	LOCK NUT	AISI 1035					
14	NAMEPLATE	AL					
15	HANDWHEEL	ASTM A197					

FBV Valve / Forged Steel Globe Valve



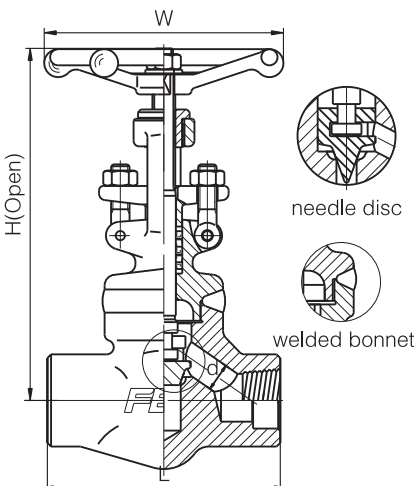
CL800 Bolted Bonnet/Welded Bonnet, Full Port/Reduced Port, Outside Screw and Yoke (OS&Y), Threaded, Butt Weld, Socket Weld. Design: API 602

Size (NPS)	R.P	1/2	3/4	1	1.1/4	1.1/2	2	2.1/2	
	F.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2	
Face To Face	L	79	92	111	120	152	172	220	
Handwheel Diameter	W	100	100	125	160	160	180	200	
Height	H	164	164	203	224	260	300	355	
Flow Port Diameter	d	10.5	13.5	17	22	28	34	43	
Weight	B.B		2.28	2.37	4.3	5.75	7.8	12.5	17.5
	W.B		1.7	1.9	3.3	5.2	6.8	10.6	13.8



CL900~1500 Bolted Bonnet/Welded Bonnet, Full Port/Reduced Port, Outside Screw and Yoke (OS&Y), Threaded, Butt Weld, Socket Weld. Design: API 602

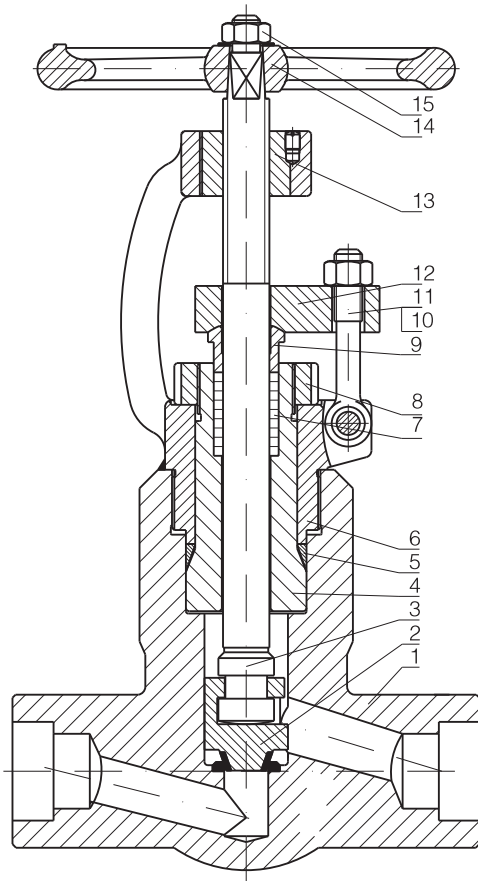
Size (NPS)	R.P	1/2	3/4	1	1.1/4	1.1/2	2	2.1/2	
	F.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2	
Face To Face	L	92	111	120	152	172	220	-	
Handwheel Diameter	W	100	125	160	160	180	240	-	
Height	H	171	207	240	258	330	370	-	
Flow Port Diameter	d	7	10.5	13.5	22	28	34	-	
Weight	B.B		2.3	3.7	6.8	7.6	11.6	21.9	-
	W.B		2.0	3.4	6.0	5.6	10.3	18.0	-



CL2500 Welded Bonnet, Full Port/Reduced Port, Outside Screw and Yoke (OS&Y), Threaded, Butt Weld, Socket Weld. Design: ASME B16.34

Size (NPS)	R.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	L	111	120	152	172	220	-	-
Handwheel Diameter	W	125	160	160	180	240	-	-
Height	H	207	240	258	330	370	-	-
Flow Port Diameter	d	8	10.5	13.5	22	28	-	-
Weight	W.B		3.4	6.0	5.6	10.3	18.0	-

Forged Steel Pressure Seal Globe Valve

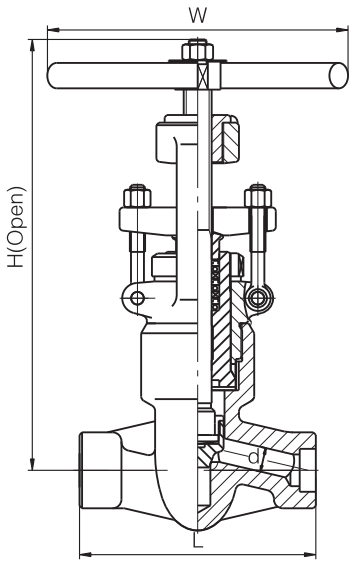


Applicable Standards

1. Design and Manufacture
API 602, BS5352, ASME B16.34
2. Connection end
Socket Weld End(SW):ASME B16.11
Threaded End(NPT):ASME B1.20.1
Butt-Weld End(BW):ASME B16.25
Flange End(RF/RTJ):ASME B16.5
3. Test & Inspection
API 602, API 598
4. Design Description
Bolted Bonnet(BB),
Welded Bonnet(WB),
Outside Screw and Yoke(OS&Y)
5. Main Materials:
A105, LF2, F5, F11, F22,
304(L), 316(L), F347, F321,
F51, Alloy 20, Monel

No.	PART	ASTM Material					
		A105	LF2	F11	F304(L)	F316(L)	F51
1	BODY	A105/STL	LF2/STL	F11+STL	F304(L)	F316(L)	F51
2	DISC	F6a	F6a	F6a+STL	F304(L)+STL	F316(L)+STL	F51
3	STEM	410	410	410	304(L)	316(L)	F51
4	BONNET	A105	LF2	F11	F304(L)	F316(L)	F51
5	PRESSURE SEAL RING	304 + Graphite			304+Graphite	316(L)+Graphite	316(L)+Graphite
6	YOKE	A105	L7	F11	F304(L)	F316(L)	F51
7	PACKING	Graphite/SS304+Graphite			Graphite		
8	NUT	CARBON STEEL			F304		
9	GLAND	A182 F6	LF2	F11	F304		
10	NUT	A194 2H		4	A194 8		
11	EYEBOLT	A193 B7		B16	A193 B8		
12	GLAND FLANGE	A105		F11	F304		
13	STEM NUT	A276 410					
14	LOCK NUT	AISI 1035					
15	HANDWHEEL	ASTM A197					

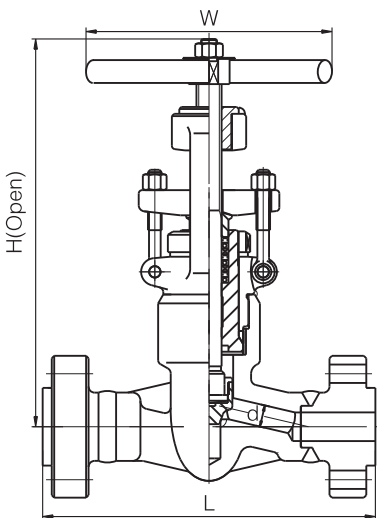
FBV Valve / Forged Steel Globe Valve



CL900~1500 CL2500

Pressure Seal Bonnet, Reduced Port, Outside Screw and Yoke (OS&Y),
Threaded, Butt Weld, Socket Weld. Design: ASME B16.34

Size (NPS)	R.P		1/2	3/4	1	1.1/4	1.1/2	2
Face to Face	L	CL900~CL1500	140	140	140	178	178	216
		CL2500	186	186	186	232	232	279
Handwheel Diameter	W	CL900~CL1500	200	200	200	280	280	300
		CL2500						
Height	H	CL900~CL1500	320	320	320	440	440	490
		CL2500	375	378	380	490	490	540
Flow Port Diameter		d	10.5	13.5	18	22	28	34
Weight		CL900~CL1500	11.5	10.8	10.5	19.6	21.0	55.4
		CL2500	12.3	11.6	10.8	26.0	28.4	50

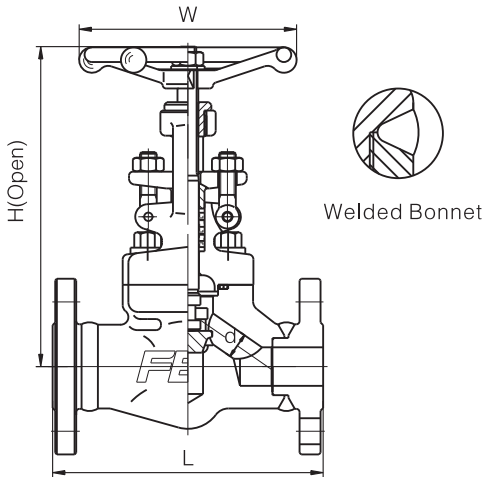


CL2500

Pressure Seal Bonnet, Reduced Port, Outside Screw and Yoke (OS&Y),
RF/RTJ Flange End. Design: ASME B16.34

Size (NPS)	R.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face to Face	L (RJ)	-	264	273	308	349	384	451
Handwheel Diameter	W	-	200	200	280	280	280	300
Height	H	-	320	320	320	440	440	490
Flow Port Diameter		-	10.5	13.5	18	22	28	34
Weight		-	21.5	24.7	30.4	48.1	58.1	90

FBV Valve / Forged Steel Globe Valve

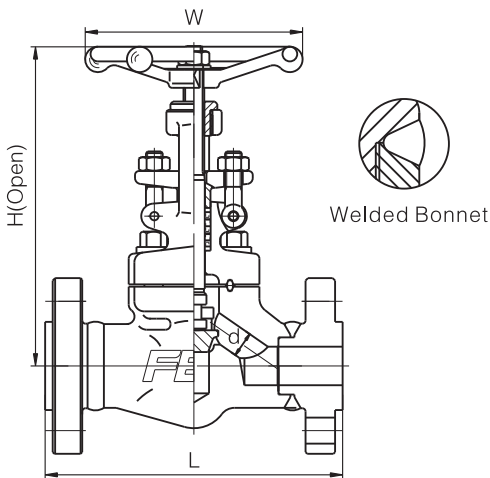


CL150-300-600

Bolted Bonnet/Welded Bonnet, Reduced Port, Outside Screw and Yoke (OS&Y), RF/RTJ Flange End. Design: API 602

Size (NPS)		R.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face to Face (mm)	CL150	L (RF)	-	108	117	127	140	165	203
	CL300		-	152	178	203	216	229	267
	CL600		-	165	190	216	229	241	292
Handwheel Diameter		W	-	100	100	125	160	160	180
Height	CL150	H	-	180	184	217	224	260	300
	CL300/600		-	164	164	203	224	260	300
Flow Port Diameter		d	-	9	13	17.5	23	30	35
Weight	CL150	RF	-	3.45	4.00	6.19	9.6	10.5	17
		BW	-	2.3	3.6	7.8	8.2	12.0	15.0
	CL300	RF	-	3.8	5.1	7.2	12	13.5	19.7
		BW	-	2.8	4.0	8.5	9.2	12.6	16.8
	CL600	RF	-	5.6	7.8	12.5	17	23.5	38.8
		BW	-	3.4	4.7	9.2	10.5	13.3	18.9

If you want to order the integral flange, please contact sale department



CL900~1500

Bolted Bonnet/Welded Bonnet, Reduced Port, Outside Screw and Yoke (OS&Y), RF/RTJ Flange End. Design: API 602

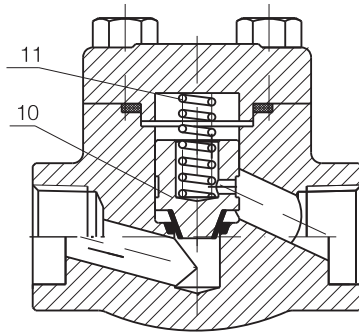
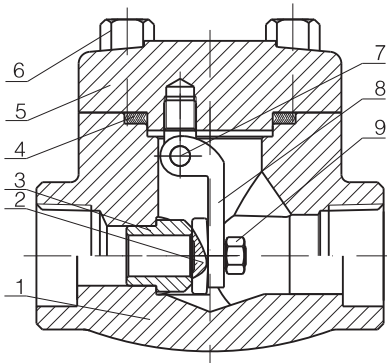
Size (NPS)		R.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face to Face		L (RF)	-	216	229	254	279	305	368
Handwheel Diameter		W	-	125	125	160	160	180	200
Height		H	-	207	207	230	160	300	355
Flow Port Diameter		d	-	12	15	20	28	32	40
Weight			-	11	13.2	17.4	19	24.5	31

If you want to order the integral flange, please contact sale department

Forged Steel Check Valve



welded bonnet

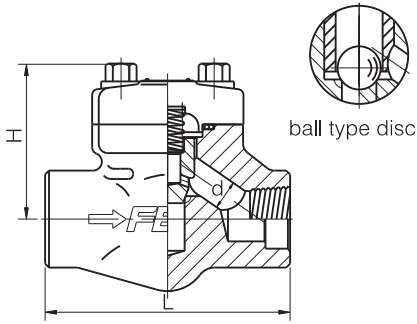


Applicable Standards

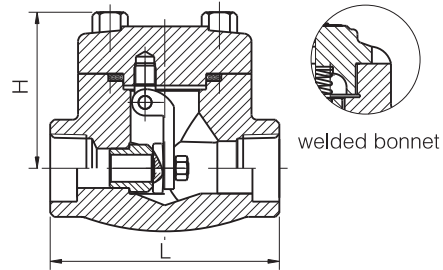
1. Design and Manufacture
API 602, BS5352, ASME B16.34
2. Connection end
Socket Weld End(SW):ASME B16.11
Threaded End(NPT):ASME B1.20.1
Butt-Weld End(BW):ASME B16.25
Flange End(RF/RTJ):ASME B16.5
3. Test & Inspection
API 602, API 598
4. Design Description
Bolted Bonnet(BB),
Welded Bonnet(WB),
5. Main Materials:
A105, LF2, F5, F11, F22,
304(L), 316(L), F347, F321,
F51, Alloy 20, Monel

No.	PART	ASTM Material					
		A105	LF2	F11	F304(L)	F316(L)	F51
1	BODY	A105	LF2	F11	F304(L)	F316(L)	F51
2	DISC	F6a	F6a	F6a+STL	F304(L)	F316(L)	F51
3	SEAT	410	410	410+STL	304(L)	316(L)	F51
4	GASKET	304 + Graphite			304+Graphite	316(L)+Graphite	316(L)+Graphite
5	BONNET	A105	LF2	F11	F304(L)	F316(L)	F51
6	BOLT	B7	L7	B16	B8(M)	B8(M)	B8M
7	PIN	410			304(L)	316(L)	F51
8	HINGE	304			304(L)	316(L)	F51
9	NUT	A194 2H			8	8M	8M
10	SPRING	Ss316					

FBV Valve / Forged Steel Check Valve



ball type disc

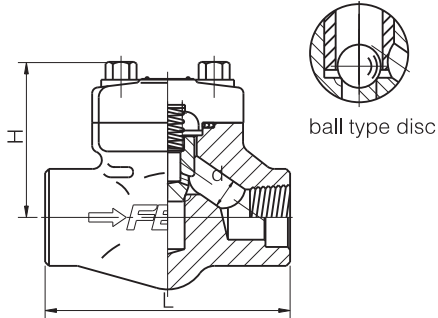


welded bonnet

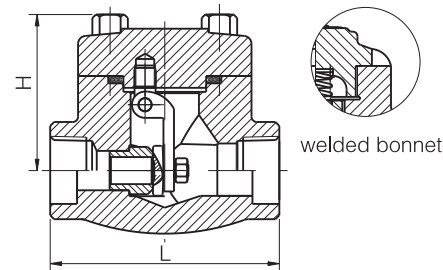
CL800

Bolted Bonnet/Welded Bonnet, Full Port /Reduced Port, Outside Screw and Yoke (OS&Y), Threaded, Butt Weld, Socket Weld. Design: API 602

Size (NPS)	R.P		1/2	3/4	1	1.1/4	1.1/2	2	
	F.P		3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	L	Lift type	79	92	111	120	152	172	220
		Swing type	79	92	111	120	120	140	178
Height	H	Lift type	61	61	78	84	103	118	132
		Swing type	61	61	78	84	101	120	133
Flow Port Diameter	d	Lift type	10.5	13.5	17	22	28	34	43
		Swing type	10.3	13.5	18	23	29	36	45
Weight		Lift type	1.5	1.7	3.3	4.2	6.3	10.5	12.5
		Swing type	1.5	1.7	3.3	4.2	5.0	8.5	10.9



ball type disc



welded bonnet

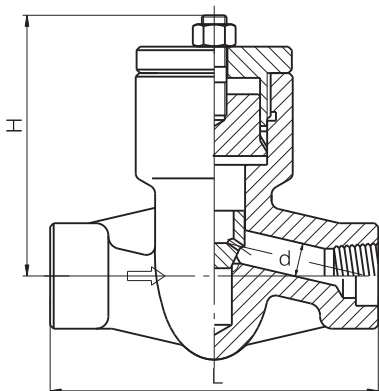
CL900~1500

Pressure Seal Bonnet, Full Port /Reduced Port, Outside Screw and Yoke (OS&Y), Threaded, Butt Weld, Socket Weld. Design: ASME B16.34

Size (NPS)	R.P		1/2	3/4	1	1.1/4	1.1/2	2
	F.P		3/8	1/2	3/4	1	1.1/4	1.1/2
Face To Face	L	Lift type	92	111	120	152	172	220
		Swing type	92	111	120	120	140	178
Height	H	Lift type	78	78	84	103	118	132
		Swing type	78	78	84	101	120	133
Flow Port Diameter	d	Lift type	10.5	13.5	17	22	28	34
		Swing type	10.3	13.5	18	23	29	36
Weight		Lift type	3.4	3.3	4.2	6.3	10.5	12.5
		Swing type	3.4	3.3	4.2	5.0	8.5	10.9

CL900~1500 CL2500

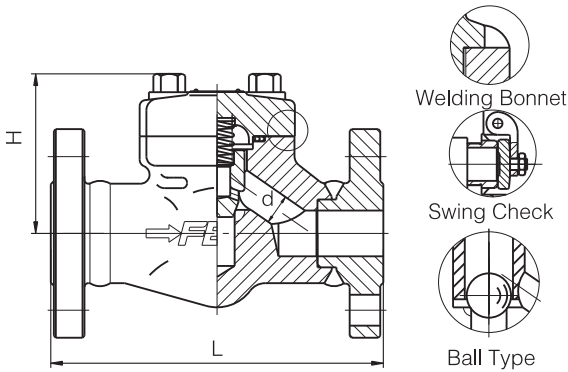
Pressure Seal Bonnet, Reduce Port, Outside Screw and Yoke (OS&Y), Threaded, Butt-Weld, Socket Weld, Design: ASME B16.34



Size (NPS)	R.P		1/2	3/4	1	1.1/4	1.1/2	2
Face to Face	L	CL900~CL1500	140	140	140	178	178	216
		CL2500	186	186	186	232	232	279
Height	H	CL900~CL1500	117	117	117	152	152	195
		CL2500						
Flow Port Diameter	d		10.5	13.5	18	22	28	34
Weight	CL900~CL1500		7.5	8.5	10	15	18.1	20.3
	CL2500		10	11.5	15	23	26.4	39

FBV Valve / Forged Steel Check Valve

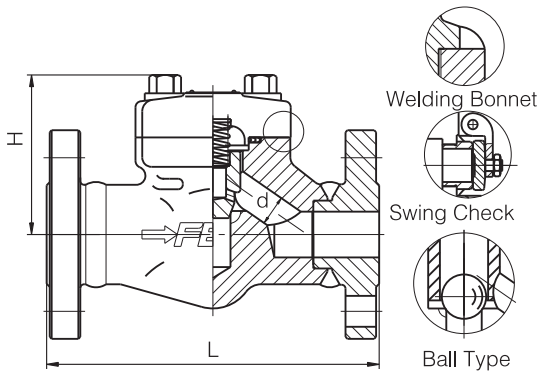
CL150-300-600 Bolt Bonnet/Weld Bonnet, Reduce Port, Outside Screw RF/RTJ Flange End, Design: API 602



Size (NPS)		R.P	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	CL150	L (RF)	108	118	127	140	165	203
	CL300		153	178	203	216	229	267
	CL600		165	191	216	229	241	292
Height	CL150	H	77	81	93	95	103	118
	CL300/600		61	78	84	101	120	133
Flow Port Diameter (d)	Lift type		10.5	13.5	17	22	28	34
	Swing type		10.3	13.5	18	23	29	36
Weight	CL150	Lift type	3.6	4.6	8.5	9.2	12.5	14.8
		Swing type						
	CL300	Lift type	3.7	4.8	8.8	9.6	13.7	17.8
		Swing type						
	CL600	Lift type	4.0	5.8	9.5	10.4	15.6	24.5
		Swing type						

If you want to order the one piece body, please contact sale department

CL900~1500 RF/RTJ Flange End, Design: API 602

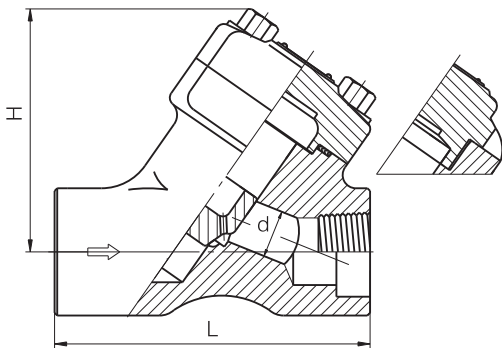


Size (NPS)		R.P	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	L	(RF)	216	229	254	279	305	368
		(RTJ)	216	229	254	279	305	371
Height	H		81	93	95	101	118	130
Flow Port Diameter	d	Lift type	10.5	13.5	17	22	28	34
		Swing type	10.3	13.5	18	23	29	36
Weight(CL1500)			5.2	6.8	10.5	14.5	18	24

NOTE:If you want to order the one piece body, please contact sale department.

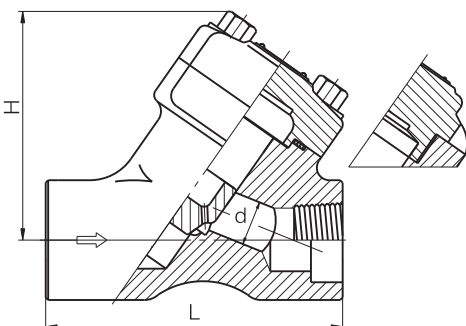
CL900 and CL1500 have the same face to face dimension.

CL800 Bolted bonnet/Welded bonnet, full port/reduce port, outside screw Threaded, butt-weld,socket weld, Design: API 602

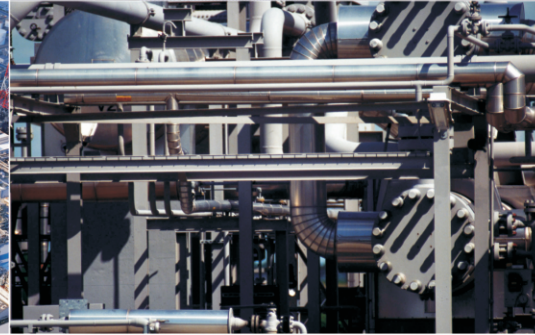


Size (NPS)	R.P	1/2	3/4	1	1.1/4	1.1/2	2	2.1/2
	F.P	3/8	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	L	98	98	111	140	140	155	170
Height	H	70	70	100	110	120	120	150
Flow Port Diameter	d	10	13	17.5	23	30	35	46
Weight		2.2	2.1	4.2	9	8.9	10	18.6

CL900~1500 Bolted Bonnet/Welded Bonnet, Full Port, Outside Screw and Yoke(OS&Y) Threaded, Butt-Weld,Socket Weld, Design: API 602



Size (NPS)	F.P	1/2	3/4	1	1.1/4	1.1/2	2
Face To Face	L	111	111	140	140	155	170
Height	H	70	100	110	120	120	150
Flow Port Diameter	d	12	15	20	28	32	40
Weight		4.2	9	8.9	10	18.6	20



[Http://www.fbvalve.com](http://www.fbvalve.com)



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