



Cast Steel Valves



**FOR THE OIL, GAS, PETROCHEMICAL,
CHEMICAL AND POWER GENERATION INDUSTRIES**

Figure Numbers



Example:

12	GA	9	R	CB	5	Ga	-B
1	2	3	4	5	6	7	8

i.e. 12" OS&Y BB Gate Valve, Class 900, Raised Face Flange End, ASTM A216 WCB Body/Bonnet, Trim5, Bevel Gear Type A Actuator, with By Pass.

1 Valve Size

NPS	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"	40"	42"	48"
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1050	1200
Symbol	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36	40	42	48

2 Valve Type

Type	Gate	Globe	Swing Check	Y-Strainer
Symbol	GA	GL	CH	ST

3 Nominal Pressure

Class	150	300	600	900	1500	2500
Symbol	1	3	6	9	15	25

PN	16	25	40	63	100	160
Symbol	16	25	40	63	100	160

4 End Type

Type	Raised Face Flange	Ring Joint Flange	Groove Face Flange	Butt Welding End	Socket Welding End	Screwed End
Symbol	R	J	G	B	S	N

5 Body/Bonnet Material

Material	WCB	WC1	WC6	WC9	C5	C12	LCB	LCC	LC2	LC3	CF8	CF8M	CF3	CF3M	CF8C	CN7M
Symbol	CB	C1	C6	C9	C5	C12	LB	LC	L2	L3	F8	8M	F3	3M	8C	7M
Symbol Temperature	°C	-29 to 427	-29 to 468	-29 to 593	-29 to 649	-29 to 649	-46 to 343	-73 to 343	-101 to 343	-254 to 649	-254 to 649	-254 to 427	-254 to 454	-29 to 649	-29 to 316	
	°F	-20 to 800	-20 to 875	-20 to 1100	-20 to 1200	-20 to 1200	-50 to 650	-100 to 650	-150 to 650	-425 to 1200	-425 to 1200	-425 to 800	-425 to 850	-20 to 1200	-20 to 600	
ASTM	A216	A217				A352				A351						
Standard	150-600#	8	8				2,10,12				2,10,12					
Trim No.	900-2500#	5	5				16				16					

6 Trim Material

Trim Number	1	2	5	8	9	10	12	13	16	17	20
Symbol	1	2	5	8	9	10	12	13	16	17	20
Seat Surface	13Cr	304	HF	HF	Monel	316	HF	Alloy 20	HF	HF	Bronze
Disc Surface	13Cr	304	HF	13Cr	Monel	316	316	Alloy 20	HF	HF	Bronze
Stem	F6a	F304	F6a	F6a	Monel	F316	F316	B473	F316	F347	Bronze
Back Seat Ring	410	304	410	410	Monel	316	316	B473	316	347	Bronze

Note:

- Trim number 1 to 17 are same as API 600 table 3.
- HF: Hardfaced with Stellite 6 (Co-Cr-W alloy) or equivalent.
- B473: ASTM B473 N08020.
- The trim Symbol of Y-Strainer is none.

7 Valve Actuator

Type	Handwheel	Bevel Gear Type A	Bevel Gear Type B	Spur Gear Type C	Spur Gear Type D	Electrical Actuator	Pneumatic	Bare Stem
Symbol	None	Ga	Gb	Gc	Gd	E	P	B

8 Special Code

Description	Gate/Globe: OS&Y BB, Swing Check Type 1	Angel Type Globe	Swing Check Type2	Piston Check	Non Rising Stem	Pressure Seal
Symbol	None	A	T	I	N	P

Description	By Pass	Locking device	Stem Protection	Water Seal	Bellows Seal	Extended Bonnet	Reduce Bore	Other
Symbol	B	L	S	W	G	E	R	O

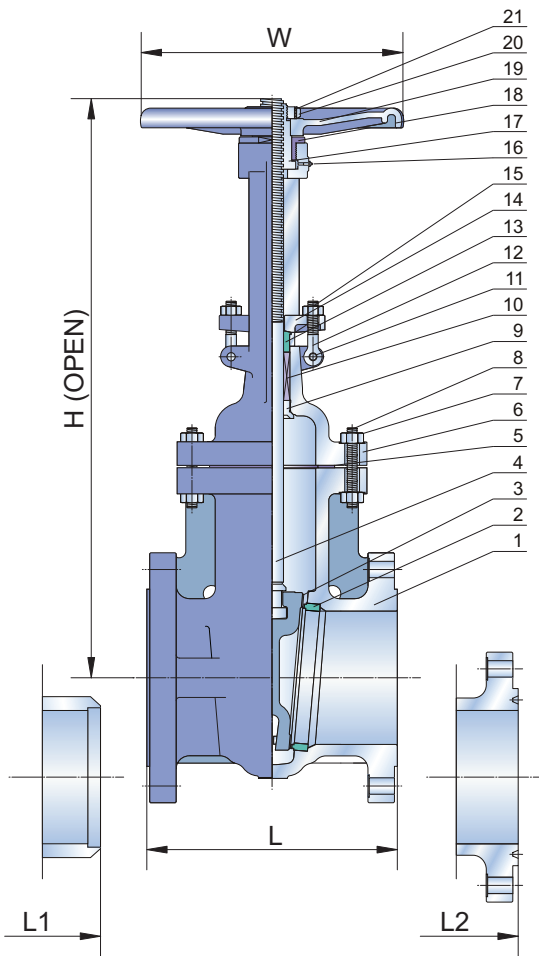
Note: If one valve has two or more special codes, the symbol shall sort by letter.



Cast Steel Gate Valve

Class 150

Figure No. GA1RCB8
GA1BCB8
GA1JCB8



FEATURES

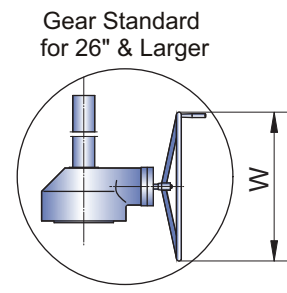
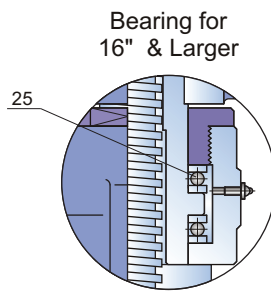
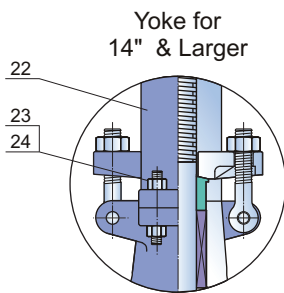
OS & Y, Rising Stem
Bolted Bonnet
Flexible Wedge (2" Solid)
Extended Bonnet for Cryogenic Services
By Pass On Request
Locking Device Optional

SPECIFICATIONS

Design	ASME B16.34/API 600
Face to Face	ASME B16.10
End to End	ASME B16.10
End Flange	ASME B16.5/B16.47
BW End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

STANDARD MATERIALS OF PARTS

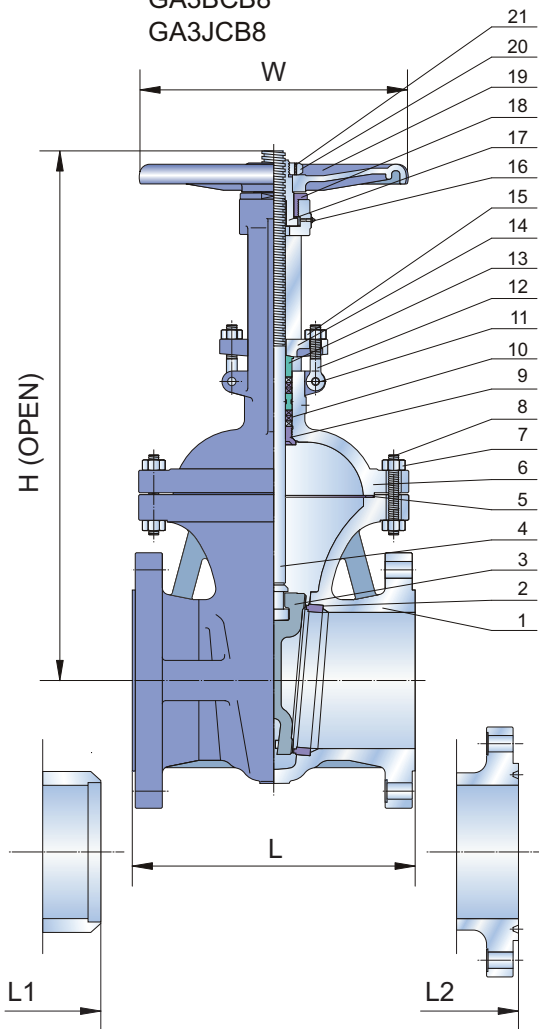
ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105+Stellite Faced
3	Disc	ASTM A216 GR.WCB+13Cr Faced
4	Stem	ASTM A182 GR.F6a
5	Gasket	Soft Iron+Graphite
6	Bonnet	ASTM A216 GR.WCB
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Backseat Bushing	ASTM A276 Type 410
10	Stem Packing	Braided Graphite & Die formed Graphite Ring
11	Eye Bolt Pins	Carbon Steel
12	Gland Eye Bolts	ASTM A307 GR.B
13	Gland	ASTM A276 Type 410
14	Gland Flange	ASTM A216 GR.WCB
15	Eye Bolt Nuts	ASTM A194 GR.2H
16	Grease Nipple	Carbon Steel
17	Stem Nut	ASTM A439 GR.D-2
18	Retaining Nut	Carbon Steel
19	Handwheel	Ductile Iron
20	Handwheel Nut	Carbon Steel
21	Screw	Carbon Steel
22	Yoke	ASTM A216 GR.WCB
23	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
24	Yoke Pan Bolts	ASTM A193 GR.B7
25	Bearing	Steel



Dimensions and Weights																							
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	26"	28"	30"	32"	36"	40"	42"	48"	
L	in	7.00	7.50	8.00	9.00	10.50	11.50	13.00	14.00	15.00	16.00	17.00	18.00	20.00	22.00	24.00	24.00	28.00	28.00	30.00	31.00	34.00	
	mm	178	191	203	229	267	292	330	356	381	406	432	457	508	559	610	610	660	711	762	787	864	
L1	in	8.50	9.50	11.12	12.00	15.88	16.50	18.00	19.75	22.50	24.00	26.00	28.00	32.00	34.00	36.00	36.00	38.00	40.00	42.00	43.00	46.00	
	mm	216	241	283	305	403	419	457	502	572	610	660	711	813	864	914	914	965	1016	1067	1092	1168	
L2	in	7.50	8.00	8.50	9.50	11.00	12.00	13.50	14.50	15.50	16.50	17.50	18.50	20.50	—	—	—	—	—	—	—	—	
	mm	191	203	216	241	279	305	343	368	394	419	445	470	521	—	—	—	—	—	—	—	—	
H	in	15.31	17.28	19.69	23.43	30.59	38.39	45.67	54.72	61.22	71.30	82.80	90.55	102.72	109.45	130.98	141.97	145.98	154.49	168.50	175.39	193.31	
	mm	389	439	500	595	777	975	1160	1390	1555	1811	2103	2300	2609	2780	3327	3606	3708	3924	4280	4455	4910	
W	in	8	8	10	10	14	14	16	18	22	24	25	27	30	24	24	24	24	24	24	32	32	
	mm	200	200	250	250	350	350	400	450	560	600	640	680	760	610	610	610	610	610	610	810	810	
Weight RF	kg	17	23	29	47	80	129	192	287	410	571	720	1170	1466	1699	1931	2380	2490	3600	4580	4710	6500	



Figure No. GA3RCB8
GA3BCB8
GA3JCB8



FEATURES

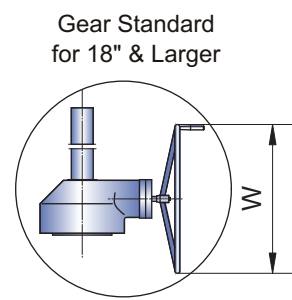
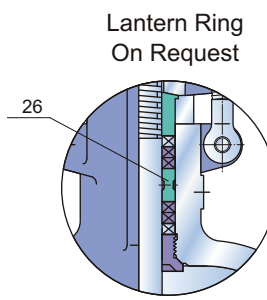
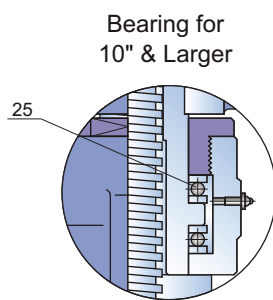
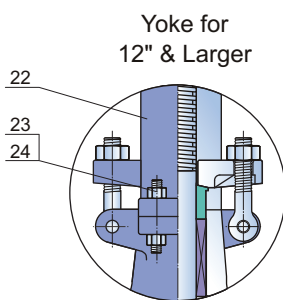
OS & Y, Rising Stem
Bolted Bonnet
Flexible Wedge (2" Solid)
Extended Bonnet for Cryogenic Services
By Pass On Request
Locking Device Optional

SPECIFICATIONS

Design	ASME B16.34/API 600
Face to Face	ASME B16.10
End to End	ASME B16.10
End Flange	ASME B16.5/B16.47
BW End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

STANDARD MATERIALS OF PARTS

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A216 GR.WCB+13Cr Faced
4	Stem	ASTM A182 GR.F6a
5	Gasket	Soft Iron+Graphite
6	Bonnet	ASTM A216 GR.WCB
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Backseat Bushing	ASTM A276 Type 410
10	Stem Packing	Braided Graphite & Die formed Graphite Ring
11	Eye Bolt Pins	Carbon Steel
12	Gland Eye Bolts	ASTM A307 GR.B
13	Gland	ASTM A276 Type 410
14	Gland Flange	ASTM A216 GR.WCB
15	Eye Bolt Nuts	ASTM A194 GR.2H
16	Grease Nipple	Carbon Steel
17	Stem Nut	ASTM A439 GR.D-2
18	Retaining Nut	Carbon Steel
19	Handwheel	Ductile Iron
20	Handwheel Nut	Carbon Steel
21	Screw	Carbon Steel
22	Yoke	ASTM A216 GR.WCB
23	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
24	Yoke Pan Bolts	ASTM A193 GR.B7
25	Bearing	Steel
26	Lantern Ring On Request	ASTM A276 Type 410



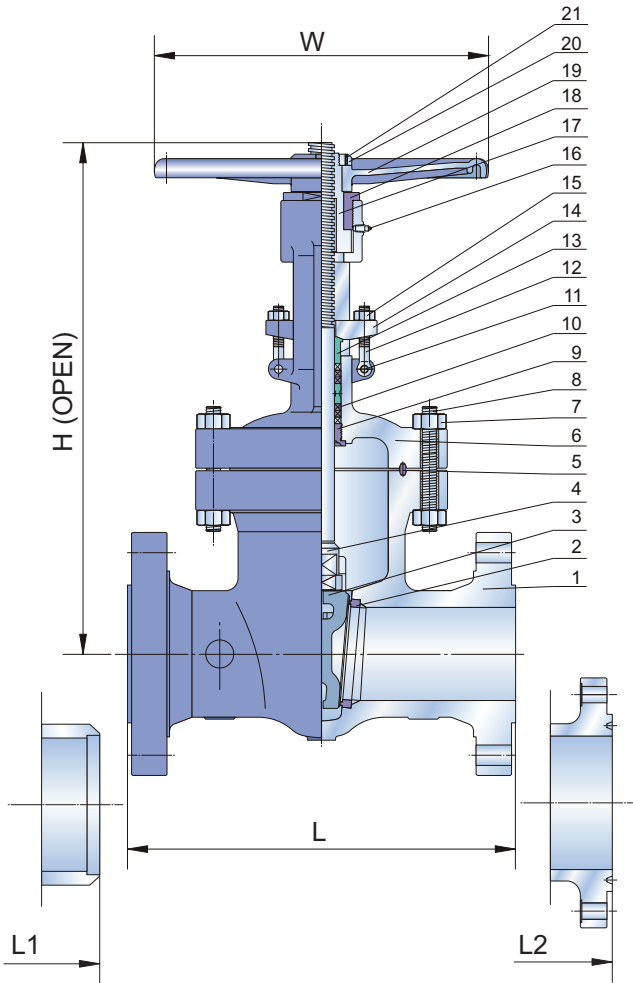
Dimensions and Weights																			
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	26"	28"	30"	32"	36"
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	650	700	750	800	900
L/L1	in	8.50	9.50	11.12	12.00	15.88	16.50	18.00	19.75	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	68.00
	mm	216	241	283	305	403	419	457	502	762	838	914	991	1143	1245	1346	1397	1524	1727
L2	in	9.12	10.12	11.74	12.62	16.50	17.12	18.62	20.37	30.62	33.62	36.62	39.75	45.88	50.00	54.00	56.00	61.12	69.12
	mm	232	257	298	321	419	435	473	517	778	854	930	1010	1165	1270	1372	1422	1552	1756
H	in	16.93	19.88	20.87	24.80	31.50	39.69	48.82	57.87	64.76	72.48	77.13	86.38	102.28	110.24	122.05	130.71	140.16	153.94
	mm	430	505	530	630	800	1008	1240	1470	1645	1841	1959	2194	2598	2800	3100	3320	3560	3910
W	in	8	10	10	10	14	16	18	20	24	24	24	24	24	24	24	32	32	32
	mm	200	250	250	250	350	400	450	500	600	600	610	610	610	610	610	810	810	810
Weight RF	kg	30	45	57	88	147	219	368	522	694	1080	1235	1655	2320	3100	3893	4930	5230	6885



Cast Steel Gate Valve

Class 600

Figure No. GA6RCB8
GA6BCB8
GA6JCB8



FEATURES

OS & Y, Rising Stem
Bolted Bonnet
Flexible Wedge (2" Solid)
Extended Bonnet for Cryogenic Services
By Pass On Request
Locking Device Optional

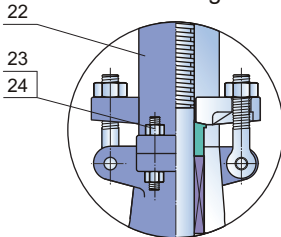
SPECIFICATIONS

Design	ASME B16.34/API 600
Face to Face	ASME B16.10
End to End	ASME B16.10
End Flange	ASME B16.5
BW End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

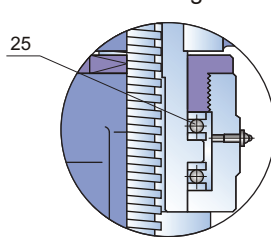
STANDARD MATERIALS OF PARTS

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A216 GR.WCB+13Cr Faced
4	Stem	ASTM A182 GR.F6a
5	Gasket, Ring Joint	Soft Iron
6	Bonnet	ASTM A216 GR.WCB
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Backseat Bushing	ASTM A276 Type 410
10	Stem Packing	Braided Graphite & Die formed Graphite Ring
11	Eye Bolt Pins	Carbon Steel
12	Gland Eye Bolts	ASTM A307 GR.B
13	Gland	ASTM A276 Type 410
14	Gland Flange	ASTM A216 GR.WCB
15	Eye Bolt Nuts	ASTM A194 GR.2H
16	Grease Nipple	Carbon Steel
17	Stem Nut	ASTM A439 GR.D-2
18	Retaining Nut	Carbon Steel
19	Handwheel	Ductile Iron
20	Handwheel Nut	Carbon Steel
21	Screw	Carbon Steel
22	Yoke	ASTM A216 GR.WCB
23	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
24	Yoke Pan Bolts	ASTM A193 GR.B7
25	Bearing	Steel
26	Lantern Ring On Request	ASTM A276 Type 410

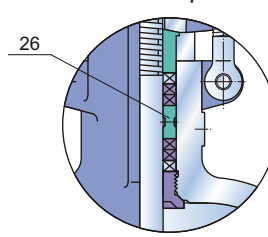
Yoke for 8" & Larger



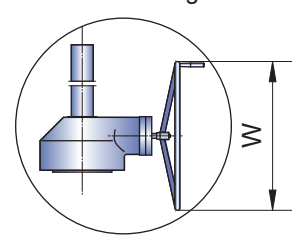
Bearing for 6" & Larger



Lantern Ring On Request



Gear Standard for 14" & Larger



Dimensions and Weights

SIZE	in	2"	2.5"	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	in	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397
L2	in	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38
	mm	295	333	359	435	562	663	790	841	892	994	1095	1200	1407
H	in	17.91	23.14	21.65	27.17	35.83	41.93	49.49	57.80	63.90	71.50	88.98	106.50	110.63
	mm	455	588	550	690	910	1065	1257	1468	1623	1816	2260	2705	2810
W	in	10	10	10	14	18	20	25	27	24	24	24	24	24
	mm	250	250	250	350	450	500	640	680	610	610	610	610	610
Weight RF	kg	45	55	76	127	277	485	754	936	1316	1672	2070	2405	4550

Class 900-2500

Cast Steel Gate Valve



Figure No. GA9RCB5 GA15RCB5 GA25RCB5
 GA9BCB5 GA15BCB5 GA25BCB5
 GA9JCB5 GA15JCB5 GA25JCB5

FEATURES

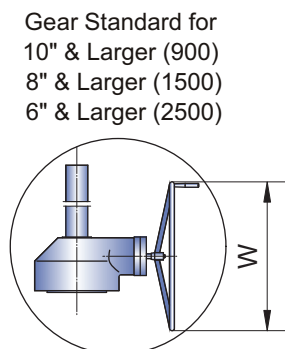
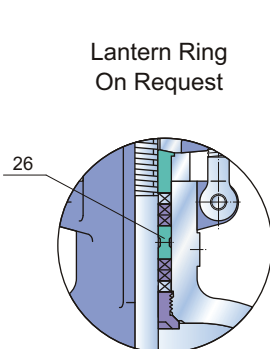
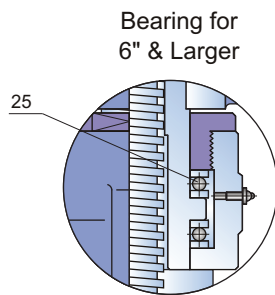
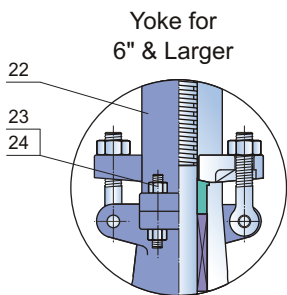
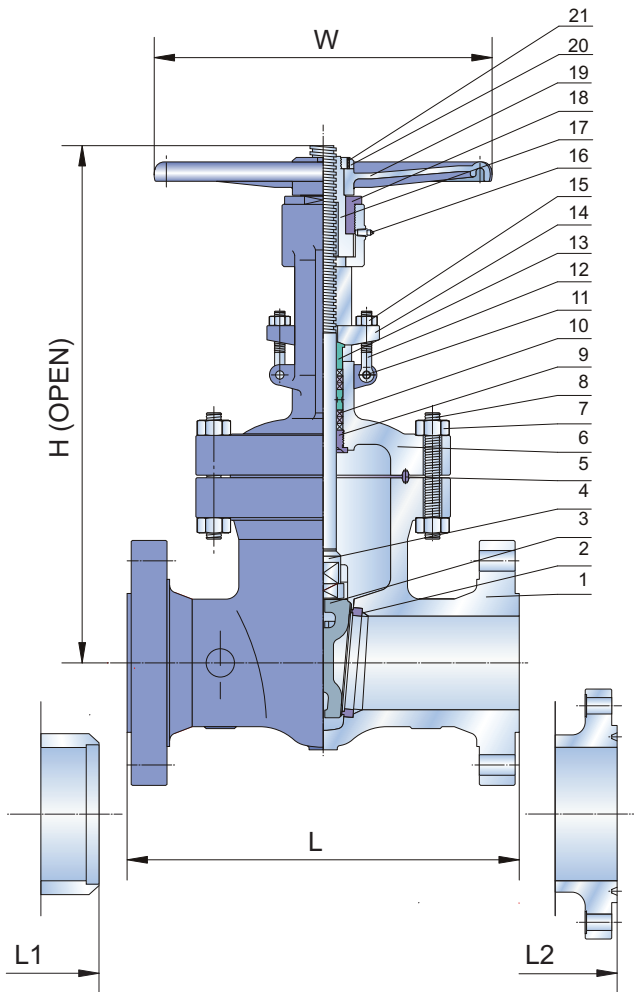
OS & Y, Rising Stem
Bolted Bonnet
Flexible Wedge (2" Solid)
Extended Bonnet for Cryogenic Services
By Pass On Request
Locking Device Optional

SPECIFICATIONS

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End to End	ASME B16.10
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BW End	ASME B16.25
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7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Backseat Bushing	ASTM A276 Type 410
10	Stem Packing	Braided Graphite & Die formed Graphite Ring
11	Eye Bolt Pins	Carbon Steel
12	Gland Eye Bolts	ASTM A307 GR.B
13	Gland	ASTM A276 Type 410
14	Gland Flange	ASTM A216 GR.WCB
15	Eye Bolt Nuts	ASTM A194 GR.2H
16	Grease Nipple	Carbon Steel
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22	Yoke	ASTM A216 GR.WCB
23	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
24	Yoke Pan Bolts	ASTM A193 GR.B7
25	Bearing	Steel
26	Lantern Ring On Request	ASTM A276 Type 410



Dimensions and Weights		CLASS 900									
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	in	mm
	mm	50	65	80	100	150	200	250	300		
L/L1	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00		
	mm	368	419	381	457	610	737	838	965		
L2	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12		
	mm	371	422	384	460	613	740	841	968		
H	in	24.41	27.76	29.02	32.48	41.93	47.99	52.95	72.44		
	mm	620	705	737	825	1065	1219	1345	1840		
W	in	12	14	14	16	20	24	24	24		
	mm	300	350	350	400	500	600	610	610		
Weight RF	kg	95	108	125	194	378	635	900	1550		

Dimensions and Weights		CLASS 1500									
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	in	mm
	mm	50	65	80	100	150	200	250	300		
L/L1	in	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50		
	mm	368	419	470	546	705	832	991	1130		
L2	in	14.62	16.62	18.62	21.62	28.00	33.13	39.38	45.12		
	mm	371	422	473	549	711	842	1000	1146		
H	in	27.36	27.76	30.31	34.33	42.99	55.12	62.99	72.44		
	mm	695	705	770	872	1092	1400	1600	1840		
W	in	14	16	16	20	24	24	24	24		
	mm	350	400	400	500	600	610	610	610		
Weight RF	kg	95	128	181	275	627	1000	2200	3300		

Dimensions and Weights		CLASS 2500									
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	in	mm
	mm	50	65	80	100	150	200	250	300		
L/L1	in	17.75	20.00	22.75	26.50	36.00	40.25	50.00	56.00		
	mm	451	508	578	673	914	1022	1270	1422		
L2	in	17.87	20.25	23.00	26.88	36.50	40.87	50.88	56.88		
	mm	454	514	584	683	927	1038	1292	1445		
H	in	27.56	29.53	34.92	43.19	57.09	63.39	81.73	89.80		
	mm	700	750	887	1079	1450	1610	2076	2281		
W	in	14	18	18	20	24	24	24	24		
	mm	350	450	450	500	610	610	610	610		
Weight RF	kg	135	210	271	506	1600	2450	4570	7150		