Design

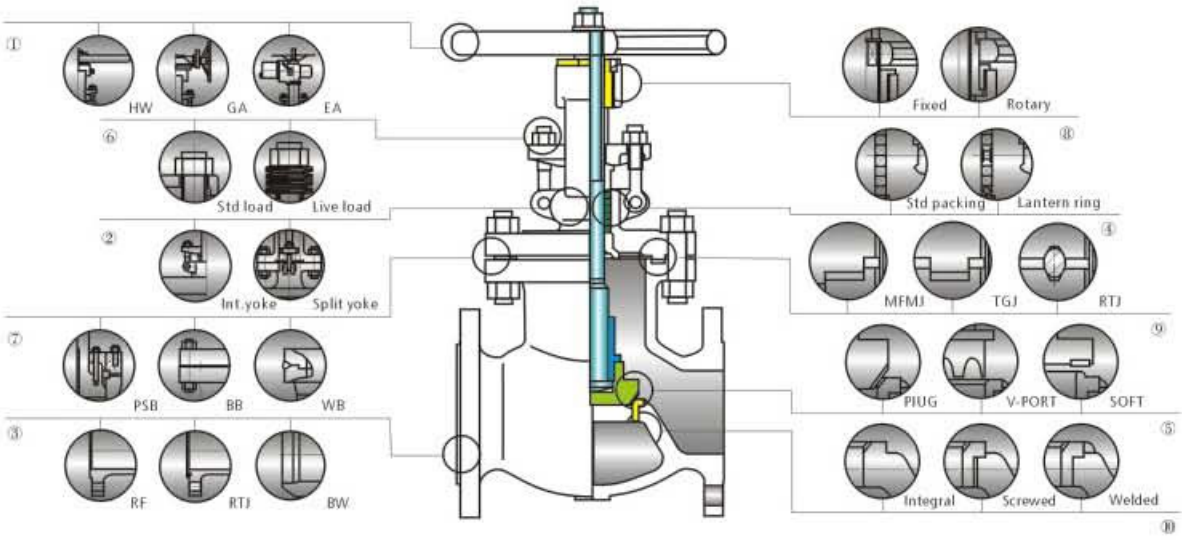
FBK cast steel globe valves are designed and manufactured to provide maximum service life and dependability. All globe valves are full bore and meet the design requirements of BS 1873. Valves are available in a complete range of body/bonnet materials and trim.

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 requirementes.

Available Modifications

Trim Changes
End Connection Modifications
Packing & Gasket Changes
Operator Type
Extended Stem
Pressure Equalizing
Customer's Specified Coatings
Changable Welded-end Bore
Oxgyen & Chlorine Cleaning & Packaging



①Operation

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

②OS & Y

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

③End Connections

RTJ or butt-welded end is for pipe connection.

④Lantern Ring And Double Packing Set

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

⑤Disc

Plug disc is 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.

⑥Live 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.

⑦Bolted 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.

⑧Yoke Sleeve(YS)

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

⑨Body-to-Bonnet Joint

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

⑩Seat 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

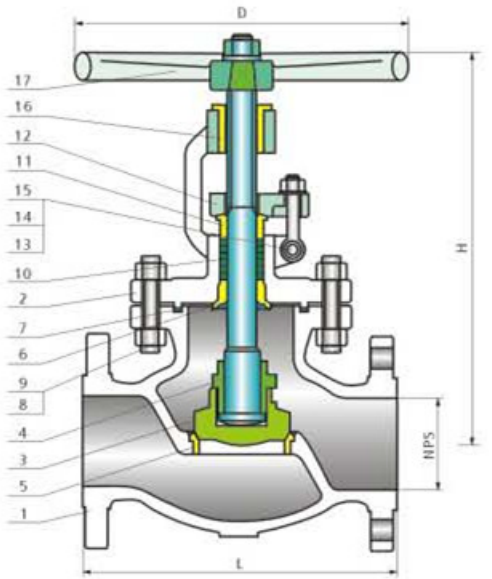
Design Description

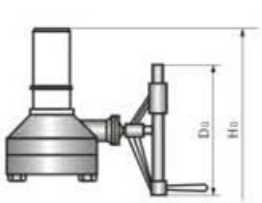
Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10" & above

Main Parts Materials

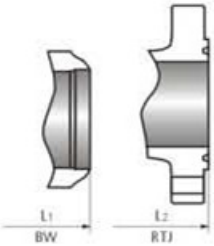
NO	Part Name	ASTM Material		
		Carbon Steel	Stainless Steel	Cryogenic Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Disc	A105+CR13	A182-F316+HF	A350-LF2+CR13
4	Stem	A182-F6a	A182-F316	A182-F6a
5	Seat Ring	Integral+CR13	Integral+HF	Integral+CR13
6	Stem Backseat	A273-420	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 materialequal to or better than the body/bonnet material with facing as shown.





Gear Operator



Dimensions Data — ANSI Class 150LB

Size		in	2	2½	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	1650	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

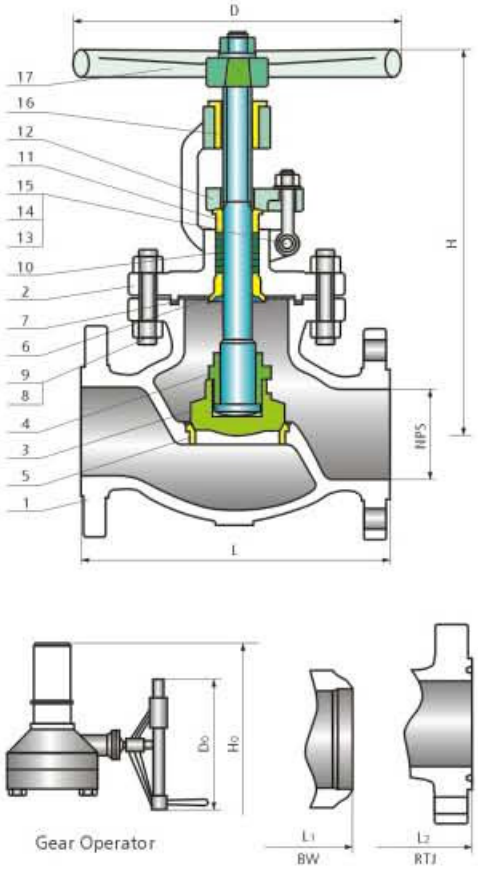
Design Description

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 materialequal to or better than the body/bonnet material with facing as shown.



Dimensions Data — ANSI Class 300LB

Size		in	2	2½	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	-	-	-	-
Ho		mm	-	-	-	-	690	950	990	1155	1155	1325	1473	1574
D		mm	220	250	280	350	450	500	600	700	-	-	-	-
Do		mm	-	-	-	-	310	460	460	460	600	600	720	720
Weight	H.W	Kg	29	44	59	87	162	281	355	575	-	-	-	-
	G.O	Kg	-	-	-	-	177	389	409	635	880	1300	1600	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

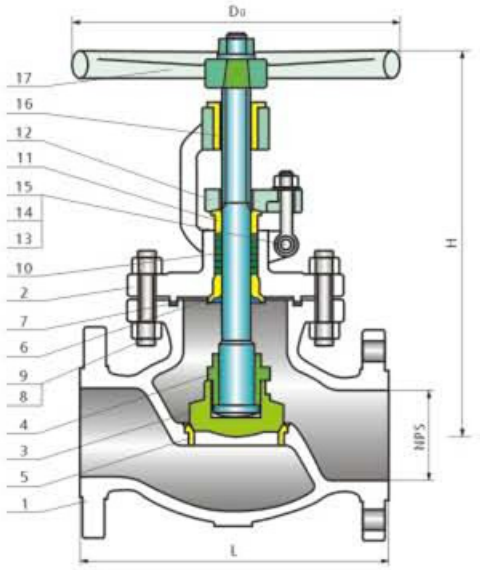
Design Description

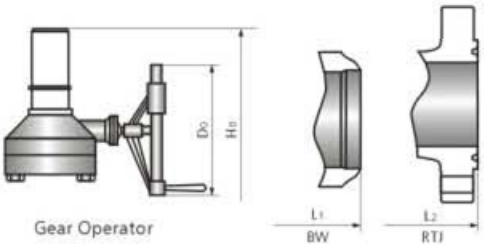
Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10" & above

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 materialequal to or better than the body/bonnet material with facing as shown.





Gear Operator

Dimensions Data — ANSI Class 600LB

Size		in	2	2½	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	-	-	-	-
Ho		mm	-	-	-	575	975	1120	1219	1570	1800	1930
D		mm	280	280	300	400	500	550	-	-	-	-
Do		mm	-	-	-	310	460	460	600	600	760	760
Weight	H.W	Kg	35	42	66	117	263	469	-	-	-	-
	G.O	Kg	-	-	-	148	334	544	875	1280	2510	3350

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

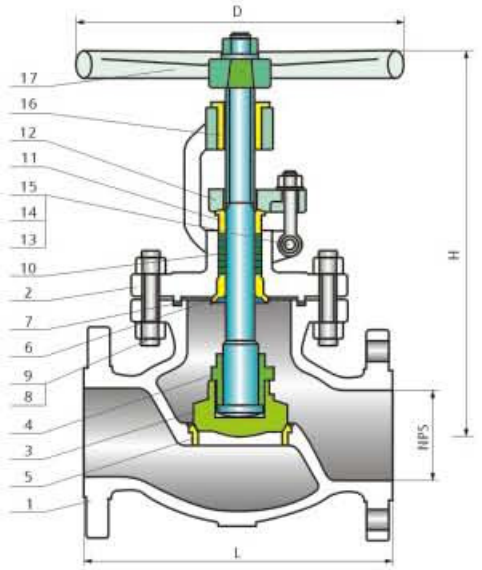
Design Description

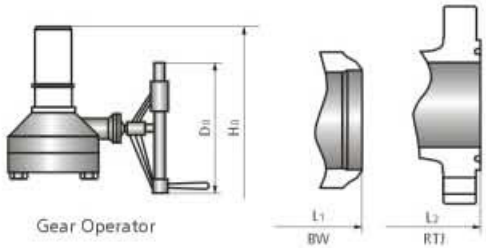
Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10" & above

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-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 materialequal to or better than the body/bonnet material with facing as shown.





Gear Operator

Dimensions Data — ANSI Class 900LB

Size		in	2	2½	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	-
L2(RTJ)		mm	371	422	384	460	613	740	841	-
H		mm	480	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

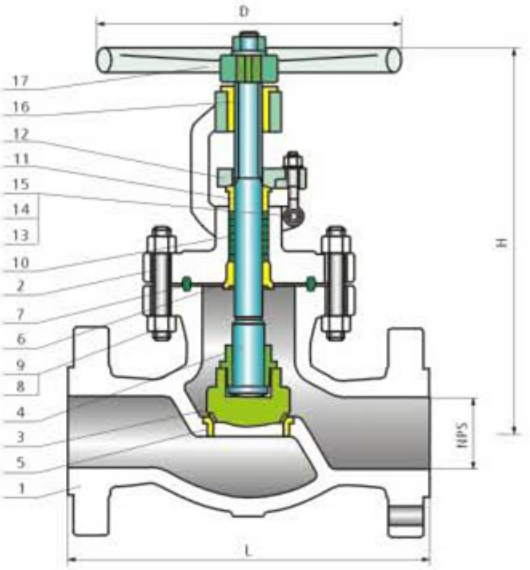
Design Description

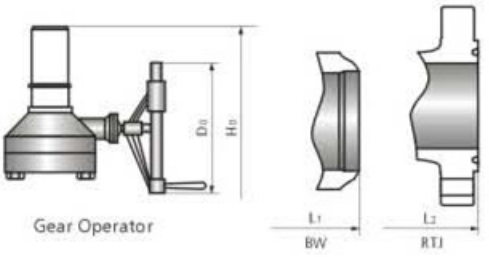
Straight Pattern Body Design
OS & Y Rising Stem
BB, Bolted Bonnet
Yoke Integral with Bonnet
Loose Disc
Plug Type Disc or Ball Type Disc
Renewable Seat Ring
Horizontal Service
Flanged or Butt Welded End
Impact Handwheel for 10" & above

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	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-CF8M	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 materialequal to or better than the body/bonnet material with facing as shown.





Gear Operator

Dimensions Data ANSI Class 1500LB

Size		in	2	2½	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	1280	1550

Dimensions Data ANSI Class 2500LB

Size		in	2	2½	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

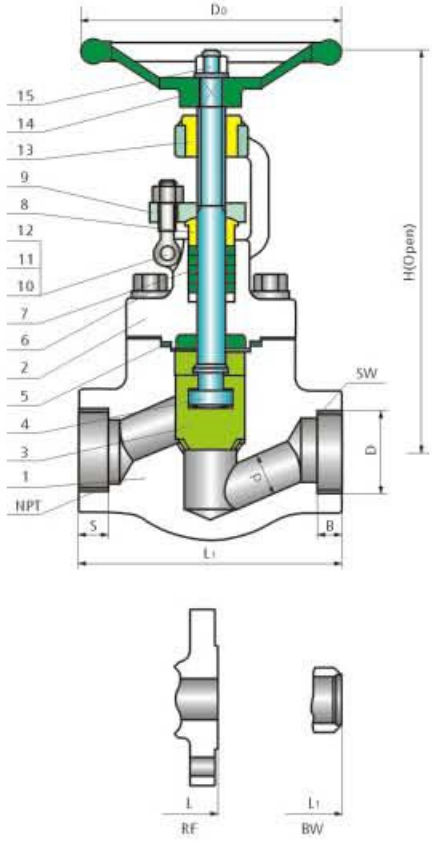
Design Description

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

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[1]	Graphite+304	Graphite+316	Graphite+304
6	Bonnet Stud	A193-B7	A193-B8M	A193-B16
7	Packing	Graphite		
8	Gland	A276-410	A276-316	A276-410
9	Gland Flange	A105	A182-F316	A182-F11
10	Eyebolt Pin	A276-410	A276-316	A276-410
11	Eyebolt	A193-B7	A193-B8M	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.



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

Size		L1[1]	Flange End			d	SW		NPT	H(Open)	D0	Weight[2](kg)	
			150LB	300LB	600LB		D	B	S				
in	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	2.8
1/2	15	79	108	152	165	9	21.8	9.6	13.6	164	100	5.6	3.4
3/4	20	92	117	178	190	13	27.1	12.7	13.9	164	100	7.8	4.7
1	25	111	127	203	216	17.5	33.8	12.7	17.3	203	125	12.5	9.2
1¼	32	120	140	216	229	23	42.6	12.7	18	224	160	17	10.5
1½	40	152	165	229	241	29	48.7	12.7	18.4	260	160	23.5	13.3
2	50	172	203	267	292	35	61.1	15.9	19.2	300	180	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

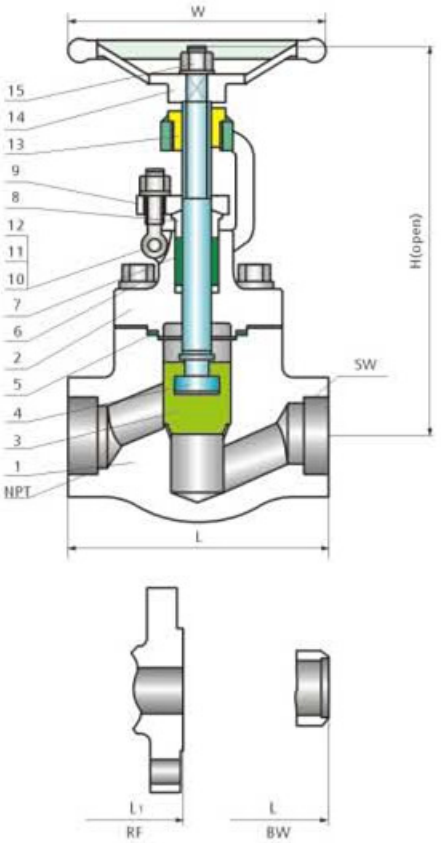
Design Description

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

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[1]	Graphite+304	Graphite+316	Graphite+304
6	Bonnet Stud		A193-B8M	
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-B8M	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.



Dimensions Data — ANSI Class 900LB/1500LB

Size Reduced Bore		L	L1	H(Open)	W	Weight(kg)	
in	mm	mm	mm	mm	mm	Bolted	Welded
3/8	10	92	-	171	100	2.2	2.0
1/2	15	111	216	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