

**FBK[®]**

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www.fbkvalve.com
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FBK[®]

Cast & Forged Steel Valves

Your requirement is our responsibility
FEIBIKE will always welcome you to visit
us to realize our mutual benefits.



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About FEIBIKE

FBK VALVE as a professional manufacturer and supplier specialized in valve manufacturing, including gate, check, globe and ball valve in accordance with API, DIN, BS and JIS with various materials. Our products have been sold worldwide include USA, European countries, South American, South Asia, Middle East and Africa.

FBK VALVE always places the product quality and customers' needs on the utmost position and strives to better serve our valued customers. We work to bring interests both to our customers and ourselves. We respect and treasure employees' hard work and share with them the value created by the whole team. We conform to the latest standards and emphasize on managerial, technical and technological innovation. We are looking forward to working with more customers worldwide and create more value together. Our vividly decorated catalogs as well as extensively detailed website enable interested customers to instantly find their target. Besides, we provide value-added services to meet the satisfaction of our customers after they purchase our products.

FBK VALVE today has over 17,333 square meters manufacturing facilities and over 174 employees. Through its conviction to provide only the finest quality products and services to match the need of customers, FBK VALVE has now established itself as a serious player in valve business. The company has expanded its scope in terms of corporate culture as well as technical expertise. With an extensive network of sales, service and distribution in worldwide, we can offer in time delivery of various needs for customers. FBK VALVE can respond to customers' requests faster and more efficiently ever and become one of your best partners for your needs.





Standardization Workshop

Superior quality is originated from advanced technology and equipment in line with international standard. Excellent modern digital fabrication equipment and unique process ensure our valve products. FEIBIKE are committed to quality and individual design to achieve the requirements of industrial modernization and pursue further progress.



Quality Control



UT Inspection



Physical Analysis



Thickness Test



MIG Welding Repair



PMI



Pressure Test

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Cast Steel Gate Valve

www.fbvalve.com

FBK

Design

FBK cast steel gate valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full bore and meet the design requirements of API 600 & API 6D, BS 1414 & BS EN 1984 and generally conform to ASME B16.34. Valves are available in a complete range of body/bonnet materials and trim.

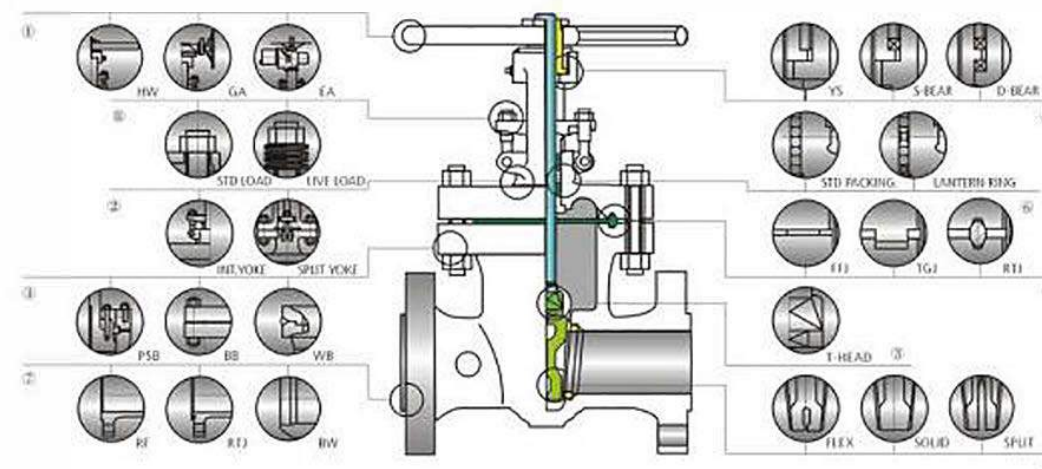
Available Modifications

Trim Changes
End Connection Modifications
Packing & Gasket Changes
Operator Type
Extended Stem

Range of Materials

The major materials of standard body/bonnet are carbon, cryogenic and stainless steel. For some special applications, we can provide others as per customer's requirements.

Pressure Equalizing
Customer's Specified Coatings
Changeable Welded-end Bore
Oxygen & Chlorine Cleaning & Packaging



① Operation

Large handwheel is easy for operation and available with gear, motor, pneumatic or hydraulic actuators for more difficult services.

② OS & Y

The yoke is integrated with bonnet for cast steel gate valve 150LB-8", 300LB-8", 600LB-6", 900LB-4" & below.

③ Stem

T head integrally forged stem ensure sufficient strength of the joint.

④ Bolted Bonnet(BB)

Three ways of bolt bonnet connection are optional; bolted bonnet(BB), welded bonnet(WB) and pressure seated bonnet(PSB). In particular cases like operating in high temperature and high pressure (normally 2500LB above), PSB will be needed.

⑤ Body-to-Bonnet Joint

Flat Face Joint(FFJ): 150LB
Tongue & Groove Joint(TGJ): 300LB & 600LB
Ring Joint(RTJ): 900LB & above

⑥ Lantern Ring And Double Packing Set

The employ of lantern ring gives a excellent packing compactness. Double packing set is available for critical service.

⑦ Ends Connection

Flanged or butt-welded end is for pipe connection.

⑧ Live Load Packing

With high pressure & temperature variations or frequent cycle required, live loading packing can extends service life in maintenance periods. Belleville springs are employed to provide constant gland stress.

⑨ Yoke Sleeve(YS)

A longer thread life is allowed if the yoke sleeve is equipped. When size is larger than 150LB-12", 300LB-10", 600LB-6", 900/1500/2500LB-4", valves are regularly provided with roll bearings.

⑩ Wedge

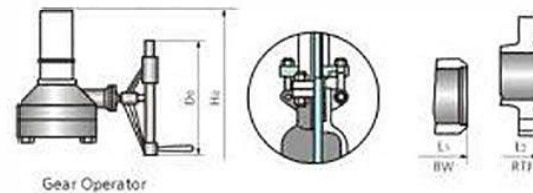
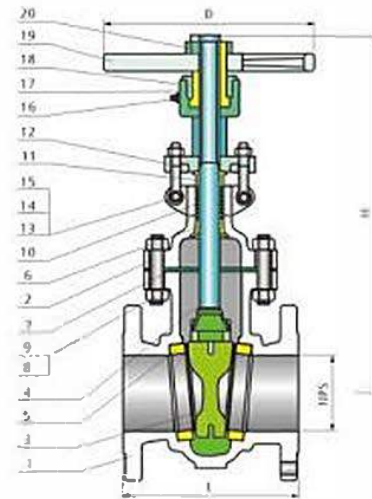
The wedge can be categorized into two groups on the basis of its property: flexible & solid wedge or single & dual wedge.

Applicable Standards

Design & Manufacture: API600
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flanged End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

Design Description

Full Bore
OS&Y Rising Stem & Non-rising Stem
Bolted Bonnet
Flexible Wedge, Fully Guided
Solid or Split Wedge
Renewable Seat Ring
Forged T-head Stem
Flanged or Butt Welded End



Gear Operator

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Wedge	A216-WCB + CR13	A351-CF8M	A352-LCB + CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	A105 + CR13	Integral HF	A350-LF2 + CR13
6	Stem Backseat	A276-420	Integral	A276-420
7	Bonnet Gasket	Spiral Wound (Graphite + 304 or 316)		
8	Bonnet Stud	A193-87	A193-88	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-304	Carbon Steel
14	Eyebolt	A193-87	A193-88	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Grease Fitting	Brass + Steel		
17	Yoke Sleeve	Aluminum-Bronze		
18	Yoke Sleeve Jam Nut	Carbon Steel		
19	Handwheel	Ductile Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Ductile Ni-Resist optional;

2) 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.

Dimensions Data

ANSI Class 150LB

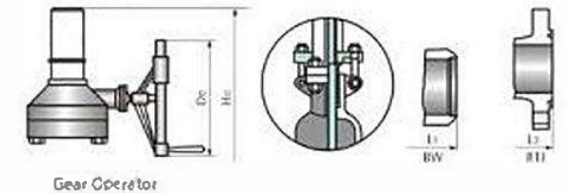
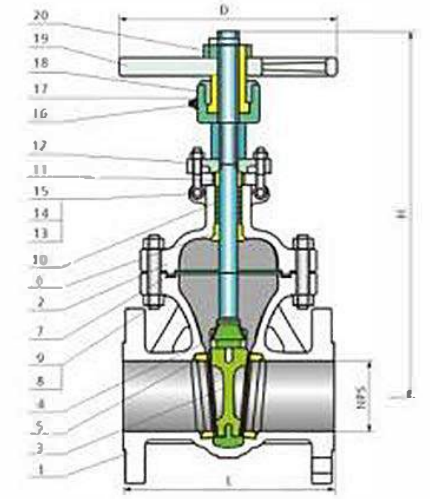
Size	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900
L(RF)	mm	178	191	203	229	267	292	330	356	381	406	432	457	508	559	610	610	711	711
L1(BW)	mm	216	241	283	305	403	419	457	502	572	610	660	711	813	864	914	914	965	1016
L2(RTJ)	mm	191	203	216	241	279	305	343	368	394	419	445	470	521	-	-	-	-	-
H	mm	355	365	430	495	620	775	935	1110	1250	1420	-	-	-	-	-	-	-	-
Ho	mm	-	-	-	-	795	1015	1210	1405	1535	1780	2030	2300	2600	2680	2890	3110	3280	3640
D	mm	200	200	250	280	300	400	500	500	600	600	-	-	-	-	-	-	-	-
Do	mm	-	-	-	-	310	310	310	460	460	460	460	530	530	530	530	600	600	600
Weight	H.W	Kg	20	23	32	45	75	120	180	265	365	485	-	-	-	-	-	-	-
	G.O	Kg	-	-	-	-	104	150	215	315	451	645	863	1165	1550	1880	2300	2550	3390

Applicable Standards

Design & Manufacture: API600
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flanged End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

Design Description

Full Bore
OS&Y Rising Stem & Non-rising Stem
Bolted Bonnet
Flexible Wedge, Fully Guided
Solid or Split Wedge
Renewable Seat Ring
Forged T-head Stem
Flanged or Butt Welded End



Gear Operator

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Wedge	A216-WCB + CR13	A351-CF8M	A352-LCB + CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	A105 + CR13	Integral HF	A350-LF2 + CR13
6	Stem Backseat	A276-420	Integral	A276-420
7	Bonnet Gasket	Spiral Wound (Graphite + 304 or 316)		
8	Bonnet Stud	A193-87	A193-88	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-304	Carbon Steel
14	Eyebolt	A193-87	A193-88	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Grease Fitting	Brass + Steel		
17	Yoke Sleeve	Aluminum-Bronze		
18	Yoke Sleeve Jam Nut	Carbon Steel		
19	Handwheel	Ductile Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Ductile Ni-Resist optional;

2) 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.

Dimensions Data

ANSI Class 300LB

Size	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900
L/L1(RF/BW)	mm	216	241	283	305	403	419	457	502	572	610	660	711	813	864	914	914	965	1016
L2(RTJ)	mm	232	257	298	321	419	435	473	518	578	638	698	758	859	919	979	1039	1099	1159
H	mm	364	385	445	520	649	798	1000	1129	1195	-	-	-	-	-	-	-	-	-
Ho	mm	-	-	-	650	835	1030	1255	1460	1585	1830	2000	2175	2620	2850	3080	3180	3300	3760
D	mm	200	200	280	300	350	400	450	500	600	-	-	-	-	-	-	-	-	-
Do	mm	-	-	-	310	310	310	460	460	460	460	460	530	530	600	600	600	600	600
Weight	H.W	Kg	26	35	55	67	147	228	332	512	715	-	-	-	-	-	-	-	-
	G.O	Kg	-	-	-	100	186	235	416	502	756	965	1224	1400	2385	3000	3300	3550	4400

Applicable Standards

Design & Manufacture: API600
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6DZ

Main Parts Materials

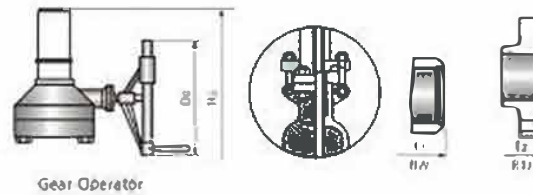
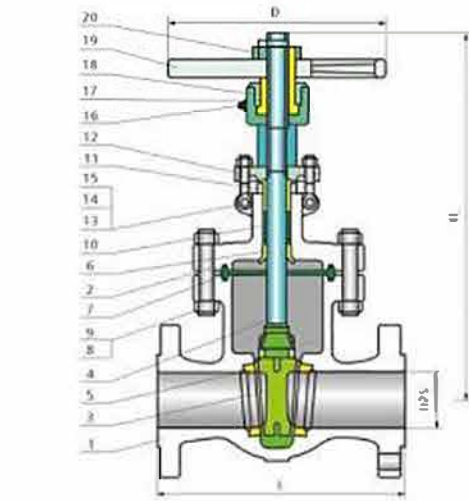
NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Oxygenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Wedge	A216-WCB + CR13	A351-CF8M	A352-LCB + CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	A105 + CR13	Integral + HF	A350-LF2 + CR13
6	Stem Backseat	A276-420	Integral	A276-420
7	Bonnet Gasket	Spiral Wound (Graphite + 304 or 316)		
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-304	Carbon Steel
14	Eyebolt	A193-B7	A193-B8	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Grease Fitting	Brass + Steel		
17	Yoke Sleeve	Aluminum-Bronze		
18	Yoke Sleeve Jam Nut	Carbon Steel		
19	Handwheel	Ductile Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Ductile Ni-Resist optional;

2) 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.

Design Description

Full Bore
OS&Y Rising Stem & Non-rising Stem
Bolted Bonnet
Flexible Wedge, Fully Guided
Solid or Split Wedge
Renewable Seat Ring
Forged T-head Stem
Flanged or Butt Welded End



Dimensions Data

ANSI Class 600LB

Size	In	2	2 1/2	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/L ₁ (RF/BW)	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397
L ₂ (RTJ)	mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407
H	mm	380	420	500	575	750	850	1005	1130	1270	1365	-	-	-
H ₀	mm	-	-	585	695	900	1110	1300	1650	1750	1900	2020	2172	2650
D	mm	250	280	300	350	450	550	650	700	900	900	-	-	-
D ₀	mm	-	-	310	310	460	460	460	460	530	530	600	600	600
Weight	H.W	Kg	37	50	82	142	245	423	682	932	1177	1513	-	-
	G.O	Kg	-	-	87	134	286	472	657	893	1318	1720	1980	2460

Applicable Standards

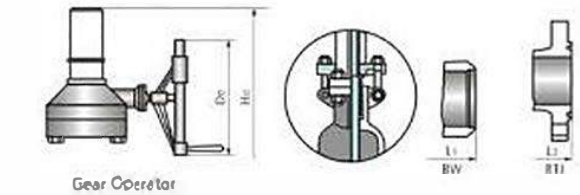
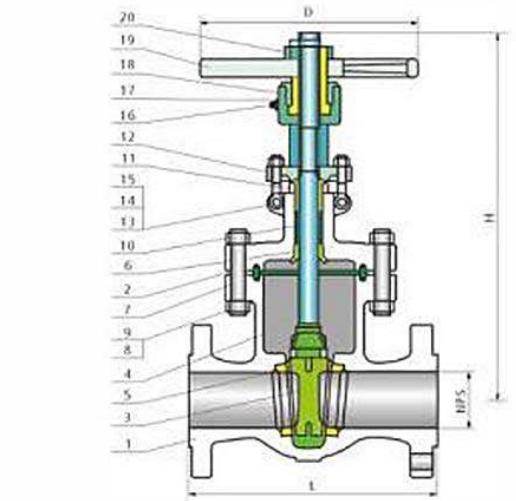
Design & Manufacture: API600
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Oxygenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Wedge	A216-WCB + CR13	A351-CF8M	A352-LCB + CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	A105 + HF	Integral + HF	A350-LF2 + HF
6	Stem Backseat	A276-420	Integral	A276-420
7	Bonnet Gasket	Steel Ring 316SS Ring 304SS Ring		
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-304	Carbon Steel
14	Eyebolt	A193-B7	A193-B8	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Grease Fitting	Brass + Steel		
17	Yoke Sleeve	Aluminum-Bronze		
18	Yoke Sleeve Jam Nut	Carbon Steel		
19	Handwheel	Ductile Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Ductile Ni-Resist optional;

2) 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.



Dimensions Data

ANSI Class 900LB

Size	In	2	2 1/2	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/L ₁ (RF/BW)	mm	368	419	381	457	610	737	838	965	1029	1130	1219	1321	1519
L ₂ (RTJ)	mm	371	422	384	460	613	740	841	968	1038	1140	-	-	-
H	mm	430	490	505	575	795	885	1035	1180	1350	1890	-	-	-
H ₀	mm	-	-	-	625	900	1000	1130	1520	1600	2100	2232	2435	2640
D	mm	300	350	350	400	500	650	700	900	900	900	-	-	-
D ₀	mm	-	-	310	310	460	460	530	530	530	600	800	800	950
Weight	H.W	Kg	70	110	140	178	358	550	1000	1235	1600	2150	-	-
	G.O	Kg	-	-	167	227	396	627	1100	1310	1665	2330	3000	4650

Applicable Standards

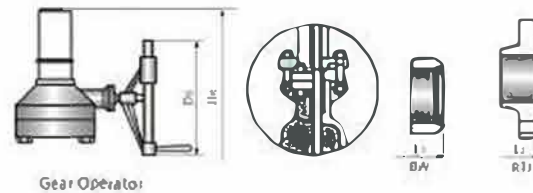
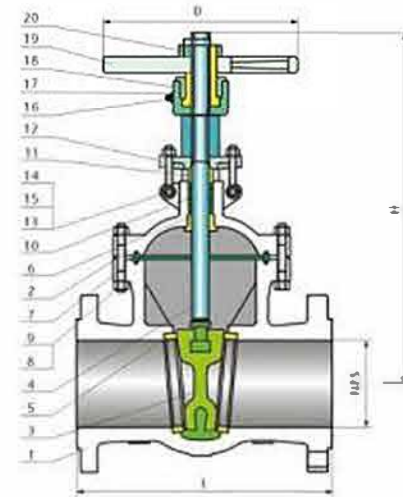
Design & Manufacture: API600
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

Design Description

Full Bore
OS&Y Rising Stem & Non-rising Stem
Bolted Bonnet
Flexible Wedge, Fully Guided
Solid or Split Wedge
Renewable Seat Ring
Forged T-head Stem
Flanged or Butt Welded End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Wedge	A216-WCB + CR13	A351-CF8M + HF	A352-LCB + CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	A105 + HF	Integral + HF	A350-LF2 + HF
6	Stem Backseat	A276-420	Integral	A276-420
7	Bonnet Gasket	Steel Ring	316SS Ring	304SS Ring
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-304	Carbon Steel
14	Eyebolt	A193-B7	A193-B8	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Grease Fitting		Brass - Steel	
17	Yoke Sleeve		Aluminum-Bronze	
18	Yoke Sleeve Jam Nut		Carbon Steel	
19	Handwheel		Ductile Iron	
20	Handwheel Nut		Carbon Steel	



Gear Operator

Note: 1) Ductile Ni-Resist optional;

2) 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.

Dimensions Data

ANSI Class 1500LB

Size	in	2	2 1/2	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/L ₁ (RF/BW)	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943
L ₂ (RTJ)	mm	371	422	473	549	711	841	1000	1146	1276	1407	1559	1686	1971
H	mm	430	490	540	650	835	925	1230	-	-	-	-	-	-
H ₀	mm	-	-	680	810	1035	1180	1525	1620	1905	2050	2380	2580	2915
D	mm	300	350	400	500	600	750	900	-	-	-	-	-	-
D ₀	mm	-	-	310	310	460	530	600	600	600	600	600	600	600
Weight	H.W	Kg	70	110	175	270	520	1560	-	-	-	-	-	-
	G.O	Kg	-	-	202	300	575	915	1750	2120	3306	5300	8070	14275

Applicable Standards

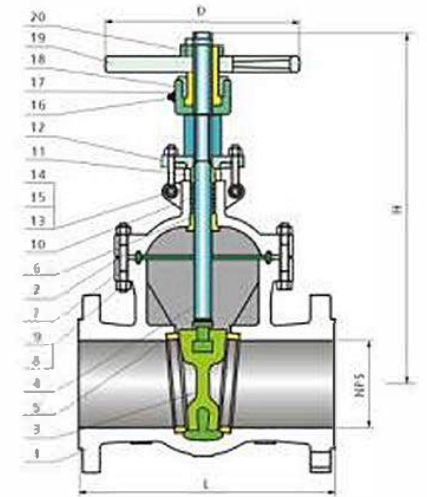
Design & Manufacture: API600
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

Design Description

Full Bore
OS&Y Rising Stem & Non-rising Stem
Bolted Bonnet
Flexible Wedge, Fully Guided
Solid or Split Wedge
Renewable Seat Ring
Forged T-head Stem
Flanged or Butt Welded End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Wedge	A216-WCB + HF	A351-CF8M + HF	A352-LCB + HF
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	A105 + HF	Integral + HF	A350-LF2 + HF
6	Stem Backseat	A276-420	Integral	A276-420
7	Bonnet Gasket	Steel Ring	316SS Ring	304SS Ring
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing		Graphite	
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-304	Carbon Steel
14	Eyebolt	A193-B7	A193-B8	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Grease Fitting		Brass - Steel	
17	Yoke Sleeve		Aluminum-Bronze	
18	Yoke Sleeve Jam Nut		Carbon Steel	
19	Handwheel		Ductile Iron	
20	Handwheel Nut		Carbon Steel	



Gear Operator

Note: 1) Ductile Ni-Resist optional;

2) 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.

Dimensions Data

ANSI Class 2500LB

Size	in	2	2 1/2	3	4	6	8	10	12
mm	50	65	80	100	150	200	250	300	
L/L ₁ (RF/BW)	mm	451	508	578	673	914	1022	1270	1422
L ₂ (RTJ)	mm	454	514	584	683	927	1038	1292	1445
H	mm	490	580	630	725	1040	1150	1400	-
H ₀	mm	580	630	765	850	1100	1150	1460	1660
D	mm	280	300	350	400	600	750	900	-
D ₀	mm	310	310	310	460	530	600	600	600
Weight	H.W	Kg	100	150	245	390	780	1260	2380
	G.O	Kg	130	180	275	420	835	1355	2565

Applicable Standards

Design & Manufacture: API602
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10/Manufacturer Standard
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Socket Welded End: ASME B16.11
Threaded End: ASME B1.20.1
Inspection & Test: API 598

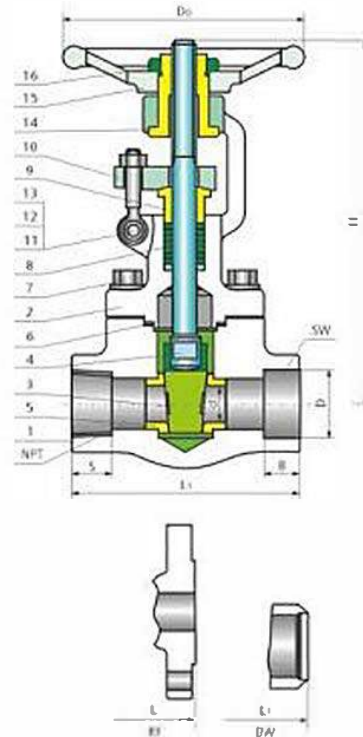
Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Alloy Steel
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	Seat Ring	A276-410	A182-F316	A276-410+HF
6	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+304
7	Bonnet Stud	A193-87	A193-88M	A193-816
8	Packing	Graphite		
9	Gland	A276-410	A276-316	A276-410
10	Gland Flange	A105	A182-F316	A182-F11
11	Eyebolt Pin	A276-410	A276-316	A276-410
12	Eyebolt	A193-87	A193-88M	A193-816
13	Eyebolt Nut	A194-2H	A194-8M	A194-4
14	Yoke Sleeve	A276-410		
15	Handwheel	Malleable Iron		
16	Handwheel Nut	Carbon Steel		

Note: 1) Spiral wound construction.

Design Description

OS & Y Rising Stem
Bolted Bonnet or Welded Bonnet
Single Wedge, Fully Guided
Renewable Seat Ring
Yoke Integral with Bonnet
SW, Screwed Welded End
NPT, Threaded End
BW, Butt Welded End
Flanged End



Dimensions Data ANSI Class 150LB/300LB/600LB/800LB

Size		L1 ¹⁾	Flange End			d	SW		NPT ²⁾	H	Do	Weight ³⁾ (kg)	
			150LB	300LB	600LB		D	B					
In	mm	mm	mm	mm	mm	mm	mm	mm	S	mm	mm	Bolted	Welded
3/8	10	79	102	140	165	10	17.6	9.6	13.6	151	100	4.5	4
1/2	15	79	108	140	165	10	21.8	9.6	13.6	151	100	5.1	4
3/4	20	92	117	152	190	13.5	27.1	12.7	13.9	158	100	8.2	4.3
1	25	111	127	165	216	18	33.8	12.7	17.3	185	125	10.5	6.6
1 1/4	32	120	140	178	229	24	42.6	12.7	18	239	160	12.4	9.5
1 1/2	40	120	165	190	241	30	48.7	12.7	18.4	243	160	20.1	11
2	50	140	178	215	292	36.5	61.1	15.9	19.2	279	180	28	14.5

Note: 1) 150LB~800LB-BW, SW or NPT; 2) 600LB-RF, 800LB-8W/SW/NPT.

Applicable Standards

Design & Manufacture: API602
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10/Manufacturer Standard
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Socket Welded End: ASME B16.11
Threaded End: ASME B1.20.1
Inspection & Test: API 598

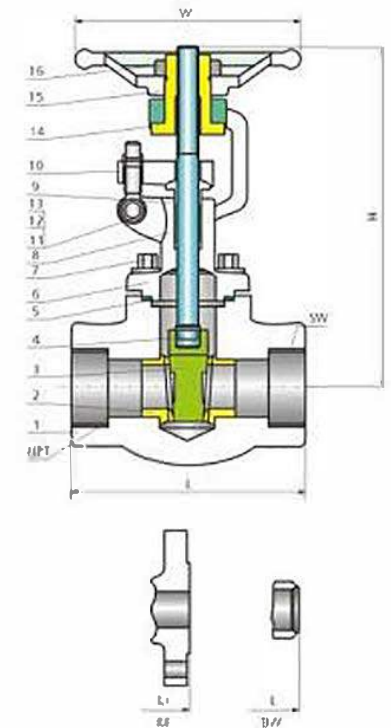
Main Parts Materials

No	Part Name	ASTM Materials		
		Carbon Steel	Stainless Steel	Alloy Steel
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	Seat Ring	A276-410	A182-F316	A276-410+HF
6	Bonnet Gasket ¹⁾	Graphite+304	Graphite+316	Graphite+304
7	Bonnet Stud	A193-87	A193-88M	A193-816
8	Packing	Graphite		
9	Gland	A276-410	A276-316	A276-410
10	Gland Flange	A105	A182-F316	A182-F11
11	Eyebolt Pin	A276-410	A276-316	A276-410
12	Eyebolt	A193-87	A193-88M	A193-816
13	Eyebolt Nut	A194-2H	A194-8M	A194-4
14	Yoke Sleeve	A276-410		
15	Handwheel	Malleable Iron		
16	Handwheel Nut	Carbon Steel		

Note: 1) Spiral wound construction.

Design Description

OS & Y Rising Stem
Bolted Bonnet or Welded Bonnet
Single Wedge, Fully Guided
Renewable Seat Ring
Yoke Integral with Bonnet
SW, Screwed Welded End
NPT, Threaded End
BW, Butt Welded End
Flanged End



Dimensions Data ANSI Class 900LB/1500LB

Size		L	L1	H(Open)	W	Weight(kg)	
Reduced Bore						Bolted	Welded
In	mm	mm	mm	mm	mm		
3/8	10	95	-	169	100	2.5	2.4
1/2	15	111	216	197	125	4.3	4.2
3/4	20	111	229	197	125	4.2	4.0
1	25	120	254	236	160	6.6	6.3
1 1/4	32	120	279	246	160	8.8	8.7
1 1/2	40	140	305	283	180	12.5	12.1
2	50	178	368	330	200	17.2	17.2

Design

FBK cast steel globe valves are designed and manufactured to provide maximum service life and dependability. All globe valves are full bore and meet the design requirements of BS 1873. Valves are available in a complete range of body/bonnet materials and trim.

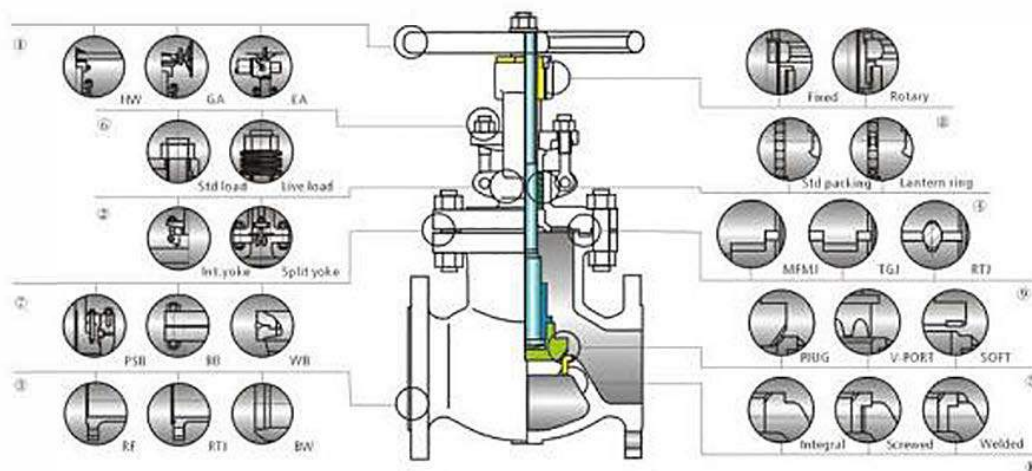
Available Modifications

Trim Changes
End Connection Modifications
Packing & Gasket Changes
Operator Type
Extended Stem

Range of Materials

The major materials of standard body/bonnet are carbon, cryogenic and stainless steel. For some special applications, we can provide others as per customer's requirements.

Pressure Equalizing
Customer's Specified Coatings
Changeable Welded-end Bore
Oxygen & Chlorine Cleaning & Packaging



① Operation

Large handwheel is easy for operation and available with gear, motor, pneumatic or hydraulic actuators for more difficult services.

② OS & Y

The yoke is integrated with bonnet for cast steel globe valve 10" & below.

③ End Connections

RTJ or butt-welded end is for pipe connection.

④ Lantern Ring And Double Packing Set

The employ of lantern ring gives a excellent packing compactness. Double packing set is available for critical service.

⑤ Disc

Plug discs available for all sizes which provide excellent sealing property. V port disc is used for throttle application. Soft Teflon disc is suitable for low temperature service condition.

⑥ Live Load Packing

With high pressure & temperature variations or frequent cycle required, live loading packing can extend service life in maintenance periods. Belleville springs are employed to provide constant gland stress.

⑦ Bolted Bonnet(BB)

Three ways of bolt bonnet connection are optional; bolted bonnet(BB), welded bonnet(WB) and pressure sealed bonnet(PSB). In particular cases like operating in high temperature and high pressure (normally 2500LB above), PSB will be needed.

⑧ Yoke Sleeve(YS)

Yoke sleeve is furnished in aluminum bronze to reduce operating torque. Most sizes are available with ball bearing yoke sleeves.

⑨ Body-to-Bonnet Joint

Male & Female Joint(MFJ): 150LB~600LB
Tongue & Groove Joint(TGJ): 150LB~600LB
Ring Joint(RTJ): 900LB & above

⑩ Seat Ring

Screwed or welded on seat is optional for globe valve if being requested by the customer.

Applicable Standards

Design & Manufacture: BS 1873
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598

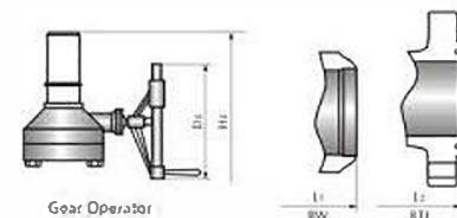
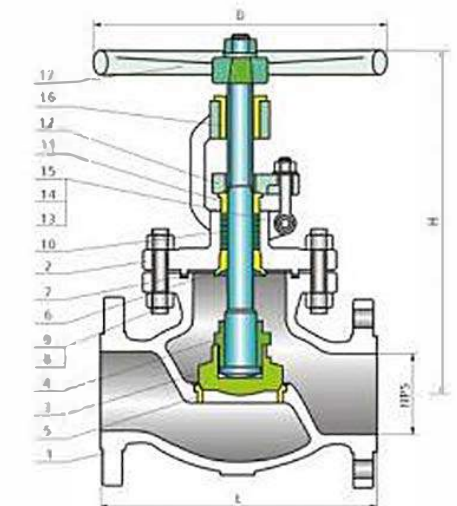
Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A105+CR13	A182-F316-HF	A350-LF2+CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	Integral+CR13	Integral+HF	Integral+CR13
6	Stem Backseat	A273-420	Integral	A276-420
7	Bonnet Gasket	Spiral Wound(Graphite+304 or 316)		
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-316	Carbon Steel
14	Eyebolt	A193-B7	A193-B8	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Yoke Sleeve	Aluminum-Bronze ¹⁾		
17	Handwheel	Ductile Iron		

Note: 1) A 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.

Design Description

Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10" & above



Dimensions Data

		ANSI Class 150LB											
Size	in	2	2 1/2	3	4	6	8	10	12	14	16	20	24
	mm	50	65	80	100	150	200	250	300	350	400	500	600
L/L1(RF/BW)	mm	203	216	241	292	406	495	622	698	787	914	978	1295
L2(RTJ)	mm	216	229	254	305	419	508	635	711	800	927	991	1308
H	mm	328	360	373	400	528	680	775	880	-	-	-	-
H0	mm	-	-	-	-	556	658	805	955	1100	1175	1450	1690
D	mm	200	250	250	280	400	450	500	600	-	-	-	-
D0	mm	-	-	-	-	310	310	460	460	460	460	600	600
Weight	H.W	Kg	18	26	43	54	95	160	299	373	-	-	-
	G.O	Kg	-	-	-	-	114	158	259	378	640	920	2200

Applicable Standards

Design & Manufacture: BS 1873
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598

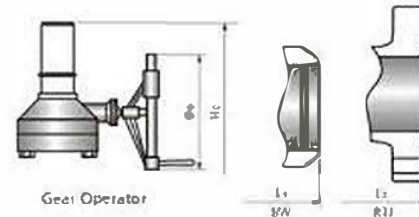
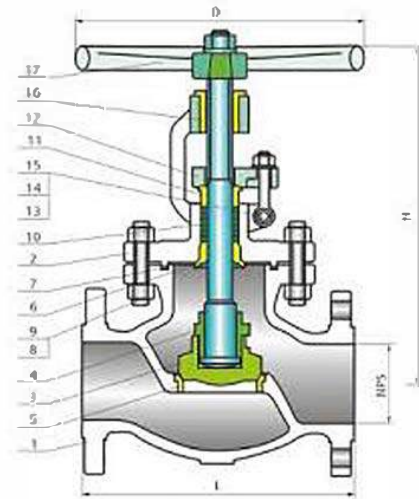
Design Description

Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10° & above

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A105+CR13	A182-F316-HF	A350-LF2+CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	Integral+CR13	Integral+HF	Integral+CR13
6	Stem Backseat	A273-420	Integral	A276-420
7	Bonnet Gasket	Spiral Wound(Graphite+304 or 316)		
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-316	Carbon Steel
14	Eyebolt	A193-B7	A193-B8	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Yoke Sleeve	Aluminum-Bronze ¹⁾		
17	Handwheel	Ductile Iron		

Note: 1) A 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.



Dimensions Data

ANSI Class 300LB

Size	In	2	2 1/2	3	4	6	8	10	12	14	16	18	20
	mm	50	65	80	100	150	200	250	300	350	400	450	500
L/L1(RF/BW)	mm	267	292	318	356	444	559	622	711	838	864	977	1016
L2(RTJ)	mm	283	308	333	371	460	575	638	727	-	-	-	-
H	mm	346	390	403	474	635	870	950	1030	-	-	-	-
H0	mm	-	-	-	-	690	950	990	1155	1155	1325	1473	1574
D	mm	220	250	280	350	450	500	600	700	-	-	-	-
D0	mm	-	-	-	-	310	460	460	600	600	720	720	-
Weight	H.W	Kg	29	44	59	87	162	355	575	-	-	-	-
	G.O	Kg	-	-	-	-	177	389	409	635	880	1300	2100

Applicable Standards

Design & Manufacture: BS 1873
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598

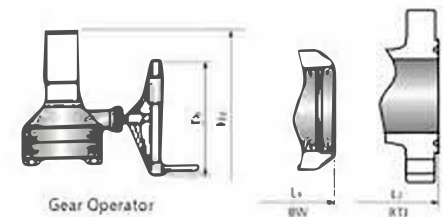
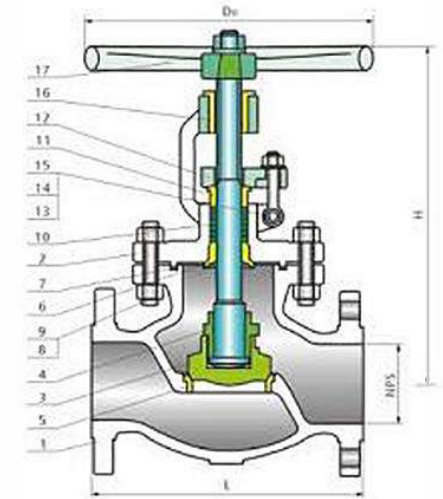
Design Description

Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10° & above

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A105+CR13	A182-F316-HF	A350-LF2+CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	Integral+CR13	Integral+HF	Integral+CR13
6	Stem Backseat	A273-420	Integral	A276-420
7	Bonnet Gasket	Spiral Wound(Graphite+304 or 316)		
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-316	Carbon Steel
14	Eyebolt	A193-B7	A193-B8	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Yoke Sleeve	Aluminum-Bronze ¹⁾		
17	Handwheel	Ductile Iron		

Note: 1) A 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.



Dimensions Data

ANSI Class 600LB

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
L/L1(RF/BW)	mm	292	330	356	432	559	660	787	838	889	991
L2(RTJ)	mm	295	333	359	435	562	663	790	841	892	994
H	mm	360	410	465	545	785	930	-	-	-	-
H0	mm	-	-	-	575	975	1120	1219	1570	1800	1930
D	mm	280	280	300	400	500	550	-	-	-	-
D0	mm	-	-	-	310	460	460	600	600	760	760
Weight	H.W	Kg	35	42	66	117	263	469	-	-	-
	G.O	Kg	-	-	-	148	334	544	675	1280	2510

Applicable Standards

Design & Manufacture: BS 1873
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598

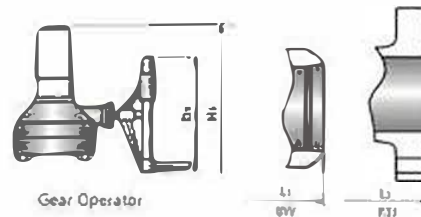
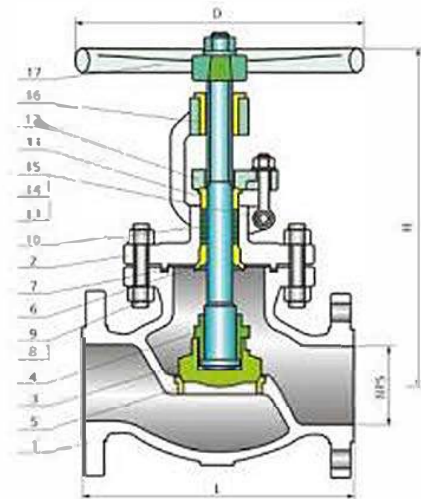
Design Description

Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10° & above

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A105+CR13	A182-F316	A350-LF2+CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	Integral+CR13	Integral+HF	Integral+CR13
6	Stem Backseat	A273-420	A276-316	A276-420
7	Bonnet Gasket	Spiral Wound(Graphite-304 or 316)		
8	Bonnet Stud	A193-87	A193-88	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-316	Carbon Steel
14	Eyebolt	A193-87	A193-88	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Yoke Sleeve	Aluminum-Bronze ^H		
17	Handwheel	Ductile Iron		

Note: 1) A 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.



Dimensions Data

		ANSI Class 900LB							
Size	In	2	2 1/2	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L/L1(RF/BW)	mm	368	419	361	457	610	737	838	-
L2(RTJ)	mm	371	422	384	460	613	740	841	-
H	mm	430	520	564	685	950	1050	-	-
Ho	mm	-	-	630	720	1015	-	1410	-
D	mm	300	350	400	450	600	700	-	-
Do	mm	-	-	310	310	460	-	600	-
Weight	H.W	Kg	55	68	113	179	429	815	-
	G.O	Kg	-	-	128	210	480	950	-

Applicable Standards

Design & Manufacture: BS 1873
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598

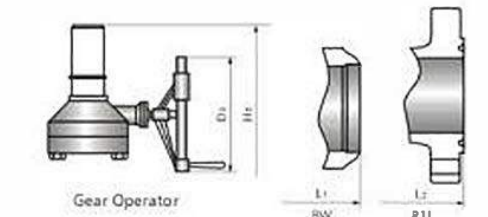
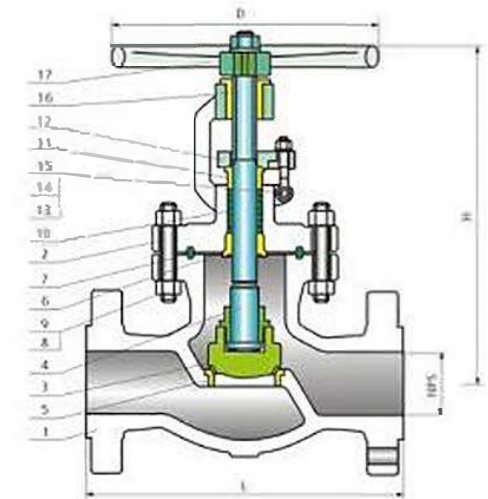
Design Description

Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10° & above

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A105+CR13	A182-F316+HF	A350-LF2+CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	Integral+CR13	Integral+HF	Integral+CR13
6	Stem Backseat	A273-420	A276-316	A276-420
7	Bonnet Gasket	Steel Ring		
8	Bonnet Stud	A193-87	A193-88	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-8	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-316	A276-420
12	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-316	Carbon Steel
14	Eyebolt	A193-87	A193-88	A320-L7
15	Eyebolt Nut	A194-2H	A194-8	A194-4
16	Yoke Sleeve	Aluminum-Bronze ^H		
17	Handwheel	Ductile Iron		

Note: 1) A 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.



Dimensions Data

		ANSI Class 1500LB							
Size	In	2	2 1/2	3	4	6	8	10	
	mm	50	65	80	100	150	200	250	
L/L1(RF/BW)	mm	368	419	470	546	705	832	991	
L2(RTJ)	mm	371	422	473	549	711	841	1001	
H	mm	505	550	630	808	930	-	-	
Ho	mm	-	-	765	890	1020	1230	1500	
D	mm	350	400	400	450	600	-	-	
Do	mm	-	-	310	310	530	530	650	
Weight	H.W	Kg	137	141	261	336	966	-	
	G.O	Kg	-	-	320	397	1035	1550	

Dimensions Data

		ANSI Class 2500LB							
Size	In	2	2 1/2	3	4	6	8	10	
	mm	50	65	80	100	150	200	250	
L/L1(RF/BW)	mm	451	508	578	673	914	1022	1270	
L2(RTJ)	mm	454	514	584	683	927	1038	1292	
H	mm	495	495	603	685	-	-	-	
Ho	mm	-	-	-	-	1371	1600	-	
D	mm	400	500	550	600	-	-	-	
Do	mm	-	-	-	-	500	600	-	
Weight	H.W	Kg	117	117	195	260	-	-	
	G.O	Kg	-	-	-	810	1300	-	

Applicable Standards

Design & Manufacture: API 602
 Pressure-temperature Rating: ASME B16.34
 Face to Face: ASME B16.10/Manufacturer Standard
 Flange Ends: ASME B16.5
 Butt Welded End: ASME B16.25
 Socket Welded End: ASME B16.11
 Threaded End: ASME B1.20.1
 Inspection & Test: API 598

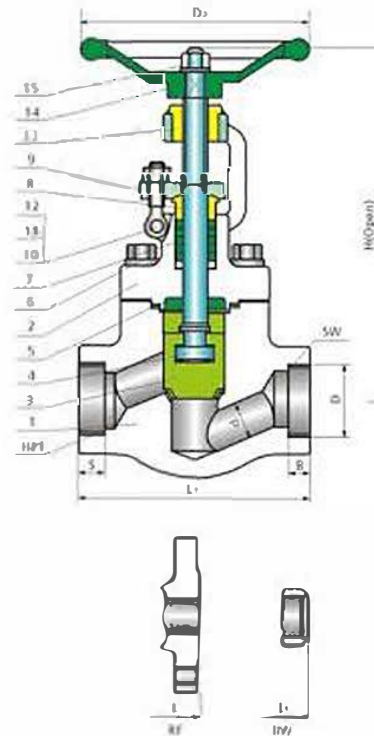
Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Alloy Steel
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	A193-88M	A193-B16
7	Packing	Graphite		
8	Gland	A276-410	A276-316	A276-410
9	Gland Flange	A105	A182-F316	A182-F11
10	Eyebolt Pin	A276-410	A276-316	A276-410
11	Eyebolt	A193-B7	A193-88M	A193-B16
12	Eyebolt Nut	A194-2H	A194-8M	A194-4
13	Yoke Sleeve	A276-410		
14	Handwheel	Malleable Iron		
15	Handwheel Nut	Carbon Steel		

Note: 1) Spiral wound construction;
 2) Seat: integral with body.

Design Description

OS & Y, Outside Screw and Yoke
 Bolted Bonnet or Welded Bonnet
 Loose Disc
 Plug Type Disc or Ball Type Disc
 Integral Seat
 Yoke Integral with Bonnet
 Rising Stem & Handwheel
 Horizontal Service
 SW, Screwed Welded End
 NPT, Threaded End
 BW, Butt Welded End



Dimensions Data ANSI Class 150LB/300LB/600LB/800LB

Size		L ¹⁾	Flange End				d		SW		NPT	H(Open)	Ds	Weight (kg)	
			150LB	300LB	600LB						S				
in	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Bolted	Welded
3/8	10	79	102	152	165	9	17.6	9.6	13.6	164	100	3.8	2	2.8	
1/2	15	79	108	152	165	9	21.8	9.6	13.6	164	100	5.6	3	3.4	
3/4	20	92	117	178	190	13	27.1	12.7	13.9	164	100	7.8	4	4.7	
1	25	111	127	203	216	17.5	33.8	12.7	17.3	203	125	12.5	9	9.2	
1 1/4	32	120	140	216	229	23	42.6	12.7	18	224	160	17	10	10.5	
1 1/2	40	152	165	229	241	29	48.7	12.7	18.4	260	160	23.5	13	13.3	
2	50	172	203	267	292	35	61.1	15.9	19.2	300	180	38.8	18	18.9	

Note: 1) 150LB-800LB-BW, SW or NPT; 2) 600LB-RF, 800LB-BW/SW/NPT.

Applicable Standards

Design & Manufacture: API 602
 Pressure-temperature Rating: ASME B16.34
 Face to Face: ASME B16.10/Manufacturer Standard
 Flange End: ASME B16.5
 Butt Welded End: ASME B16.25
 Socket Welded End: ASME B16.11
 Threaded End: ASME B1.20.1
 Inspection & Test: API 598

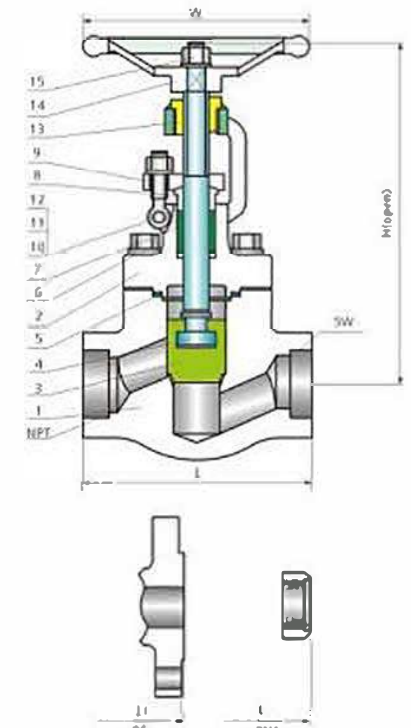
Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Alloy Steel
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	A193-88M		
7	Packing	A193-B7	Graphite	A193-B16
8	Gland	A276-410	A276-316	A276-410
9	Gland Flange	A105	A182-F316	A182-F11
10	Eyebolt Pin	A276-410	A276-316	A276-410
11	Eyebolt	A193-B7	A193-88M	A193-B16
12	Eyebolt Nut	A194-2H	A194-8M	A194-4
13	Yoke Sleeve	A276-410		
14	Handwheel	Malleable Iron		
15	Handwheel Nut	Carbon Steel		

Note: 1) Spiral wound construction;
 2) Seat: integral with body.

Design Description

OS & Y, Outside Screw and Yoke
 Bolted Bonnet or Welded Bonnet
 Loose Disc
 Plug Type Disc or Ball Type Disc
 Integral Seat
 Yoke Integral with Bonnet
 Rising Stem & Handwheel
 Horizontal Service
 SW, Screwed Welded End
 NPT, Threaded End
 BW, Butt Welded End



Dimensions Data ANSI Class 900LB/1500LB

Size		L	L1	H(Open)	W	Weight(kg)	
						Bolted	Welded
in	mm	mm	mm	mm	mm		
3/8	10	92	216	171	100	2.2	2.0
1/2	15	111	207	125	3.7	3.4	
3/4	20	111	229	207	125	3.6	3.3
1	25	120	254	240	160	6.8	6.0
1 1/4	32	152	279	258	160	7.6	5.6
1 1/2	40	172	305	330	180	11.6	10.3
2	50	210	368	355	200	15.0	14.2

Design

FBK cast steel check valves are designed and manufactured to provide maximum service life and dependability. All check valves are full bore and meet the design requirements of BS 1868 and API 6D. Valves are available in a complete range of body/bonnet materials and trim.

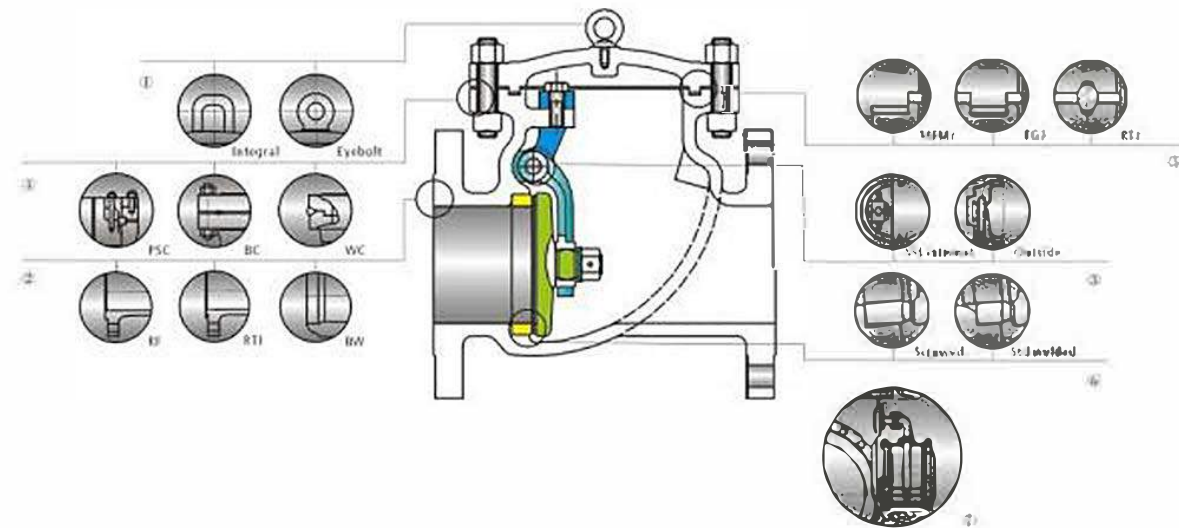
Available Modifications

Trim Changes
End Connection Modifications
Packing & Gasket Changes

Range of Materials

The major materials of standard body/bonnet are carbon, cryogenic and stainless steel. For some special applications, we can provide others as per customer's requirements.

Pressure Equalizing
Customer's Specified Coatings
Changeable Welded-end Bore



① Eyebolt

It is for 150LB-8", 300LB-8", 600LB-6", 900LB/1500LB/2500LB & above.

② Ends Connection

RTJ flanged or butt-welded end is for pipe connection.

③ Outside Lever And Weight

When swing check valve is 12" or below, the external hinge & pin are required for easy operation.

④ Bolted Cover(BC)

Three ways of bolt bonnet connection are optional: bolted cover(BC), welded cover(WC) and pressure sealed cover(PSC). In particular cases like operating in high temperature and high pressure (normally 2500LB above), PSC will be needed.

⑤ Body-to-Bonnet Joint

Male & Female Joint(MFJ): 150LB~600LB
Tongue & Groove Joint(TGJ): 150LB~600LB
Ring Joint(RTJ): 900LB & above

⑥ Seat Ring

Screwed or welded on seat is optional for check valve if being requested by the customer.

⑦ HCU Weighted Mechanical Accumulator

HCU Weighted mechanical accumulator is equipped to dampen or assist the disc as hydraulic pressure changing, leading the valve can be opened gradually at a lower speed.

Applicable Standards

Design & Manufacture: BS1868/API 6D
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

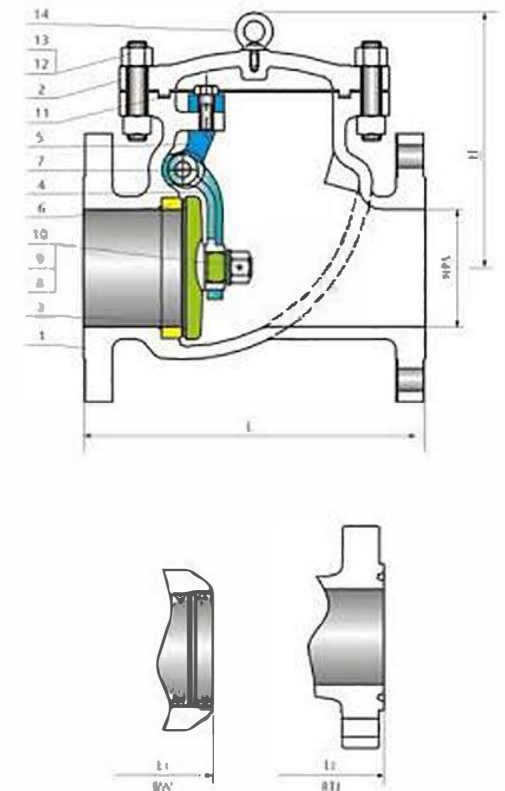
Design Description

BC, Bolted Cover
Swing or Piston Type
Anti-rotation Disc
Renewable Seat Ring
Non-penetrating Disc Shaft
Horizontal or Vertical Service
Flanged or Butt Welded End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Disc	WCB + CR13	CF8M	LCB + CR13
4	Hinge	A216-WCB	A351-CF8M	A352-LCB
5	Yoke	A216-WCB	A351-CF8M	A352-LCB
6	Seat Ring	A105 + CR13	Integral	A350-LF2 + CR13
7	Hinge Pin	A276-304	A276-316	A276-304
8	Disc Washer	Carbon Steel	A276-316	Carbon Steel
9	Disc Nut	A194-2H	A194-8M	A194-8
10	Disc Nut Pin	SS304	SS316	SS304
11	Bonnet Gasket	Spiral Wound { Graphite + 304 or 316 }		
12	Bonnet Stud	A193-B7	A193-B8	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-8	A194-4
14	Eyebolt	Carbon Steel		

NOTE: 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.



Dimensions Data

		ANSI Class 150LB																	
Size	In	2	2 1/2	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)	mm	203	216	241	292	356	495	622	698	787	864	978	978	1295	1295	1448	1524	1727	1956
L2(RTJ)	mm	216	229	254	305	368	508	635	711	800	877	911	991	1308	-	-	-	-	-
H	mm	138	160	172	245	280	347	390	435	465	525	580	615	710	640	920	980	1016	1092
Weight	Kg	12	19	24	37	61	115	180	310	400	503	630	791	960	1250	1580	1950	2800	3200

Applicable Standards

Design & Manufacture: BS1868/API 6D
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

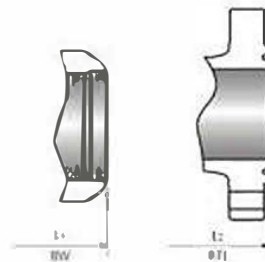
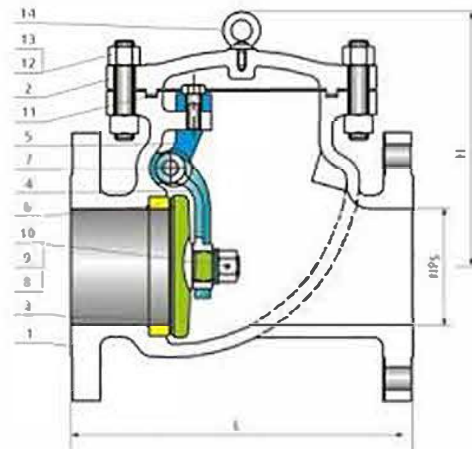
Design Description

BC, Bolted Cover
Swing or Piston Type
Anti-rotation Disc
Renewable Seat Ring
Non-penetrating Disc Shaft
Horizontal or Vertical Service
Flanged or Butt Welded End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Disc	WC8-CR13	CF8M	LCB-CR13
4	Hinge	A216-WCB	A351-CF8M	A352-LCB
5	Yoke	A216-WCB	A351-CF8M	A352-LCB
6	Seat Ring	A105-CR13	Integral	A350-LF2-CR13
7	Hinge Pin	A276-304	A276-316	A276-304
8	Disc Washer	Carbon Steel	A276-316	Carbon Steel
9	Disc Nut	A194-2H	A194-8M	A194-8
10	Disc Nut Pin	SS304	SS316	SS304
11	Bonnet Gasket	Spiral Wound (Graphite + 304 or 316)		
12	Bonnet Stud	A193-B7	A193-88	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-8	A194-4
14	Eyebolt	Carbon Steel		

Note: 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.



Dimensions Data

ANSI Class 300LB

Size	In	2	2 1/2	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)	mm	267	292	318	356	444	533	622	711	838	864	978	1016	1346	1346	1499	1594	1727	2083
L2(RTJ)	mm	283	308	333	371	460	549	638	727	854	879	994	1035	1368	1372	1524	1619	-	-
H	mm	150	178	223	255	310	355	415	485	515	560	620	685	760	850	920	1150	1260	1390
Weight	Kg	18	35	37	57	120	194	280	450	587	761	1030	1191	1892	2300	2600	3200	3700	4300

Applicable Standards

Design & Manufacture: BS1868/API 6D
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

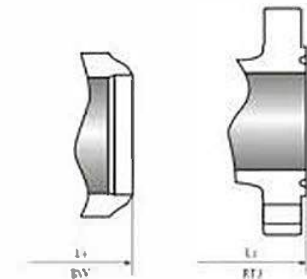
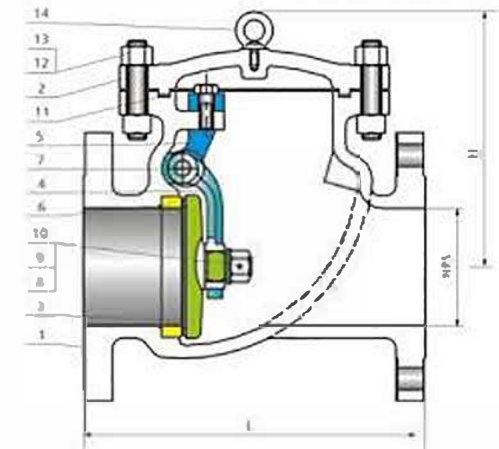
Design Description

BC, Bolted Cover
Swing or Piston Type
Anti-rotation Disc
Renewable Seat Ring
Non-penetrating Disc Shaft
Horizontal or Vertical Service
Flanged or Butt Welded End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Disc	WC8-CR13	CF8M	LCB-CR13
4	Hinge	A216-WCB	A351-CF8M	A352-LCB
5	Yoke	A216-WCB	A351-CF8M	A352-LCB
6	Seat Ring	A105-CR13	Integral	A350-LF2-CR13
7	Hinge Pin	A276-304	A276-316	A276-304
8	Disc Washer	Carbon Steel	A276-316	Carbon Steel
9	Disc Nut	A194-2H	A194-8M	A194-8
10	Disc Nut Pin	SS304	SS316	SS304
11	Bonnet Gasket	Spiral Wound (Graphite + 304 or 316)		
12	Bonnet Stud	A193-B7	A193-88	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-8	A194-4
14	Eyebolt	Carbon Steel		

Note: 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.



Dimensions Data

ANSI Class 600LB

Size	In	2	2 1/2	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)	mm	292	330	356	432	559	660	787	838	889	991	1092	1193	1397
L2(RTJ)	mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407
H	mm	170	178	225	275	385	445	500	570	590	650	778	970	1100
Weight	Kg	28	35	41	88	181	357	500	650	889	1285	1800	2150	3200

Applicable Standards

Design & Manufacture: BS1868/API 6D
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

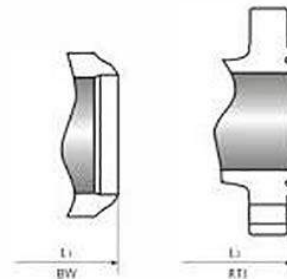
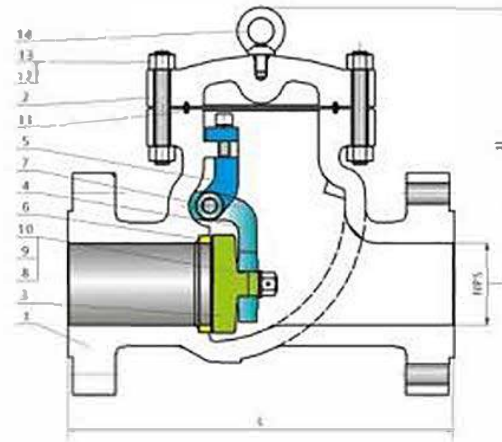
Design Description

BC, Bolted Cover
Swing or Piston Type
Anti-rotation Disc
Renewable Seat Ring
Non-penetrating Disc Shaft
Horizontal or Vertical Service
Flanged or Butt Welded End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A216-WCB+CR13	A351-CF8M	A352-LCB+CR13
4	Hinge	A216-WCB	A351-CF8M	A352-LCB
5	Yoke	A216-WCB	A351-CF8M	A352-LCB
6	Seat Ring	A105+HF	Integral+HF	A350-LF2+HF
7	Hinge Pin	A276-304	A276-316	A276-304
8	Disc Washer	Carbon Steel	A276-316	Carbon Steel
9	Disc Nut	A194-2H	A194-8M	A194-8
10	Disc Nut Pin	SS304	SS316	SS304
11	Bonnet Gasket	Steel Ring	SS316 Ring	SS304 Ring
12	Bonnet Stud	A193-B7	A193-8B	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-8	A194-4
14	Eyebolt	Carbon Steel		

Note: 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.



Dimensions Data

ANSI Class 900LB													
Size	In	2	2 1/2	3	4	6	8	10	12	14	16	18	24
	mm	50	65	80	100	150	200	250	300	350	400	450	600
L/L1(RF/BW)	mm	368	419	381	457	610	737	838	965	1029	1130	1219	1549
L2(RTJ)	mm	371	422	384	460	613	740	841	968	1039	1140	1232	1568
H	mm	183	220	280	315	390	460	540	640	660	780	845	1050
Weight	Kg	72	75	80	127	260	410	754	818	1180	1909	2500	4600

Applicable Standards

Design & Manufacture: BS1868/API 6D
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

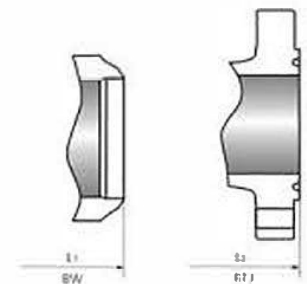
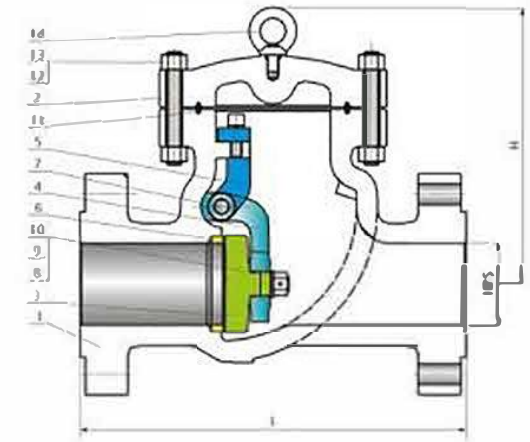
Design Description

BC, Bolted Cover
Swing or Piston Type
Anti-rotation Disc
Renewable Seat Ring
Non-penetrating Disc Shaft
Horizontal or Vertical Service
Flanged or Butt Welded End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A216-WCB+CR13	A351-CF8M+HF	A352-LCB+CR13
4	Hinge	A216-WCB	A351-CF8M	A352-LCB
5	Yoke	A216-WCB	A351-CF8M	A352-LCB
6	Seat Ring	A105+HF	Integral+HF	A350-LF2+HF
7	Hinge Pin	A276-304	A276-316	A276-304
8	Disc Washer	Carbon Steel	A276-316	Carbon Steel
9	Disc Nut	A194-2H	A194-8M	A194-8
10	Disc Nut Pin	SS304	SS316	SS304
11	Bonnet Gasket	Steel Ring	SS316 Ring	SS304 Ring
12	Bonnet Stud	A193-B7	A193-8B	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-8	A194-4
14	Eyebolt	Carbon Steel		

Note: 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.



Dimensions Data

ANSI Class 1500LB													
Size	In	2	2 1/2	3	4	6	8	10	12	14	16	18	20
	mm	50	65	80	100	150	200	250	300	350	400	450	500
L/L1(RF/BW)	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664
L2(RTJ)	mm	371	422	473	549	711	841	1000	1146	1276	1407	1559	1686
H	mm	265	240	303	340	430	500	605	785	830	950	1080	1145
Weight	Kg	72	75	110	205	450	634	1140	1939	2000	2700	3960	4400

Applicable Standards

Design & Manufacture: BS1868/API 6D
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

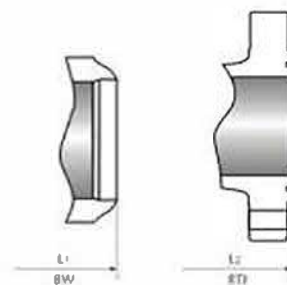
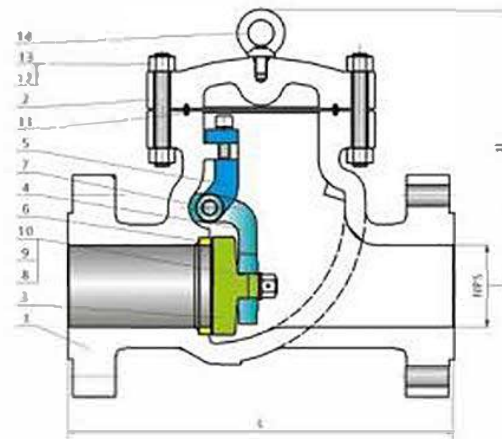
Design Description

BC, Bolted Cover
Swing or Piston Type
Anti-rotation Disc
Renewable Seat Ring
Non-penetrating Disc Shaft
Horizontal or Vertical Service
Flanged or Butt Welded End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A216-WCB + CR13	A351-CF8M + HF	A352-LCB + CR13
4	Hinge	A216-WCB	A351-CF8M	A352-LCB
5	Yoke	A216-WCB	A351-CF8M	A352-LCB
6	Seat Ring	A105 + HF	Integral + HF	A350-LF2 + HF
7	Hinge Pin	A276-304	A276-316	A276-304
8	Disc Washer	Carbon Steel	A276-316	Carbon Steel
9	Disc Nut	A194-2H	A194-8M	A194-8
10	Disc Nut Pin	SS304	SS316	SS304
11	Bonnet Gasket	Steel Ring	SS316 Ring	SS304 Ring
12	Bonnet Stud	A193-B7	A193-B8	A320-L7
13	Bonnet Stud Nut	A194-2H	A194-8	A194-4
14	Eyebolt	Carbon Steel		

Note: 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.



Dimensions Data

ANSI Class 2500LB									
Size	In	2	2 1/2	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L/L1(RF/BW)	mm	451	508	578	673	914	1022	1270	1422
L2(RTJ)	mm	454	514	581	683	927	1038	1292	1444
H	mm	285	305	350	410	540	620	705	855
Weight	Kg	93	100	196	440	868	970	1700	2080

Applicable Standards

Design & Manufacture: API 594
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

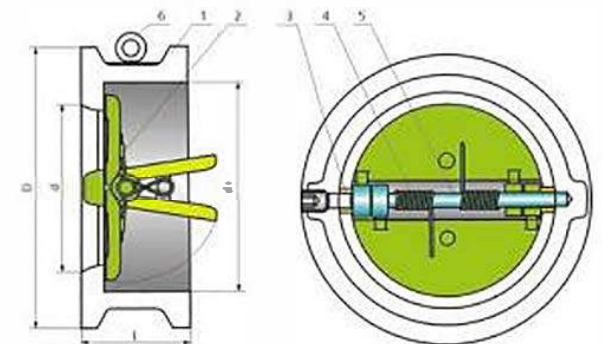
Design Description

One Piece Body
Butterfly Swing Type
Dual-plate Disc, Long-pattern
Renewable Split Disc
Horizontal or Vertical Service
Wafer End
Available with Flanged or Lug Type

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB + CR13	A351-CF8M + HF	A352-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	Eyebolt	Carbon Steel		

Note: 1) NPS 8" & above.



Dimensions Data

ANSI Class 150LB													
Size	In	2	2 1/2	3	4	6	8	10	12	14	16	18	24
	mm	50	65	80	100	150	200	250	300	350	400	450	600
L	mm	60	67	73	73	98	127	146	181	184	191	203	222
D	mm	103	122	135	173	220	277	337	407	448	512	547	715
d	mm	51	65	80	102	152	203	254	305	350	400	450	600
d1	mm	56	73	88	108	160	210	266	310	355	405	455	605
Weight	Kg	2	3	4	6	13	25	39	54	80	117	138	331

Dimensions Data

ANSI Class 300LB													
Size	In	2	2 1/2	3	4	6	8	10	12	14	16	18	24
	mm	50	65	80	100	150	200	250	300	350	400	450	600
L	mm	60	67	73	73	98	127	146	181	222	232	264	318
D	mm	110	128	147	179	249	305	359	420	483	537	594	772
d	mm	51	65	80	102	152	203	254	305	350	400	450	600
d1	mm	58	73	88	108	160	210	266	310	355	405	455	608
Weight	Kg	3	4	6	8	18	31	51	77	117	190	200	410

Applicable Standards

Design & Manufacture: API 594
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10
Flange End: ASME B16.5
Inspection & Test: API 598/API 6D

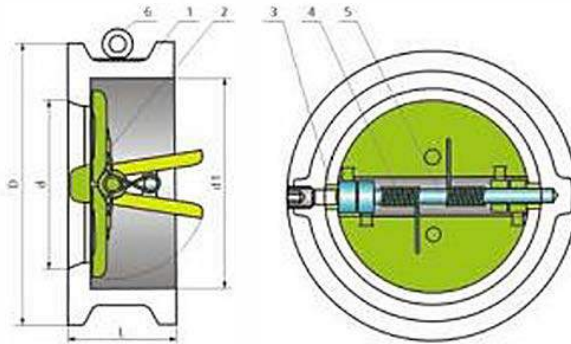
Design Description

One Piece Body
Butterfly Swing Type
Dual-plate Disc, Long-pattern
Renewable Split Disc
Horizontal or Vertical Service
Wafer End
Available with Flanged or Lug Type

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Alloy Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB + CH3	A351-CF8M + HF	A352-LCB + CH3
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-bolt	Carbon Steel		

Note: 1) NPS 8" & above.



Dimensions Data

ANSI Class 600LB											
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
L	mm	60	67	73	79	136	165	213	229	273	305
D	mm	110	128	147	191	264	318	398	455	490	562
d	mm	51	65	80	102	152	200	250	305	337	387
d1	mm	58	73	88	108	162	212	266	312	355	400
Weight	Kg	4	5	8	11	26	55	95	140	223	360

Dimensions Data

ANSI Class 900LB											
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
L	mm	70	83	83	102	159	206	241	292	356	384
D	mm	140	162	165	201	286	356	432	495	518	572
d	mm	51	65	80	102	150	200	250	305	337	387
d1	mm	58	73	88	108	162	212	266	312	355	400
Weight	Kg	8	11	14	20	42	84	145	220	350	470

Applicable Standards

Design & Manufacture: API 602
Pressure-temperature Rating: ASME B16.34
Face to Face: ASME B16.10/Manufacturer Standard
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Socket Welded End: ASME B16.11
Threaded End: ASME B1.20.1
Inspection & Test: API 598

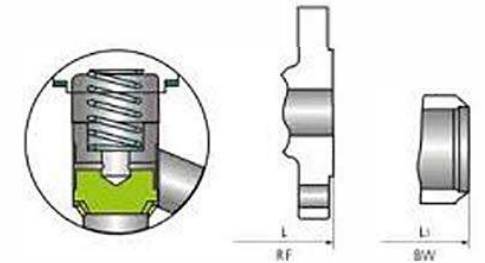
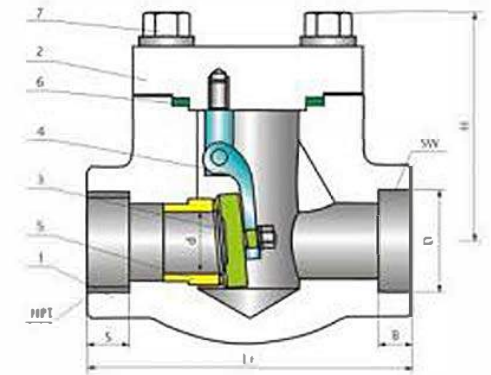
Design Description

BC, Bolted Cover
Choice of WB, Welded Bonnet
Lift or Swing Type
Seat Ring Integral with Body of Lift
Horizontal or Vertical Service
SW, Screwed Welded End
NPT, Threaded End
Flanged End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Alloy Steel
1	Body	A105	A182-F316	A182-F11
2	Bonnet	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 + HF	A276-410 + HF
6	Bonnet Gasket	Graphite + 304	Graphite + 316	Graphite + 304
7	Bonnet Stud	A193-B7	A193-B8M	A193-B16

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



Dimensions Data

Size		L1	Flange Ends			d	B		NPT	H	Weight' (kg)	
			150LB	300LB	600LB		D	SW	S		Bolted	Welded
In	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
3/8	10	79	102	152	165	9	17.6	9.6	13.6	61	3.8	2.8
1/2	15	79	108	152	165	10	21.8	9.6	13.6	61	5.6	3.4
3/4	20	92	117	178	190	13	27.1	12.7	13.9	61	7.8	4.7
1	25	111	127	203	216	17.5	33.8	12.7	17.3	78	12.5	9.2
1 1/4	32	120	140	216	229	23	42.6	12.7	18	84	17	10.5
1 1/2	40	120	165	229	241	30	48.7	12.7	18.4	3.98	23.5	13.3
2	50	140	203	267	292	35	61.1	15.9	19.2	120	38.8	18.9

Note: 1) 150LB-800LB-BW, SW or NPT; 2) 600LB-RF, 800LB-BW/SW/NPT.

Applicable Standards

Design & Manufacture: API 602
 Pressure-temperature Rating: ASME B16.34
 Face to Face: ASME B16.10/Manufacturer Standard
 Flange End: ASME B16.5
 Butt Welded End: ASME B16.25
 Socket Welded End: ASME B16.11
 Threaded End: ASME B1.20.1
 Inspection & Test: API 598

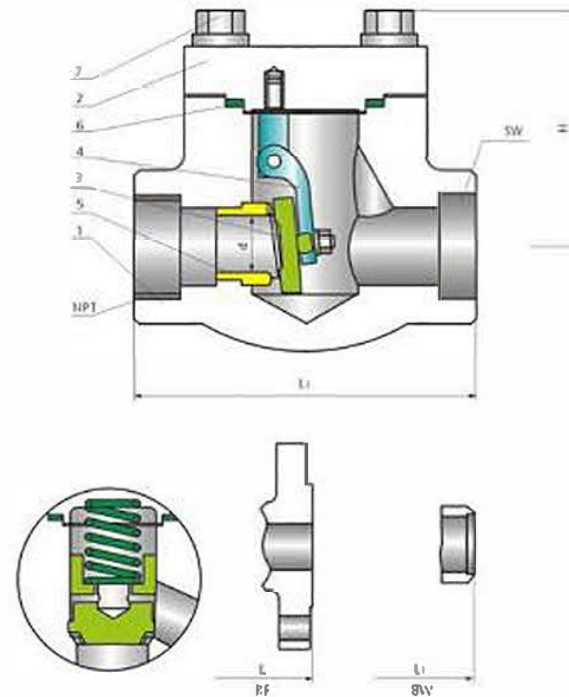
Design Description

BC, Bolted Cover
 Choice of Welded Cover
 Lift or Swing Type
 Seat Ring Integral with Body of Lift
 Horizontal or Vertical Service
 SW, Screwed Welded Ends
 NPT, Threaded End
 BW, Butt Welded End
 Flanged End

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Alloy Steel
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	A193-88M	A193-816

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



Dimensions Data

ANSI Class 900LB/1500LB

Size	In	mm	L	L1	H(Open)	Weight(kg)
			mm	mm	mm	
3/8	10		-	95	79	3.1
1/2	15		216	111	79	3.0
3/4	20		229	111	79	3.6
1	25		254	120	97	4.3
1 1/4	32		279	120	105	6.1
1 1/2	40		305	140	120	8.8
2	50		368	178	140	12.6

Applicable Standards

Design & Manufacture: API 6D/API 599
 Pressure-temperature Rating: ASME B16.34
 Anti Static: API 599
 Face to Face: ASME B16.10
 Flange End: ASME B16.5
 Butt Welded End: ASME B16.25
 Inspection & Test: API 598/API 6D

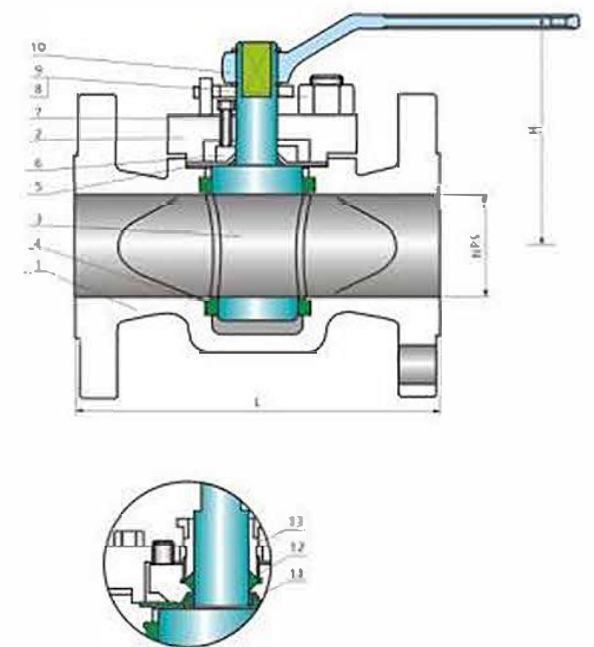
Design Description

Rugged, Heavy-duty Body
 BC, Bolted Cover
 PTFE Sleeved, Tapered Plug
 Large Port Openings
 Non-lubricated
 Stem Integral with Plug
 In-line Adjustment
 Anti Static Device
 Stopper Device
 Renewable Seat Ring
 Flanged or Butt Welded End
 Available with Gear Operator

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Plug	A182-F304	A182-F316	A182-F304
4	Sleeve	Glass Filled PTFE		
5	Bonnet Gasket	Graphite + 304	Graphite + 316	Graphite + 304
6	Adjusting Gasket	A182-F6a	A182-F316	A182-F6a
7	Adjusting Bolt	A193-B7	A193-88	A320-L7
8	Bonnet Stud	A193-B7	A193-88	A320-L7
9	Bonnet Bolt	A194-2H	A194-8	A194-L
10	Handle	Carbon Steel		
11	Diaphragm	A167-304 + PTFE	A167-316 + PTFE	A167-304 + PTFE
12	Packing	Graphite		
13	Gland Flange	A216-WCB	A351-CF8M	A352-LCB

Note: 1) A105 + ENP Optional;
 2) Jacketed construction.



Dimensions Data

ANSI Class 150LB

Size	In	2	2 1/2	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L(RF)	mm	178	190	203	229	267	292	330	356
H	mm	150	165	180	380	520	580	620	680
W	mm	320	350	410	320	320	320	350	380
Weight (Kg)	RF	17	20	25	40	70	135	220	300
	BW	13	14	17.5	29	55	110	185	247

Dimensions Data

ANSI Class 300LB

Size	In	2	2 1/2	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L(RF)	mm	216	241	283	305	403	419	457	502
H	mm	150	165	180	380	520	580	620	680
W	mm	320	350	410	320	320	320	350	380
Weight (Kg)	RF	17	20	25	40	70	135	220	300
	BW	13	14	17.5	29	55	110	185	247

Applicable Standards

Design & Manufacture: API 6D/API 599
Pressure-temperature Rating: ASME B16.34
Anti Static: API 599
Face to Face: ASME B16.10
Flange End: ASME B16.5
Butt Welded End: ASME B16.25
Inspection & Test: API 598/API 6D

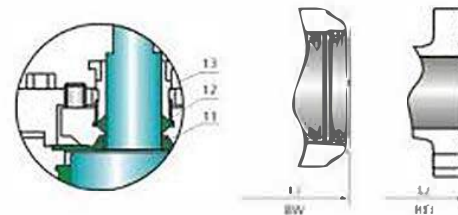
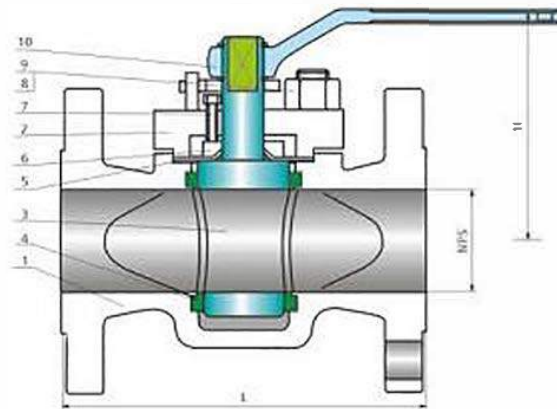
Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A352-LCB
3	Plug	A182-F304	A182-F316	A182-F304
4	Sleeve	Glass filled PTFE		
5	Bonnet Gasket	Graphite + 304	Graphite + 316	Graphite + 304
6	Adjusting Gasket	A182-F6a	A182-F316	A182-F6a
7	Adjusting Bolt	A193-B7	A193-B8	A320-L7
8	Bonnet Stud	A193-B7	A193-B8	A320-L7
9	Bonnet Bolt	A194-2H	A194-B	A194-J
10	Handle	Carbon Steel		
11	Diaphragm	A167-304 + PTFE	A167-316 + PTFE	A167-304 + PTFE
12	Packing	Graphite		
13	Gland Flange	A216-WCB	A351-CF8M	A352-LCB

Note: 1) A105 + ENP Optional;
2) Jacketed construction.

Design Description

Rugged, Heavy-duty Body
BC, Bolted Cover
PTFE Sleeved, Tapered Plug
Large Port Openings
Non-lubricated
Stem Integral with Plug
In-line Adjustment
Anti Static Device
Stopper Device
Renewable Seat Ring
Flanged or Butt Welded End
Available with Gear Operator



Dimensions Data		ANSI Class 600LB							
Size	in	2	2 1/2	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L/L1 (RF/BW)	mm	292	330	356	432	559	660	787	838
L2(RTJ)	mm	295	333	359	435	562	664	791	841
H	mm	155	170	185	390	530	590	630	690
W	mm	350	410	320	320	320	350	380	380
Weight (Kg)	RF/RF1	28	33	37	75	142	250	365	515
	BW	21	23.5	23	46	97	167	227	354

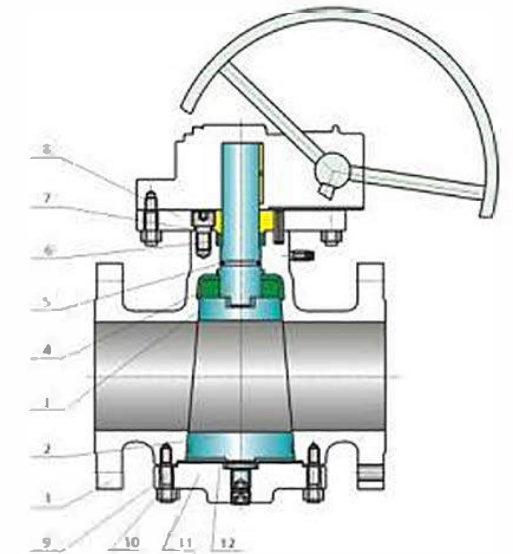
Dimensions Data		ANSI Class 900LB							
Size	in	2	2 1/2	3	4	6	8	10	12
	mm	50	65	80	100	150	200	250	300
L/L1 (RF/BW)	mm	368	419	381	457	610	737	838	965
L2(RTJ)	mm	371	422	384	460	613	740	841	968
H	mm	155	170	185	390	530	590	630	690
W	mm	350	410	320	320	320	350	380	380
Weight (Kg)	RF/RF1	52	60	70	92	195	320	455	625
	BW	32	34	47	55	120	197	277	405

Applicable Standards

Design & Manufacture: API 599/API 6D
Connection Dimension: ASME B16.5/B16.25
Face to Face: ASME B16.10/API 6D
Inspection & Test: API 598/API 6D

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plug	A216-WCB	A351-CF8M	A351-CF8
3	Stem	A182-F6a	A182-F316	A182-F6a
4	Joint	A182-F304	A182-F316	A182-F304
5	O-ring	VITON/NBR		
6	Packing	Flexible Graphite		
7	Bolt	A193-B7	A193-B8	A320-L7
8	Top Flange	A216-WCB	A351-CF8M	A352-LCB
9	Stud	A193-B7	A193-B8	A320-L7
10	Nut	A194-2H	A194-B	A194-J
11	Lower Cover	A216-WCB	A351-CF8M	A352-LCB
12	Gasket	Spiral Wound (Graphite/PTFE + 304 or 316)		



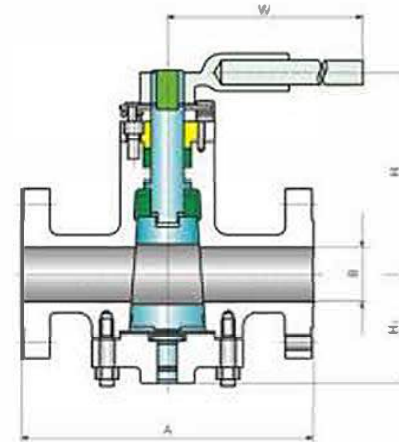
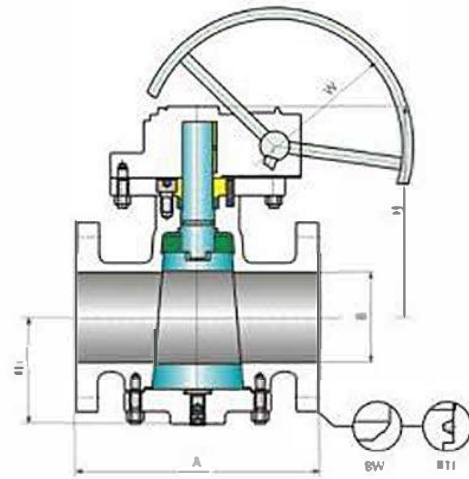
Plug Valve Introduction

1 Purpose

API balance type plug valve suit to nominal pressure class 150 to 1500, work temperature -29℃ to 121℃. It's used to be services shut off or turn on in the pipeline of oil, chemical industries, pharmacy, chemical fertilizer, power sector etc. It can be remote control by assembly the motor actuator.

2 Features.

- 1) Rational construction, reliable seal, nice-feature, attractive appearance.
- 2) Inverted pressure balance construction, will be easy for on-off.
- 3) Without oil sepper between body and seal face, the sealed grease can be injected through the lubricating nipple to plug at anytime, strengthen the seal property.
- 4) Plug valve with the anti-static device will be more safer for user.
- 5) Parts materials and flange dimension can be selected according to the actual conditions or client's requirements, to meet various requirement of project.



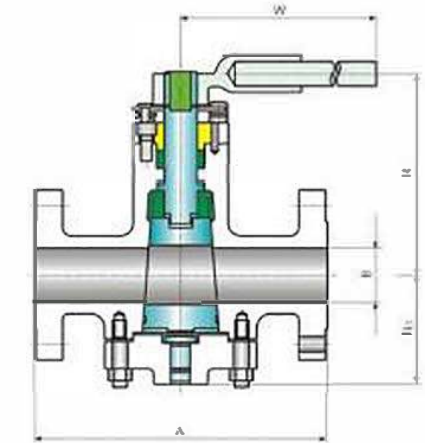
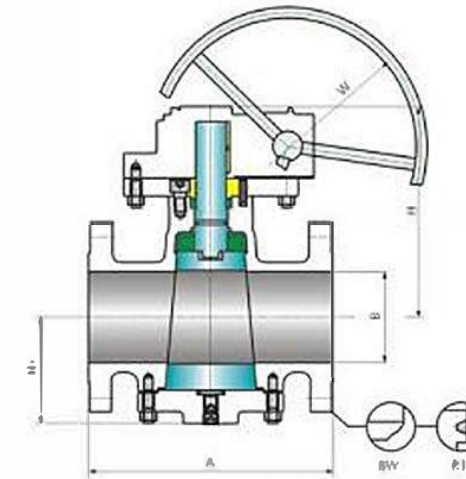
Dimensions Data ANSI Class 150LB

NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m	NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m
Short Series Type ANSI Class 150LB									Venturi Type ANSI Class 150LB								
2	50	178	51	175	106	350	18	98	★10	250	533	252	420	255	600	375	2166
3	80	203	76	190	127	600	31	180	★12	300	610	303	492	316	600	420	3199
4	100	229	102	214	158	700	50	302	★14	350	686	334	498	320	600	480	4849
★6	150	267	152	270	185	900	93	628	★16	400	762	385	645	368	700	590	6032
★8	200	292	201	370	220	600	250	2032	★18	450	864	436	687	426	760	713	9142
★10	250	330	252	420	250	600	330	2166	★20	500	914	487	742	477	760	880	12022
★12	300	356	303	490	310	600	360	3199	★24	600	1067	589	798	522	760	1203	19424

Dimensions Data ANSI Class 300LB

NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m	NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m
Short Series Type ANSI Class 300LB									Venturi Type ANSI Class 300LB								
2	50	216	51	184	108	500	25	172	6	150	403	152	307	200	900	144	1080
2 1/2	70	241	62	190	115	550	33	198	★8	200	419	303	390	230	600	280	3208
3	80	283	76	195	137	600	40	218	★10	250	457	252	433	255	600	370	3258
4	100	305	102	265	168	700	70	536	★12	300	502	303	500	320	700	408	5202
★6	150	403	152	307	200	900	144	1080	★14	350	762	334	630	340	700	510	8486
★8	200	419	201	390	230	600	280	3208	★16	400	838	385	740	376	762	630	10696
★10	250	457	252	433	255	600	370	3258	★18	450	914	436	788	436	762	750	15940
★12	300	502	303	500	320	700	408	5202	★20	500	991	487	833	497	762	890	21040
-	-	-	-	-	-	-	-	-	★24	600	1143	589	889	543	762	1035	24082

Note: ★ Gear Operator



Dimensions Data ANSI Class 600LB

NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m	NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m
Reduced Bore Type ANSI Class 600LB									Venturi Type ANSI Class 600LB								
2	50	292	51	194	108	500	30	292	6	150	403	152	307	200	900	144	1080
2 1/2	70	330	62	200	115	550	40	322	★8	200	419	303	390	230	600	280	3208
3	80	356	76	205	137	780	48	380	★10	250	457	252	433	255	600	370	3258
4	100	432	102	270	168	1100	85	918	★12	300	502	303	500	320	700	408	5202
★6	150	559	152	340	200	600	194	1814	★14	350	762	334	630	340	700	510	8486
★8	200	660	201	405	230	600	305	5114	★16	400	838	385	740	376	762	630	10696
★10	250	787	252	460	255	700	625	6083	★18	450	914	436	788	436	762	750	15940
-	-	-	-	-	-	-	-	-	★20	500	991	487	833	497	762	890	21040
-	-	-	-	-	-	-	-	-	★24	600	1143	589	889	543	762	1035	24082

Dimensions Data ANSI Class 900LB

NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m	NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m
Reduced Bore Type ANSI Class 900LB									Venturi Type ANSI Class 900LB								
2	50	368	51	215	120	700	50	417	★6	150	610	152	365	210	600	240	2548
3	80	381	76	250	145	800	70	540	★8	200	737	201	405	240	600	410	9022
4	100	457	102	300	180	1100	116	1258	★10	250	838	252	460	265	762	660	8516
★6	150	610	152	365	210	600	240	2548	★12	300	965	303	510	335	762	1150	11986
★8	200	737	201	405	240	700	410	7022	★16	400	1130	323	600	390	762	1960	20326
★10	250	838	252	460	265	762	860	8516	-	-	-	-	-	-	-	-	-

Dimensions Data ANSI Class 1500LB

NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m	NPS inch	DN	A mm	B mm	H mm	H ₁ mm	W mm	M(RF) kg	T N.m
Reduced Bore Type ANSI Class 1500LB									Venturi Type ANSI Class 1500LB								
2	50	368	51	215	120	700	50	654	★6	150	705	144	390	220	600	325	4022
3	80	470	76	260	150	1000	88	862	★8	200	832	192	415	260	762	520	10848
4	100	546	102	320	185	600	160	2064	★10	250	911	239	480	280	762	970	13389
★6	150	705	144	390	220	600	325	4022	★12	300	1130	287	540	360	762	1450	18792
★8	200	832	192	415	260	762	520	10848	-	-	-	-	-	-	-	-	-

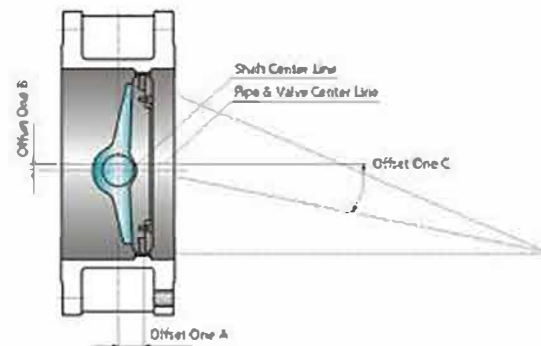
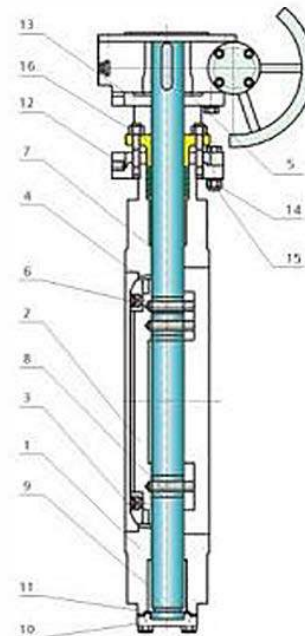
Note: ★ Gear Operator

Applicable Standards

Design & Manufacture: API 609/ASME B16.34
Connection Dimension: ASME B16.25/ASME B16.5
Face to Face: API 609
Inspection & Test: API 598

Main Parts Materials

NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Disc	A216-WCB	A351-CF8M	A352-LCB
3	Seal Gland	A105	A182-F316	A350-LF2
4	Seat	Graphite + 304	Graphite + 316	Graphite + 304
5	Flat Key	Carbon Steel	Stainless Steel	Carbon Steel
6	Screw	B7/2H	B8/B	17/4
7	Stem	A182-F6a	A182-F316	A182-F6a
8	Pin	A182-F6a	A182-F316	A182-F6a
9	Bushing	Bronze	Bronze	Bronze
10	End Cover	A105	A182-F316	A350-LF2
11	Gasket	Graphite + 304 or 316		
12	Packing	Flexible Graphite		
13	Nut	Carbon Steel	Carbon Steel	Carbon Steel
14	Nut	A194-2H	A194-6	A194-4
15	Boh	A193-B7	A193-B8	A320-L7
16	Gland	A216-WCB	A351-CF8	A352-LCB

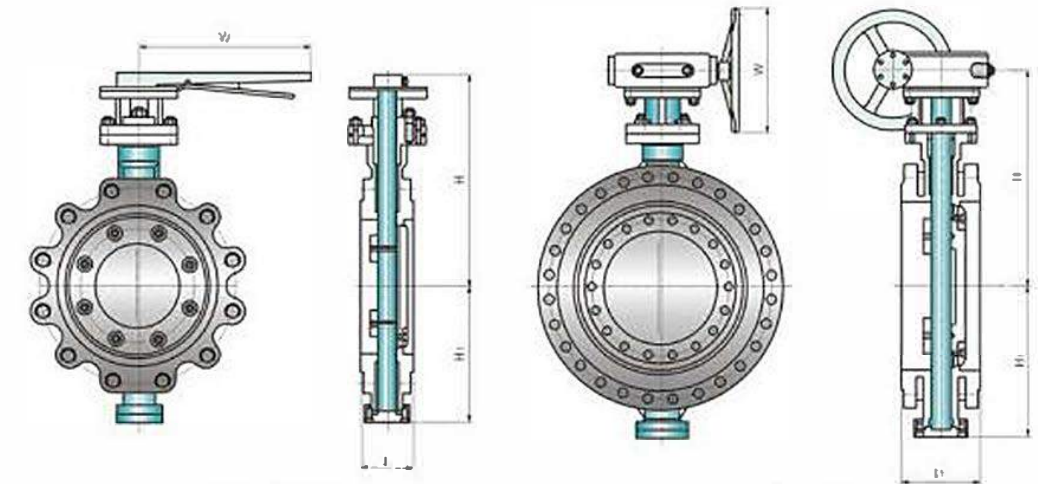


Features and Application

Triple eccentric butterfly valve series are the newly-developed long-life and energy-saving products. The sealing is metal to metal, which could be changed to be seal ring to metal, stainless steel plate and composite graphite to metal.

Under the working condition of high temperature and high pressure, it still has a stable sealing performance. Our company adopts optimized design and new technology, so that the torque is small, gaining the point of energy-saving, labor-saving and reliable sealing performance, thus to ensure the high-reliability of corrosion-resistance, stand fire and wear-resistance.

This product is widely used in petroleum, natural gas, piped gas and medicine, food industry, industrial environmental water treatment and shipping industry.



Water/Lug Type

Flange Type

Dimensions Data

ANSI Class 150LB

NPS inch	DN	L mm	L1 mm	H1 mm	H mm	W mm	MT (water) kg	T N.m	NPS inch	DN	L mm	L1 mm	H1 mm	H mm	W mm	MT (water) kg	T N.m
2	50	43	108	112	225	220	10	55	★16	400	102	216	352	540	600	160	4128
3	80	48	114	126	255	270	12	226	★18	450	114	222	386	585	600	200	5511
4	100	54	127	146	285	270	16	325	★20	500	127	229	415	642	600	270	7190
★6	150	57	140	170	332	360	25	615	★24	600	154	267	482	693	600	420	7814
★8	200	64	152	218	386	300	36	902	★30	750	165	318	622	868	600	700	16450
★10	250	71	165	245	427	300	60	1278	★36	900	200	330	673	1000	700	1050	23501
★12	300	81	178	290	498	500	80	2628	★42	1050	251	410	755	1058	700	1500	31963
★14	350	92	190	316	510	500	120	3276	★48	1200	276	470	866	1278	700	1845	47000

Dimensions Data

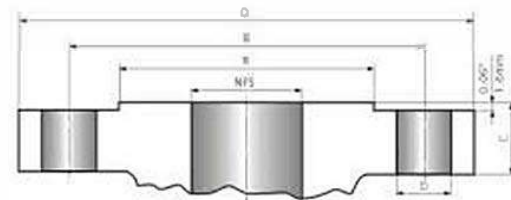
ANSI Class 300LB

NPS inch	DN	L mm	L1 mm	H1 mm	H mm	W mm	MT (water) kg	T N.m	NPS inch	DN	L mm	L1 mm	H1 mm	H mm	W mm	MT (water) kg	T N.m
3	80	48	114	130	265	270	15	352	★18	450	149	222	420	651	600	230	10223
4	100	54	127	150	290	270	19	514	★20	500	159	229	465	704	600	330	13469
★6	150	59	140	185	355	300	35	1073	★24	600	181	267	532	780	600	463	22827
★8	200	73	152	236	418	500	42	1954	★30	750	—	318	642	908	700	1280	39726
★10	250	83	165	273	456	500	68	2453	★36	900	—	330	703	1108	700	2150	63452
★12	300	92	178	313	498	600	88	3260	★42	1050	—	410	785	1258	700	3150	85326
★14	350	117	190	338	517	600	144	5405	★48	1200	—	470	906	1478	1000	4885	126742

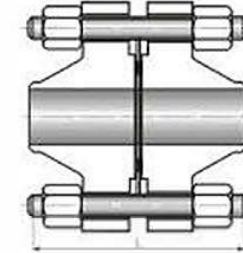
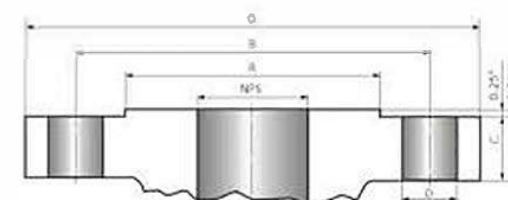
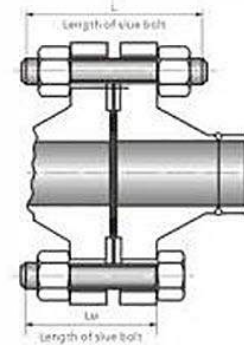
Dimensions Data

ANSI Class 600LB

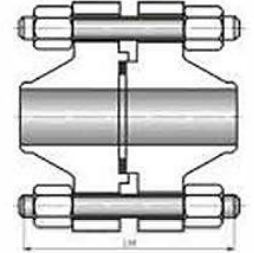
NPS inch	DN	L mm	L1 mm	H1 mm	H mm	W mm	MT (water) kg	T N.m	NPS inch	DN	L mm	L1 mm	H1 mm	H mm	W mm	MT (water) kg	T N.m
3	80	54	180	152	305	270	38	575	★14	350	140	270	378	378	600	398	14236
4	100	64	190	193	338	360	58	1043	★16	400	155	290	412	412	600	535	16947
★6	150	78	210	248	416	500	120	3673	★18	450	178	310	450	450	600	780	20473
★8	200	102	230	295	490	600	154	4520	★20	500	200	330	512	512	600	989	25218
★10	250	117	250	342	580	600	297	7061	★24	600	216	350	563	563	700	1266	31861
											232	390	622	622	700	1622	46095



ANSI Class 150LB/300LB
0.06\"/>



ANSI Class 600LB/900LB
0.25\"/>



ANSI Class 600LB/900LB
Male & Female

Class 150LB

NPS	O	C	R	B	D	Bolt	L	Lm
in mm	in mm	in mm	in mm	in mm	in mm	QTY Diam	in mm	in mm
2 50	6.00 152.4	0.75 19.1	3.62 91.9	4.75 120.7	0.75 19.1	4 5/8 3.25 82.6	2.75 69.9	
2 1/2 65	7.00 177.8	0.88 22.4	4.12 104.6	5.50 139.7	0.75 19.1	4 5/8 3.50 88.9	3.00 76.2	
3 80	7.50 190.5	0.94 23.9	5.00 127.0	6.00 152.4	0.75 19.1	4 5/8 3.50 88.9	3.00 76.2	
4 100	9.00 228.6	0.94 23.9	6.19 157.2	7.50 190.5	0.75 19.1	8 5/8 3.50 88.9	3.00 76.2	
5 125	10.00 254.0	0.94 23.9	7.31 185.7	8.50 215.9	0.88 22.4	8 3/4 3.75 95.3	3.25 82.6	
6 150	11.00 279.4	1.00 25.4	8.50 215.9	9.50 241.3	0.88 22.4	8 3/4 4.00 101.6	3.25 82.6	
8 200	13.50 342.9	1.12 28.4	10.62 269.7	11.75 298.5	0.88 22.4	8 3/4 4.25 108.0	3.50 88.9	
10 250	16.00 406.4	1.19 30.2	12.75 323.9	14.25 362.0	1.00 25.4	12 7/8 4.50 114.3	4.00 101.6	
12 300	19.00 482.6	1.25 31.8	15.00 381.0	17.00 431.8	1.00 25.4	12 7/8 4.75 120.7	4.00 101.6	
14 350	21.00 533.4	1.38 35.1	16.25 412.8	18.75 476.3	1.12 28.4	12 1 5.25 133.4	4.50 114.3	
16 400	23.50 596.9	1.44 36.6	18.50 469.9	21.25 539.8	1.12 28.4	16 1 5.25 133.4	4.50 114.3	
18 450	25.00 635.0	1.56 39.6	21.00 533.4	22.75 577.9	1.25 31.8	16 1 1/2 5.75 146.1	5.00 127.0	
20 500	27.50 698.5	1.69 42.9	23.00 584.2	25.00 635.0	1.25 31.8	20 1 1/2 6.25 158.8	5.50 139.7	
24 600	32.00 812.8	1.88 47.8	27.25 692.2	29.50 749.3	1.38 35.1	24 1 1/2 6.75 171.5	6.00 152.4	
26 650	34.25 870.0	2.69 68.3	29.50 749.3	31.75 806.5	1.38 35.1	24 1 1/2 8.25 209.6	7.50 190.5	
28 700	36.50 927.1	2.81 71.4	31.50 800.1	34.00 863.6	1.38 35.1	28 1 1/2 8.50 215.9	7.75 196.9	
30 750	38.75 984.3	2.94 74.7	33.75 857.3	36.00 914.4	1.38 35.1	28 1 1/2 9.00 228.6	8.00 203.2	
32 800	41.75 1060.5	3.18 80.8	36.00 914.4	38.50 977.9	1.62 41.1	28 1 1/2 9.75 247.7	8.75 222.3	
34 850	43.75 1113.3	3.25 82.6	38.00 965.2	40.50 1028.7	1.62 41.1	32 1 1/2 10.00 254.0	9.00 228.6	
36 900	45.00 1168.4	3.56 90.4	40.25 1022.4	42.75 1085.9	1.62 41.1	32 1 1/2 10.50 266.7	9.50 241.3	

Class 300LB

NPS	O	C	R	B	D	Bolt	L	Lm
in mm	in mm	in mm	in mm	in mm	in mm	QTY Diam	in mm	in mm
2 50	6.50 165.1	0.88 22.4	3.62 91.9	5.00 127.0	0.75 19.1	8 5/8 3.50 88.9	4.00 101.6	3.00 76.2
2 1/2 65	7.50 190.5	1.00 25.4	4.13 104.6	5.88 149.4	0.88 22.4	8 3/4 4.00 101.6	4.50 114.3	3.25 82.6
3 80	8.25 209.6	1.12 28.4	5.00 127.0	6.62 168.1	0.88 22.4	8 3/4 4.25 108.0	4.75 120.7	3.50 88.9
4 100	10.00 254.0	1.25 31.8	6.19 157.2	7.88 200.2	0.88 22.4	8 3/4 4.50 114.3	5.00 127.0	3.75 95.3
5 125	11.00 279.4	1.38 35.1	9.31 185.7	9.25 235.0	0.88 22.4	8 3/4 4.75 120.7	5.25 133.4	4.25 108.0
6 150	12.50 317.5	1.44 36.6	8.50 215.9	10.62 269.7	0.88 22.4	12 3/4 4.75 120.7	5.50 139.7	4.25 108.0
8 200	15.00 381.0	1.62 41.1	10.62 269.7	13.00 330.2	1.00 25.4	12 7/8 5.50 139.7	6.00 152.4	4.75 120.7
10 250	17.50 444.5	1.88 47.8	12.75 323.9	15.25 387.4	1.12 28.4	16 1 6.25 158.8	6.75 171.5	5.50 139.7
12 300	20.50 520.7	2.00 50.8	15.00 381.0	17.75 450.9	1.25 31.8	16 1 1/2 6.75 171.5	7.25 184.2	5.75 146.1
14 350	23.00 584.2	2.12 53.8	16.25 412.8	20.25 514.4	1.25 31.8	20 1 1/2 7.00 177.8	7.50 190.5	6.25 158.8
16 400	25.50 647.7	2.25 57.2	18.50 469.9	22.50 571.5	1.38 35.1	20 1 1/2 7.50 190.5	8.00 203.2	6.50 165.1
18 450	28.00 711.2	2.38 60.5	21.00 533.4	24.75 628.7	1.38 35.1	24 1 1/2 7.75 196.9	8.25 209.6	6.75 171.5
20 500	30.50 774.7	2.50 63.5	23.00 584.2	27.00 685.8	1.38 35.1	24 1 1/2 8.00 203.2	8.75 222.3	7.25 184.2
24 600	36.00 914.4	2.75 69.9	27.25 692.2	32.00 812.8	1.62 41.1	24 1 1/2 9.00 228.6	10.00 254.0	8.00 203.2
26 650	38.25 971.6	3.12 79.2	29.50 749.3	34.50 876.3	1.75 44.5	28 1 1/2 10.25 260.4	11.25 285.8	9.25 235.0
28 700	40.75 1035.1	3.38 85.9	31.50 800.1	37.00 939.8	1.75 44.5	28 1 1/2 10.75 273.1	11.75 298.5	9.75 247.7
30 750	43.00 1092.2	3.62 91.9	33.75 857.3	39.25 997.0	1.88 47.8	28 1 1/2 11.50 292.1	12.50 317.5	10.50 266.7
32 800	45.25 1149.4	3.88 98.6	36.00 914.4	41.50 1054.1	2.00 50.8	28 1 1/2 12.25 311.2	13.50 342.9	11.25 285.8
34 850	47.50 1206.5	4.00 101.6	38.00 965.2	43.50 1104.9	2.00 50.8	28 1 1/2 12.75 323.9	13.75 349.3	11.75 298.5
36 900	50.00 1270.0	4.12 104.6	40.25 1022.4	46.00 1168.4	2.12 53.8	32 2 13.25 336.6	14.25 362.0	12.25 311.2

- a) NPS 24" and smaller flanged ends designed by ANSI B16.5. NPS 26" and larger designed by MSS SP-44.
b) Flanged of 150LB and 300LB with the raised face of 0.06\"/>

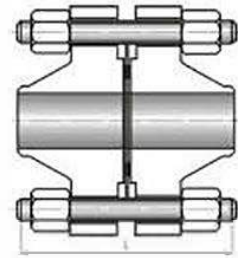
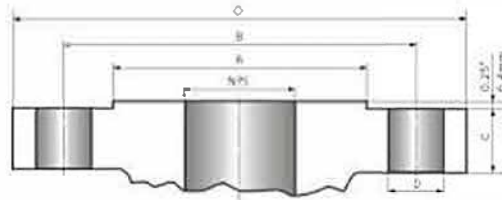
Class 600LB

NPS	O	C	R	B	D	Bolt	L	Lm
in mm	in mm	in mm	in mm	in mm	in mm	QTY Diam	in mm	in mm
2 50	6.50 165.1	1.00 25.4	3.62 91.9	5.00 127.0	0.75 19.1	8 5/8 4.25 108.0	4.25 108.0	4.00 101.6
2 1/2 65	7.50 190.5	1.12 28.4	4.12 104.6	5.88 149.4	0.88 22.4	8 3/4 4.75 120.7	4.75 120.7	4.50 114.3
3 80	8.25 209.6	1.25 31.8	5.00 127.0	6.62 168.1	0.88 22.4	8 3/4 5.00 127.0	5.00 127.0	4.75 120.7
4 100	10.75 273.1	1.50 38.1	6.19 157.2	8.50 215.9	1.00 25.4	8 7/8 5.75 146.1	5.75 146.1	5.50 139.7
5 125	13.00 330.2	1.75 44.5	7.31 185.7	10.50 266.7	1.12 28.4	8 1 6.50 165.1	6.50 165.1	6.25 158.8
6 150	14.00 355.6	1.88 47.8	8.50 215.9	11.50 292.1	1.12 28.4	12 1 6.75 171.5	6.75 171.5	6.50 165.1
8 200	16.50 419.1	2.19 55.6	10.62 269.7	13.75 349.3	1.25 31.8	12 1 1/4 7.50 190.5	7.50 190.5	7.25 184.2
10 250	20.00 508.0	2.50 63.5	12.75 323.9	17.00 431.8	1.38 35.1	16 1 1/4 8.50 215.9	8.50 215.9	8.25 209.6
12 300	22.00 558.8	2.62 66.5	15.00 381.0	19.25 489.0	1.38 35.1	20 1 1/4 8.75 222.3	8.75 222.3	8.50 215.9
14 350	23.75 603.3	2.75 69.9	16.25 412.8	20.75 527.1	1.50 38.1	20 1 1/2 9.25 235.0	9.25 235.0	9.00 228.6
16 400	27.00 685.8	3.00 76.2	18.50 469.9	23.75 603.3	1.62 41.1	20 1 1/2 10.00 254.0	10.00 254.0	9.75 247.7
18 450	29.25 743.0	3.25 82.6	21.00 533.4	25.75 654.1	1.75 44.5	20 1 1/2 10.75 273.1	10.75 273.1	10.50 266.7
20 500	32.00 812.8	3.50 88.9	23.00 584.2	28.50 723.9	1.75 44.5	24 1 1/2 11.25 285.8	11.50 292.1	11.00 279.4
24 600	37.00 939.8	4.00 101.6	27.25 692.2	33.00 838.2	2.00 50.8	24 1 1/2 13.00 330.2	13.25 336.6	12.75 323.9
26 650	40.00 1016.0	4.25 108.0	29.50 749.3	36.00 914.4	2.00 50.8	28 1 1/2 14.00 355.6	14.00 355.6	13.75 349.3
28 700	42.25 1073.2	4.38 111.3	31.50 800.1	38.00 965.2	2.12 53.8	28 2 14.50 368.3	14.50 368.3	14.25 362.0
30 750	44.50 1130.3	4.50 114.3	33.75 857.3	40.25 1022.4	2.12 53.8	28 2 15.00 381.0	14.75 374.7	14.75 374.7
32 800	47.00 1193.8	4.62 117.3	36.00 914.4	42.50 1079.5	2.38 60.5	28 2 1/4 15.50 393.7	15.75 400.1	15.25 387.4
34 850	49.00 1244.6	4.75 120.7	38.00 965.2	44.50 1130.3	2.38 60.5	28 2 1/4 16.25 412.8	16.25 412.8	16.00 406.4
36 900	51.75 1314.5	4.88 124.0	40.25 1022.4	47.00 1193.8	2.62 66.5	28 2 1/2 15.75 400.1	16.75 425.5	15.50 393.7

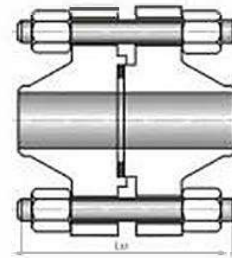
Class 900LB

NPS	O	C	R	B	D	Bolt	L	Lm
in mm	in mm	in mm	in mm	in mm	in mm	QTY Diam	in mm	in mm
2 50	8.50 215.9	1.50 38.1	3.62 91.9	6.50 165.1	1.00 25.4	8 7/8 5.75 146.1	5.75 146.1	5.50 139.7
2 1/2 65	9.62 244.3	1.62 41.1	4.12 104.6	7.50 190.5	1.12 28.4	8 1 6.25 158.8	6.25 158.8	6.00 152.4
3 80	9.50 241.3	1.50 38.1	5.00 127.0	7.50 190.5	1.00 25.4	8 7/8 5.75 146.1	5.75 146.1	5.50 139.7
4 100	11.50 292.1	1.75 44.5	6.19 157.2	9.25 235.0	1.25 31.8	8 1 1/4 6.75 171.5	6.75 171.5	6.50 165.1
5 125	13.75 349.3	2.00 50.8	7.31 185.7	11.00 279.4	1.38 35.1	8 1 1/4 7.50 190.5	7.50 190.5	7.25 184.2
6 150	15.00 381.0	2.19 55.6	8.50 215.9	12.50 317.5	1.25 31.8	12 1 1/4 7.50 190.5	7.75 196.9	7.25 184.2
8 200	18.50 469.9	2.50 63.5	10.62 269.7	15.50 393.7	1.50 38.1	12 1 1/4 8.75 222.3	8.75 222.3	8.50 215.9
10 250	21.50 546.1	2.75 69.9	12.75 323.9	18.50 469.9	1.50 38.1	16 1 1/4 9.25 235.0	9.25 235.0	9.00 228.6
12 300	24.00 609.6	3.12 79.2	15.00 381.0	21.00 533.4	1.50 38.1	20 1 1/4 10.00 254.0	10.00 254.0	9.75 247.7
14 350	25.25 641.4	3.38 85.9	16.25 412.8	22.00 558.8	1.62 41.1	20 1 1/2 10.75 273.1	11.00 279.4	10.50 266.7
16 400	27.75 704.9	3.50 88.9	18.50 469.9	24.25 616.0	1.75 44.5	20 1 1/2 11.25 285.8	11.50 292.1	11.00 279.4
18 450	31.00 787.4	4.00 101.6	21.00 533.4	27.00 685.8	2.00 50.8	20 1 1/2 12.75 323.9	13.25 336.6	12.50 317.5
20 500	33.75 857.3	4.25 108.0	23.00 584.2	29.50 749.3	2.12 53.8	20 2 13.75 349.3	14.25 362.0	13.50 342.9
24 600	41.00 1041.4	5.50 139.7	27.25 692.2	35.50 901.7	2.62 66.5	20 2 1/2 17.25 438.2	18.00 457.2	17.00 431.8

- a) NPS 24" and smaller flanged ends designed by ANSI B16.5. NPS 26" and larger designed by MSS SP-44.
b) Flanged of 600LB and 900LB with the raised face of 0.25\"/>



ANSI Class 600LB/900LB
0.25(6.4mm) Raised Face Joint



ANSI Class 1500LB/2500LB
Male & Female

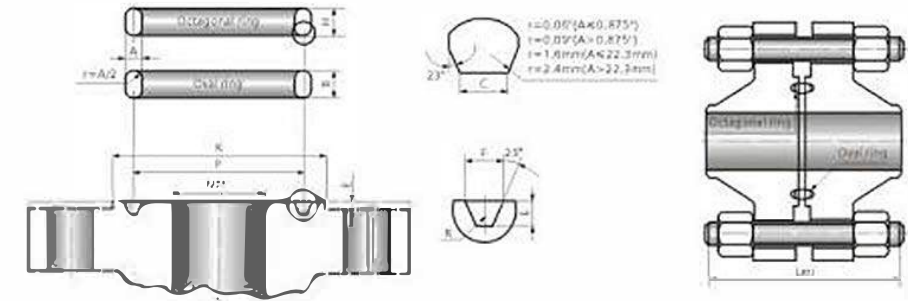
Class 1500LB

NPS	O	C	R	B	D	Bolt	L	Lm	Lm
in	mm	in	mm	in	mm	QTY	mm	in	mm
2	50	8.50	215.9	1.50	38.1	3.62	91.9	6.50	165.1
2 1/2	65	9.62	244.3	1.62	41.1	4.12	104.6	7.50	190.5
3	80	10.50	266.7	1.88	47.8	5.00	127.0	8.00	203.2
4	100	12.25	311.2	2.12	53.8	6.19	157.2	9.50	241.3
5	125	14.75	374.7	2.88	73.2	7.31	185.7	11.50	292.1
6	150	15.50	393.7	3.25	82.6	8.50	215.9	12.50	317.5
8	200	19.00	482.6	3.62	91.9	10.62	269.7	15.50	393.7
10	250	23.00	584.2	4.25	108.0	12.75	323.9	19.00	482.6
12	300	26.50	673.1	4.88	124.0	15.00	381.0	22.50	571.5
14	350	29.50	749.3	5.25	133.4	16.25	412.8	25.00	635.0
16	400	32.50	825.5	5.75	146.1	18.50	469.9	27.75	704.9
18	450	36.00	914.4	6.38	162.1	21.00	533.4	30.50	774.7
20	500	38.75	984.3	7.00	177.8	23.00	584.2	32.75	831.9
24	600	46.00	1168.4	8.00	203.2	27.25	692.2	39.00	990.6

Class 2500LB

NPS	O	C	R	B	D	Bolt	L	Lm	Lm
in	mm	in	mm	in	mm	QTY	mm	in	mm
2	50	9.25	235.0	2.00	50.8	3.62	91.9	6.75	171.5
2 1/2	65	10.50	266.7	2.25	57.2	4.12	104.6	7.75	196.9
3	80	12.00	304.8	2.62	66.5	5.00	127.0	9.00	228.6
4	100	14.00	355.6	3.00	76.2	6.19	157.2	10.75	273.1
5	125	16.50	419.1	3.62	91.9	7.31	185.7	12.75	323.9
6	150	19.00	482.6	4.25	108.0	8.50	215.9	14.50	368.3
8	200	21.75	552.5	5.00	127.0	10.62	269.7	17.25	438.2
10	250	26.50	673.1	6.50	165.1	12.75	323.9	21.25	539.8
12	300	30.00	762.0	7.25	184.2	15.00	381.0	24.38	619.3

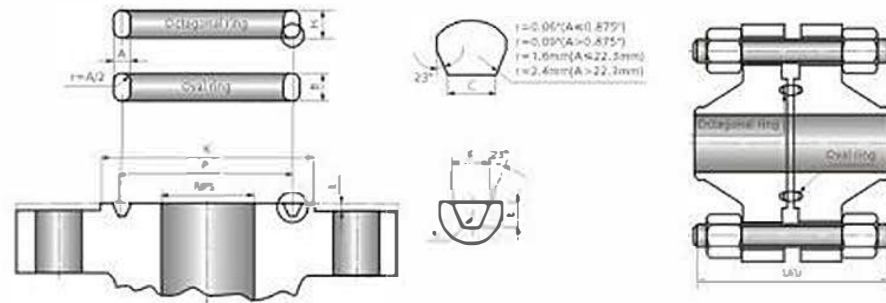
- a) NPS 24" and smaller flanged ends designed by ANSI B16.5.
b) Flanged of 1500lb and 2500lb with the raised face of 0.25(6.4mm) is added while excluded by the smallest flange of thickness C.
c) The length Lm of the double-end bolt doesn't include the terminal length.
d) Flange gasket of the matching flange ASME B16.20.



Ring-joint Flanged End

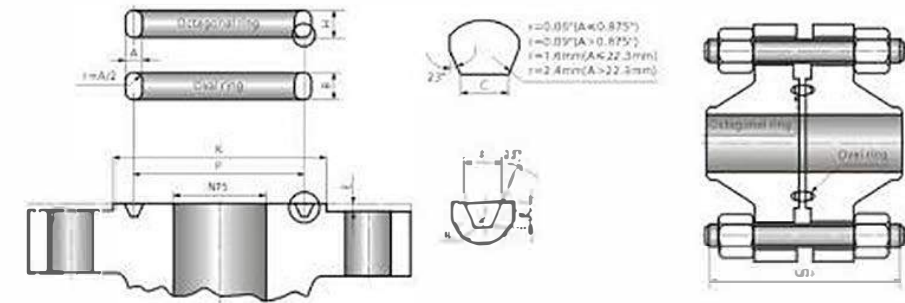
1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ANSI Class-LB						Annular groove									
150 300 600 900 1500 2500						150LB 300/600LB 900LB 1500LB 2500LB									
NPS						K									
No.						P E F R									
						in mm in mm in mm in mm									
2						R22	3.250	82.55	0.250	6.35	0.344	8.74	0.03	0.76	4.00 101.60
	2	2				R23	3.250	82.55	0.312	7.92	0.469	11.91	0.03	0.76	4.25 107.95
			2			R24	3.750	95.25	0.312	7.92	0.469	11.91	0.03	0.76	4.88 123.95
				2		R26	4.000	101.60	0.312	7.92	0.469	11.91	0.03	0.76	5.00 127.00
						R25	4.000	101.60	0.250	6.35	0.344	8.74	0.03	0.76	4.75 120.65
2 1/2	2 1/2	2 1/2				R26	4.000	101.60	0.312	7.92	0.469	11.91	0.03	0.76	5.00 127.00
			2 1/2			R27	4.250	107.95	0.312	7.92	0.469	11.91	0.03	0.76	5.38 136.65
				2 1/2		R28	4.375	111.13	0.375	9.53	0.531	13.49	0.03	0.76	5.88 149.35
3						R29	4.500	114.30	0.250	6.35	0.344	8.74	0.03	0.76	5.25 133.35
	3	3	3			R31	4.875	123.83	0.312	7.92	0.469	11.91	0.03	0.76	5.75 146.05
				3		R32	5.000	127.00	0.375	9.53	0.531	13.49	0.06	1.52	6.62 168.15
4						R36	5.875	149.23	0.250	6.35	0.344	8.74	0.03	0.76	6.75 171.45
	4	4	4			R37	5.875	149.23	0.312	7.92	0.469	11.91	0.03	0.76	6.88 174.75
				4		R38	6.188	157.18	0.438	11.13	0.656	16.66	0.06	1.52	8.00 203.20
					4	R39	6.375	161.93	0.312	7.92	0.469	11.91	0.03	0.76	7.62 193.55
5						R40	6.750	171.45	0.500	12.70	0.781	19.84	0.06	1.52	7.62 193.55
	5	5	5			R41	7.125	180.98	0.312	7.92	0.469	11.91	0.03	0.76	8.25 209.55
				5		R42	7.500	190.50	0.500	12.70	0.781	19.84	0.06	1.52	9.50 241.30
					5	R44	7.625	193.63	0.312	7.92	0.469	11.91	0.03	0.76	9.00 228.60
6						R43	7.625	193.63	0.250	6.35	0.344	8.74	0.03	0.76	8.62 218.95
	6	6	6			R45	8.312	211.12	0.312	7.92	0.469	11.91	0.03	0.76	9.50 241.30
				6		R46	8.312	211.12	0.375	9.53	0.531	13.49	0.06	1.52	9.75 247.65
					6	R47	9.000	228.60	0.500	12.70	0.781	19.84	0.06	1.52	11.00 279.40
8						R48	9.750	247.65	0.250	6.35	0.344	8.74	0.03	0.76	10.75 273.05
	8	8	8			R49	10.625	269.88	0.312	7.92	0.469	11.91	0.03	0.76	11.88 301.75
				8		R50	10.625	269.88	0.438	11.13	0.656	16.66	0.06	1.52	12.50 317.50
					8	R51	11.000	279.40	0.562	14.27	0.906	23.01	0.06	1.52	13.38 339.85

- a) Please to see flange ends for other connection dimension.
b) Flange metal ring gasket of the matching flange ASME B16.20.
c) For the specification of NPS 2-2 1/2" of 900lb will adopt the dimension of 1500lb.
d) The length Lm of the double-end bolt doesn't include the terminal length.



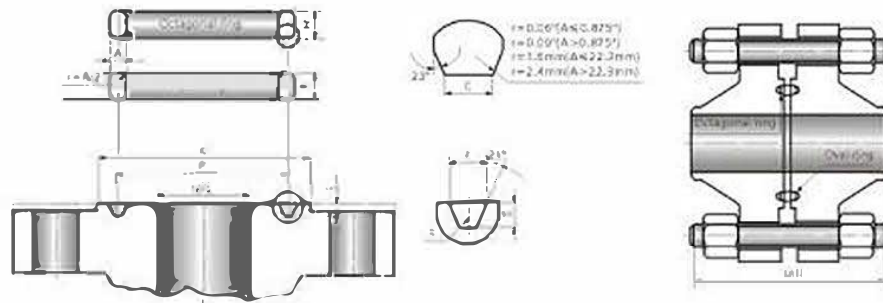
Ring-joint Flanged End																
1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
ANSI Class-LB						Annular groove										
150	300	600	900	1500	2500	No.	P	E	F	R	K					
NPS							in	mm	in	mm	in	mm	in	mm	in	mm
10						R52	12.000	304.80	0.250	6.35	0.344	8.74	0.03	0.76	13.00	330.20
10	10	10				R53	12.750	323.85	0.312	7.92	0.469	11.91	0.03	0.76	14.00	355.60
			10			R54	12.750	323.85	0.438	11.13	0.656	16.66	0.06	1.52	4.62	371.35
			10			R55	13.500	342.90	0.688	17.48	1.188	30.18	0.09	2.29		16.75 425.45
12						R56	15.000	381.00	0.250	6.35	0.344	8.74	0.03	0.76	16.00	406.40
12	12	12				R57	15.000	381.00	0.312	7.92	0.469	11.91	0.03	0.76	16.25	412.75
			12			R58	15.000	381.00	0.562	14.27	0.906	23.01	0.06	1.52	17.25	438.15
			12			R59	16.000	406.40	0.688	17.48	1.312	33.32	0.09	2.29		19.50 495.30
14						R59	15.625	396.88	0.250	6.35	0.344	8.74	0.03	0.76	16.75	425.45
14	14					R61	16.500	419.10	0.312	7.92	0.469	11.91	0.03	0.76	18.00	457.20
		14	14			R62	16.500	419.10	0.438	11.13	0.656	16.66	0.06	1.52	19.25	489.95
						R63	16.500	419.10	0.625	15.88	1.052	26.97	0.09	2.29		
16						R64	17.875	454.03	0.250	6.35	0.344	8.74	0.03	0.76	19.00	482.60
16	16					R65	18.500	469.90	0.312	7.92	0.469	11.91	0.03	0.76	20.00	508.00
		16				R66	18.500	469.90	0.438	11.13	0.656	16.66	0.06	1.52	20.62	523.75
		16				R67	18.500	469.90	0.688	17.48	1.188	30.18	0.09	2.29	21.50	546.10
18						R68	20.375	517.53	0.250	6.35	0.344	8.74	0.03	0.76	21.50	546.10
18	18					R69	21.000	533.40	0.312	7.92	0.469	11.91	0.03	0.76	22.62	574.55
		18				R70	21.000	533.40	0.500	12.70	0.781	19.84	0.06	1.52	23.38	593.85
		18				R71	21.000	533.40	0.688	17.48	1.188	30.18	0.09	2.29	24.12	612.66
20						R72	22.000	558.80	0.250	6.35	0.344	8.74	0.03	0.76	23.50	596.90
20	20					R73	23.000	584.20	0.375	9.53	0.531	13.49	0.06	1.52	25.00	635.00
		20				R74	23.000	584.20	0.500	12.70	0.781	19.84	0.06	1.52	25.50	647.70
		20				R75	23.000	584.20	0.688	17.48	1.312	33.32	0.09	2.29	26.50	673.10
24						R76	26.500	673.10	0.250	6.35	0.344	8.74	0.03	0.76	28.00	711.20
24	24					R77	27.250	692.15	0.438	11.13	0.656	16.66	0.06	1.52	29.50	749.30
		24				R78	27.250	692.15	0.625	15.88	1.062	26.97	0.09	2.29	30.38	771.65
		24				R79	27.250	692.15	0.812	20.62	1.438	36.53	0.09	2.29	31.25	793.75

- a) Please to see flange ends for other connection dimension.
b) Flange metal ring gasket of the matching flange ASME B16.20.
c) For the specification of NPS 2-2 1/2" of 900LB will adopt the dimension of 1500LB.
d) The length L₁ of the double-end bolt doesn't include the terminal length.



Ring-joint Flanged End																
1	2	4	5	6	7	8	25	26	27	28	29	30	31	32	33	34
ANSI Class-LB						Metal joint ring										
150	300	600	900	1500	2500	No.	A	B	H	C	K					
NPS							in	mm	in	mm	in	mm	in	mm	in	mm
2						R22	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	3.75	95.25
2	2					R23	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	4.00	101.60
		2				R24	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75		5.75 146.05
		2				R26	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75		7.00 177.80
2 1/2						R25	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.00	101.60
2 1/2	2 1/2					R26	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	4.50	114.30
		2 1/2				R27	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75		4.75 120.65
		2 1/2				R28	0.500	12.70	0.69	17.53	0.69	17.53	0.341	8.66		6.25 158.75
3						R29	0.313	7.95	0.69	17.53	0.50	12.70	0.206	5.23	4.00	101.60
3	3	3				R31	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	4.75	120.65
		3				R32	0.500	12.70	0.75	19.05	0.69	17.53	0.341	8.66	5.00	127.00
		3				R35	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	5.75	146.05
4						R36	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.00	101.60
4	4	4				R37	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	5.00	127.00
		4				R38	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49	5.75	146.05
		4				R39	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	6.75	171.45
5						R40	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.25	107.95
5	5	5				R41	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	5.25	133.35
		5				R42	0.750	19.05	1.00	25.40	0.94	23.88	0.465	12.32	6.50	165.10
		5				R44	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	7.50	190.50
6						R43	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.50	114.30
6	6	6				R45	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	5.50	139.70
		6				R46	0.500	12.70	0.75	19.05	0.69	17.53	0.341	8.66	6.75	171.45
		6				R47	0.750	19.05	1.00	25.40	0.94	23.88	0.465	12.32	7.75	196.85
8						R48	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	4.75	120.65
8	8	8				R49	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	6.00	152.40
		8				R50	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49	7.75	196.85
		8				R51	0.875	22.23	1.13	28.70	1.06	26.92	0.583	14.81	8.75	222.25

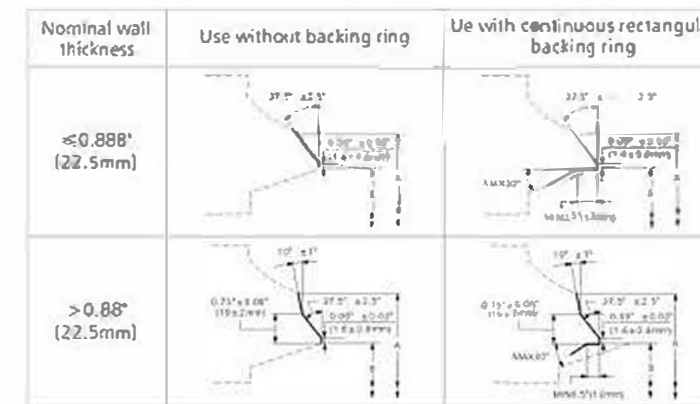
- a) Please to see flange ends for other connection dimension.
b) Flange metal ring gasket of the matching flange ASME B16.20.
c) For the specification of NPS 2-2 1/2" of 900LB will adopt the dimension of 1500LB.
d) The length L₁ of the double-end bolt doesn't include the terminal length.



Ring-joint Flanged End

1	2	4	5	6	7	8	25	26	27	28	29	30	31	32	33	34
ANSI Class-LB							Metal joint ring									
150 300 600 900 1500 2500							150LB 300LB 600LB 900LB 1500LB 2500LB									
NPS							K									
No.							A B H C									
in mm							in mm in mm in mm in mm									
10							R52	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.00 127.00
	10	10	10				R53	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	6.75 171.45
				10			R54	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49	13.50
					10		R55	1.125	28.58	1.44	36.58	1.38	35.05	0.780	19.81	20.00 508.00
12							R56	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.25 133.35
	12	12	12				R57	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	7.25 184.15
				12			R58	0.875	22.23	1.13	28.70	1.06	26.92	0.583	14.81	15.25 387.35
					12		R60	1.250	31.75	1.56	39.62	1.50	38.10	0.879	22.23	22.00 558.80
14							R59	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.75 146.05
	14	14					R61	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	7.50 190.50
				14			R62	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49	11.00 279.40
					14		R63	1.000	25.40	1.31	33.27	1.25	31.75	0.681	17.30	16.75 425.45
16							R64	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	5.75 146.05
	16	16					R65	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	8.00 203.20
				16			R66	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49	11.50 292.10
					16		R67	1.125	28.58	1.44	36.58	1.38	35.05	0.780	19.81	18.50 469.90
18							R68	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	6.25 158.75
	18	18					R69	0.438	11.13	0.69	17.53	0.63	16.00	0.305	7.75	8.25 209.55
				18			R70	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32	13.25 336.55
					18		R71	1.125	28.58	1.44	36.58	1.38	35.05	0.780	19.81	20.75 527.05
20							R72	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	6.75 171.45
	20	20					R73	0.500	12.70	0.75	19.05	0.69	17.53	0.341	8.66	8.75 222.25
				20			R74	0.750	19.05	1.00	25.40	0.94	23.88	0.485	12.32	14.25 361.95
					20		R75	1.250	31.75	1.56	39.62	1.50	38.10	0.879	22.33	22.25 565.15
24							R76	0.313	7.95	0.56	14.22	0.50	12.70	0.206	5.23	7.25 184.15
	24	24					R77	0.625	15.88	0.88	22.35	0.81	20.57	0.413	10.49	10.00 254.00
				24			R78	1.000	25.40	1.31	33.27	1.25	31.75	0.681	17.30	18.00 457.20
					24		R79	1.375	34.93	1.75	44.45	1.63	41.40	0.977	24.82	25.50 647.70

- a) Please to see flange ends for other connection dimension.
b) Flange metal ring gasket of the matching flange ASME B16.20.
c) For the specification of NPS 2-2 1/2" of 900LB will adopt the dimension of 1500LB.
d) The length Lm of the double-end bolt doesn't include the terminal length.



Class 150 and 300 valve which size equal 10 12 inch and smaller and 12 inch valves which contract with standard wall pipe (0.375" thick-ness) are regularly machined. Unless have other requirement.
Order for class 150 and 300 butt-welding valves which size equal to 14 and larger and class 400 and higher valve for all sizes. it should specified the diameter of the pipe that contract with valves. If need backing ring, indicate specification.
● the types of weld end preparation would be furnished of specified.

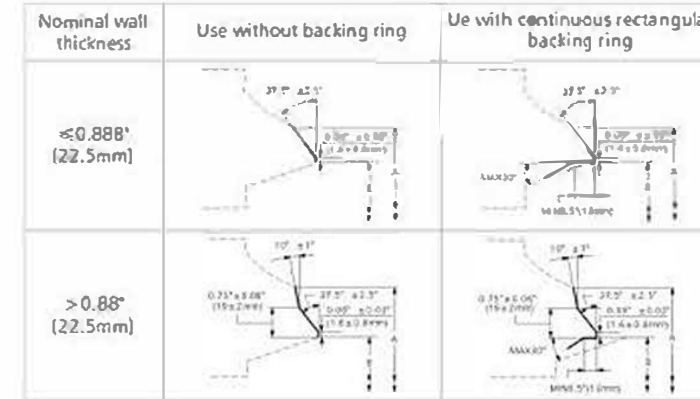
ASME B16.25 Butt-welded End

1		2	3		4		5		6		7	
Nominal pipe diameter		Wall thickness of pipe number	Outside diameter of welding end				Nominal inside diameter of pipe	Machined inside diameter of pipe	Nominal wall thickness			
NPS in	DN mm		Steel valve		Forged							
			A		A1		B		C		t	
			in	mm	in	mm	in	mm	in	mm	mm	mm
2 1/2	65	40	2.96	75	2.88	73.0	2.169	62.5	2.479	62.93	0.203	5.16
		80	2.96	75	2.88	73.0	2.323	59	2.351	59.69	0.276	7.01
		160	2.96	75	2.88	73.0	2.215	54	2.178	55.28	0.375	9.53
3	80	XXS	2.96	75	2.88	73.0	1.771	45	1.868	47.43	0.552	14.02
		40	3.59	91	3.50	88.9	3.068	78	3.081	78.25	0.216	5.49
		80	3.59	91	3.50	88.9	2.900	73.5	2.934	74.53	0.300	7.62
3 1/2	90	160	3.59	91	3.50	88.9	2.624	66.5	2.692	68.38	0.438	11.13
		XXS	3.59	91	3.50	88.9	2.300	58.5	2.409	61.19	0.600	15.24
		40	4.12	105	4.00	101.6	3.548	90	3.564	90.52	0.226	5.74
		80	4.12	105	4.00	101.6	3.364	85.5	3.402	86.42	0.318	8.08
		40	4.62	117	4.50	114.3	4.026	102	4.044	102.73	0.237	6.02
		80	4.62	117	4.50	114.3	3.826	97	3.869	98.28	0.337	8.56
4	100	120	4.62	117	4.50	114.3	3.624	92	3.692	93.78	0.438	11.13
		160	4.62	117	4.50	114.3	3.438	87.5	3.530	89.65	0.531	13.49
		XXS	4.62	117	4.50	114.3	3.152	80	3.279	83.30	0.674	17.12
5	125	40	5.69	144	5.56	141.3	5.047	128	5.070	128.80	0.258	6.55
		80	5.69	144	5.56	141.3	4.813	122	4.866	123.58	0.375	9.53
		120	5.69	144	5.56	141.3	4.563	116	4.647	118.04	0.500	12.70
		160	5.69	144	5.56	141.3	4.313	109.5	4.428	112.47	0.625	15.88
		XXS	5.69	144	5.56	141.3	4.063	103	4.209	106.92	0.750	19.05
		40	6.78	172	6.62	168.3	6.065	154	6.094	154.82	0.280	7.11
6	150	80	6.78	172	6.62	168.3	5.761	146.5	5.828	148.06	0.432	10.97
		120	6.78	172	6.62	168.3	5.501	140	5.600	142.29	0.562	14.27
		160	6.78	172	6.62	168.3	5.187	132	5.326	135.31	0.719	18.26
		XXS	6.78	172	6.62	168.3	4.897	124.5	5.072	128.85	0.864	21.95
		40	8.78	223	8.62	219.1	7.981	203	8.020	203.75	0.322	8.18
		60	8.78	223	8.62	219.1	7.813	198.5	7.873	200.02	0.406	10.31
8	200	80	8.78	223	8.62	219.1	7.625	193.5	7.709	195.84	0.500	12.70
		100	8.78	223	8.62	219.1	7.437	189	7.544	191.65	0.594	15.09
		120	8.78	223	8.62	219.1	7.187	182.5	7.326	186.11	0.719	18.26
		140	8.78	223	8.62	219.1	7.001	178	7.163	181.98	0.812	20.62
		XXS	8.78	223	8.62	219.1	6.875	174.5	7.053	179.16	0.875	22.23
		160	8.78	223	8.62	219.1	6.813	173	6.998	177.79	0.906	23.01
10	250	40	10.94	278	10.75	273.0	10.020	254.5	10.070	255.74	0.365	9.27
		60	10.94	278	10.75	273.0	9.750	247.5	9.834	249.74	0.500	12.70
		80	10.94	278	10.75	273.0	9.562	243	9.670	245.55	0.594	15.09
		100	10.94	278	10.75	273.0	9.312	236.5	9.451	240.01	0.719	18.26
		120	10.94	278	10.75	273.0	9.062	230	9.232	234.44	0.844	21.44
		140	10.94	278	10.75	273.0	8.750	222	8.959	227.51	1.000	25.40
		160	10.94	278	10.75	273.0	8.500	216	8.740	221.95	1.125	28.58

ASME B16.25 Butt-welded End

1 Nominal pipe diameter NPS in		2 Wall thickness of pipe number	3 Outside diameter of welding end Steel valve				4 Nominal inside diameter of pipe		5 Machined inside diameter of pipe		6 Nominal wall thickness	
DN mm			A1 mm				B mm		C mm		t mm	
12	300	STD	12.97	329	12.75	323.8	12.000	305	12.053	306.08	0.375	9.53
		40	12.97	329	12.75	323.8	11.938	303	11.999	304.72	0.406	10.31
		XS	12.97	329	12.75	323.8	11.750	298.5	11.834	300.54	0.500	12.70
		60	12.97	329	12.75	323.8	11.626	295	11.725	297.79	0.562	14.27
		80	12.97	329	12.75	323.8	11.374	289	11.505	292.17	0.688	17.48
		100	12.97	329	12.75	323.8	11.062	281	11.232	285.24	0.844	21.44
		120	12.97	329	12.75	323.8	10.750	273	10.959	278.31	1.000	25.40
		140	12.97	329	12.75	323.8	10.500	266.5	10.740	272.75	1.125	28.58
14	350	160	12.97	329	12.75	323.8	10.126	257	10.413	264.45	1.312	33.32
		STD	14.25	362	14.00	355.6	13.250	336.5	13.303	337.88	0.375	9.53
		40	14.25	362	14.00	355.6	13.124	333.5	13.192	335.08	0.438	11.13
		XS	14.25	362	14.00	355.6	13.000	330	13.084	332.34	0.500	12.70
		60	14.25	362	14.00	355.6	12.812	325.5	12.920	328.15	0.594	15.09
		80	14.25	362	14.00	355.6	12.500	317.5	12.646	321.22	0.750	19.05
		100	14.25	362	14.00	355.6	12.124	308	12.318	312.86	0.938	23.83
		120	14.25	362	14.00	355.6	11.812	300	12.044	305.93	1.094	27.79
16	400	140	14.25	362	14.00	355.6	11.500	292	11.771	299.00	1.250	31.75
		160	14.25	362	14.00	355.6	11.188	284	11.498	292.07	1.406	35.71
		STD	16.25	413	16.00	406.4	15.250	387.5	15.303	388.68	0.375	9.53
		40	16.25	413	16.00	406.4	15.000	381	15.094	383.14	0.500	12.70
		60	16.25	413	16.00	406.4	14.688	373	14.811	376.21	0.562	14.27
		80	16.25	413	16.00	406.4	14.312	363.5	14.482	367.84	0.844	21.44
		100	16.25	413	16.00	406.4	13.938	354	14.155	359.53	1.031	26.19
		120	16.25	413	16.00	406.4	13.562	344.5	13.826	351.18	1.219	30.96
18	450	140	16.25	413	16.00	406.4	13.124	333.5	13.442	341.43	1.438	36.53
		160	16.25	413	16.00	406.4	12.812	325.5	13.170	334.50	1.594	40.49
		STD	18.28	464	18.00	457.2	17.250	438	17.303	439.48	0.375	9.53
		40	18.28	464	18.00	457.2	17.000	432	17.084	433.91	0.500	12.70
		60	18.28	464	18.00	457.2	16.876	428.5	16.975	431.19	0.562	14.27
		80	18.28	464	18.00	457.2	16.500	419	16.646	422.82	0.750	19.05
		100	18.28	464	18.00	457.2	16.124	409.5	16.318	414.46	0.938	23.83
		120	18.28	464	18.00	457.2	15.688	398.5	15.936	404.78	1.156	29.36
20	500	140	18.28	464	18.00	457.2	15.250	387.5	15.553	395.03	1.375	34.93
		160	18.28	464	18.00	457.2	14.876	378	15.225	386.77	1.562	39.67
		STD	20.31	516	20.00	508.0	19.250	489	19.303	490.28	0.375	9.53
		40	20.31	516	20.00	508.0	19.000	482.5	19.084	484.74	0.500	12.70
		60	20.31	516	20.00	508.0	18.812	478	18.920	480.55	0.594	15.09
		80	20.31	516	20.00	508.0	18.376	467	18.538	470.88	0.812	20.62
		100	20.31	516	20.00	508.0	17.938	455.5	18.155	461.13	1.031	26.19
		120	20.31	516	20.00	508.0	17.438	443	17.717	450.02	1.281	32.54
22	550	140	20.31	516	20.00	508.0	17.000	432	17.334	440.29	1.500	38.10
		160	20.31	516	20.00	508.0	16.500	419	16.696	429.17	1.750	44.45
		STD	22.34	567	22.00	558.8	21.250	520	21.303	541.08	0.375	9.53
		40	22.34	567	22.00	558.8	21.000	513	21.084	535.51	0.500	12.70
		60	22.34	567	22.00	558.8	20.250	514	20.428	518.86	0.875	22.23
		80	22.34	567	22.00	558.8	19.750	502	19.990	507.75	1.125	28.58
		100	22.34	567	22.00	558.8	19.250	488.5	19.553	496.63	1.375	34.93
		120	22.34	567	22.00	558.8	18.750	476	19.115	485.52	1.625	41.28
24	600	140	22.34	567	22.00	558.8	18.250	464	18.678	474.41	1.875	47.63
		160	22.34	567	22.00	558.8	17.750	450.5	18.240	463.30	2.125	53.88

Note: 1) Forged machined component part
a) STD=Standard wall thickness
b) XS=Intensifying wall thickness
c) XXS=Double intensifying wall thickness.



Class 150 and 300 valve which size equal to 12 inch and smaller and 12 inch valves which contract with standard wall pipe (0.375\" wall thickness) are regularly machined. Unless have other requirement.
Order for class 150 and 300 butt-welding valves which size equal to 14 and larger and class 400 and higher valve for all sizes, it should specified the diameter of the pipe that contract with valves. If need backing ring, indicate specification.
● the types of weld end preparation would be furnished of specified.

ASME B16.25 Butt-welded End

1		2	3		4		5		6		7	
Nominal pipe diameter		Wall thickness of pipe number	Outside diameter of welding end				Nominal inside diameter of pipe		Machined inside diameter of pipe		Nominal wall thickness	
			Steel valve		Forged ¹							
NPS	DN		A		A1		B		C		t	
in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
24	600	STD	24.38	619	24.00	609.6	23.250	590.5	23.303	591.88	0.375	9.53
		XS	24.38	619	24.00	609.6	23.000	584	23.084	586.34	0.500	12.70
		30	24.38	619	24.00	609.6	22.876	581	22.975	583.59	0.562	14.27
		40	24.38	619	24.00	609.6	22.624	574.5	22.755	577.97	0.688	17.48
		60	24.38	619	24.00	609.6	22.062	560.5	22.263	565.49	0.969	24.61
		80	24.38	619	24.00	609.6	21.562	547.5	21.826	554.38	1.219	30.93
		100	24.38	619	24.00	609.6	20.938	532	21.280	540.49	1.531	38.89
		120	24.38	619	24.00	609.6	20.376	517.5	20.788	528.03	1.812	46.02
26	650	140	24.38	619	24.00	609.6	19.876	505	20.350	516.91	2.062	52.37
		160	24.38	619	24.00	609.6	19.312	490.5	19.857	504.37	2.344	59.54
		10	26.38	670	26.00	660.4	25.376	645.5	25.413	645.50	0.312	7.92
		20	26.38	670	26.00	660.4	25.000	635	25.084	637.14	0.500	12.70
		30	26.38	670	26.00	660.4	24.750	628.5	24.812	630.12	0.562	14.27
		40	26.38	670	26.00	660.4	24.438	621.5	24.500	623.62	0.625	15.88
		60	26.38	670	26.00	660.4	23.876	606.5	24.038	610.14	0.938	23.83
		80	26.38	670	26.00	660.4	23.312	591.5	23.484	603.66	1.219	30.93
28	700	100	26.38	670	26.00	660.4	22.750	576.5	22.922	581.16	1.500	38.10
		120	26.38	670	26.00	660.4	22.188	561.5	22.360	575.08	1.781	45.24
		10	28.38	721	28.00	711.2	27.376	695.5	27.413	696.30	0.312	7.92
		20	28.38	721	28.00	711.2	27.000	686	27.084	687.94	0.500	12.70
		30	28.38	721	28.00	711.2	26.750	679.5	26.865	682.37	0.625	15.88
		40	28.38	721	28.00	711.2	26.438	672.5	26.500	675.02	0.688	17.48
		60	28.38	721	28.00	711.2	25.876	657.5	26.038	661.04	0.969	24.61
		80	28.38	721	28.00	711.2	25.312	642.5	25.484	655.06	1.250	31.75
30	750	100	30.38	772	30.00	762.0	29.376	746	29.413	747.10	0.312	7.92
		20	30.38	772	30.00	762.0	29.000	736.5	29.084	738.74	0.500	12.70
		30	30.38	772	30.00	762.0	28.750	730	28.865	733.17	0.625	15.88
		40	30.38	772	30.00	762.0	28.438	723.5	28.500	726.02	0.688	17.48
		60	30.38	772	30.00	762.0	27.876	708.5	28.038	712.04	0.969	24.61
		80	30.38	772	30.00	762.0	27.312	693.5	27.484	706.06	1.250	31.75
		100	30.38	772	30.00	762.0	26.750	678.5	26.922	683.08	1.531	38.89
		120	30.38	772	30.00	762.0	26.188	663.5	26.360	676.00	1.812	46.02
32	800	10	32.50	825	32.00	812.8	31.376	797	31.413	797.90	0.312	7.92
		20	32.50	825	32.00	812.8	31.000	787.5	31.084	789.54	0.500	12.70
		30	32.50	825	32.00	812.8	30.750	781	30.865	783.97	0.625	15.88
		40	32.50	825	32.00	812.8	30.624	778	30.755	781.17	0.688	17.48
		60	32.50	825	32.00	812.8	30.062	763.5	30.234	768.69	0.969	24.61
		80	32.50	825	32.00	812.8	29.500	748.5	29.668	753.21	1.250	31.75
		100	32.50	825	32.00	812.8	28.938	733.5	29.106	742.73	1.531	38.89
		120	32.50	825	32.00	812.8	28.376	718.5	28.544	732.25	1.812	46.02
34	850	10	34.50	876	34.00	863.6	33.376	848	33.413	848.70	0.312	7.92
		20	34.50	876	34.00	863.6	33.000	838	33.084	840.34	0.500	12.70
		30	34.50	876	34.00	863.6	32.750	832	32.865	834.77	0.625	15.88
		40	34.50	876	34.00	863.6	32.624	828.5	32.755	831.97	0.688	17.48
		60	34.50	876	34.00	863.6	32.062	813.5	32.234	819.07	0.969	24.61
		80	34.50	876	34.00	863.6	31.500	798.5	31.668	803.59	1.250	31.75
		100	34.50	876	34.00	863.6	30.938	783.5	31.106	793.11	1.531	38.89
		120	34.50	876	34.00	863.6	30.376	768.5	30.544	777.63	1.812	46.02
36	900	10	36.50	927	36.00	914.4	35.376	898.5	35.413	899.50	0.312	7.92
		20	36.50	927	36.00	914.4	35.000	889	35.084	891.14	0.500	12.70
		30	36.50	927	36.00	914.4	34.750	882.5	34.865	885.57	0.625	15.88
		40	36.50	927	36.00	914.4	34.500	876.5	34.616	880.02	0.750	19.05
		60	36.50	927	36.00	914.4	33.938	861.5	34.054	865.54	0.969	24.61
		80	36.50	927	36.00	914.4	33.376	846.5	33.492	850.06	1.250	31.75
		100	36.50	927	36.00	914.4	32.812	831.5	32.930	835.58	1.531	38.89
		120	36.50	927	36.00	914.4	32.250	816.5	32.368	820.10	1.812	46.02