

Cast Steel

Gate Valve
Globe Valve
Swing Check Valve
Y Strainer

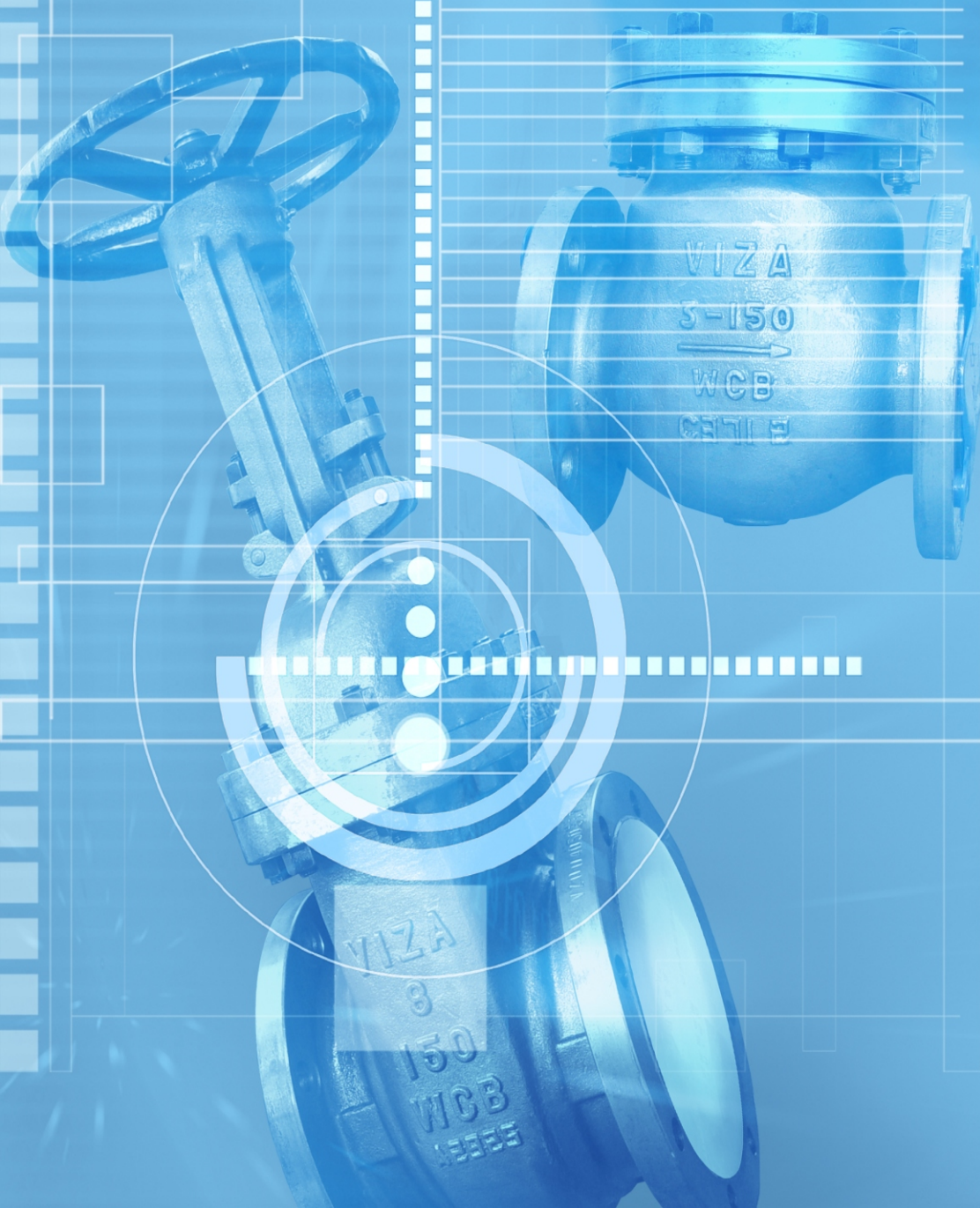


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PED/CE



ISO9001:2000



PED/CE

Company Overview



Suzhou Viza Valve Co., Ltd. (refer to VIZA Valves) is the leading manufacturer of industrial valves in China. VIZA Valves has been in valves line for more than 15 years. From the first beginning, VIZA Valve is an export-oriented manufacturer, producing valves completely as per international standards and selling them well in world markets. Today the products are 100% exported and most of them come to Western European countries, North America, Middle East of Asia, Australia and etc.



VIZA Valves has four factories, all are specialized in manufacturing different valves products, such as Cast Steel Gate, Globe and Check Valves; Floating & Trunnion Mounted Ball Valves; Centric Disc type & High Performance Butterfly Valves; Resilient Seat Gate Valves & Metal Seat Cast Iron Valves. All products conform to standards as API, ANSI, ASTM, NACE, ISO, EN, BS, DIN, UNI, MSS SP, AWWA, JIS, etc. and are widely used for Oil & Gas, Refinery, Chemical and Petrochemical, Power Generation, Water and Waste Water Treatment industries.

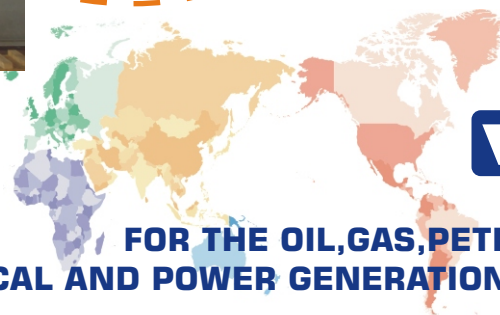
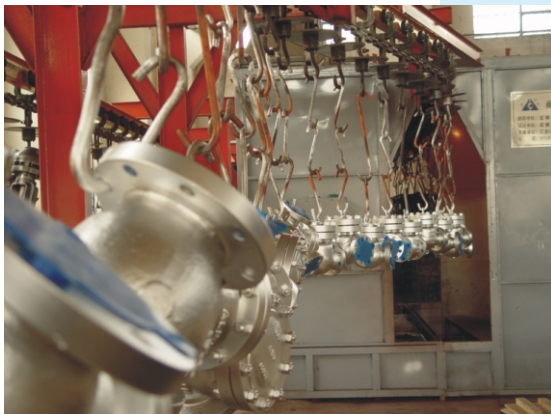


Yancheng Viza Valve Manufacturing Co., Ltd. (refer to Yancheng Viza) is one of our Viza factories, with main products for Cast Steel Gate, Globe and Check Valves, size from 2" to 36", class from 150lbs to 2500lbs, and wide scope of body materials as WCB, LCB, LCC, LC3, WC1, WC6, WC9, C5, C12, CF8, CF8M, CF3, CF3M, CF8C, Alloy 20 are available. The factory has strict quality assurance system and is certified by ISO9001: 2000 and PED/CE. Our aim is to produce "zero defect" and "long reliable service life" valves to minimum the "Total Ownership Costs".

With all Viza factories, VIZA Valves can supply the customers not only commodity valves with high quality at competitive pricing, but also full package project valves with technical solutions and value added service.



Cast Steel Valves



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

Figure Numbers



Example: 12 GA 90 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"
DN	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	800	900
Symbol	2	2.5	3	4	6	8	10	12	14	16	18	20	24	28	30	32	36

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	15	30	60	90	150	250

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 or 12				12					
Trim No.	900-2500#	5	5				5				5					

6. Trim Material

Trim Number	1	2	5	8	9	10	12	13	16	20
Symbol	1	2	5	8	9	10	12	13	16	20
Seat Surface	13Cr	304	HF	HF	Monel	316	HF	Alloy 20	HF	Bronze
Disc Surface	13Cr	304	HF	13Cr	Monel	316	316	Alloy 20	HF	Bronze
Stem	F6	F304	F6	F6	Monel	F316	F316	B473	F316	Bronze
Back Seat Ring	410	304	410	410	Monel	316	316	B473	316	Bronze

Note:

- Trim number 1 to 13 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

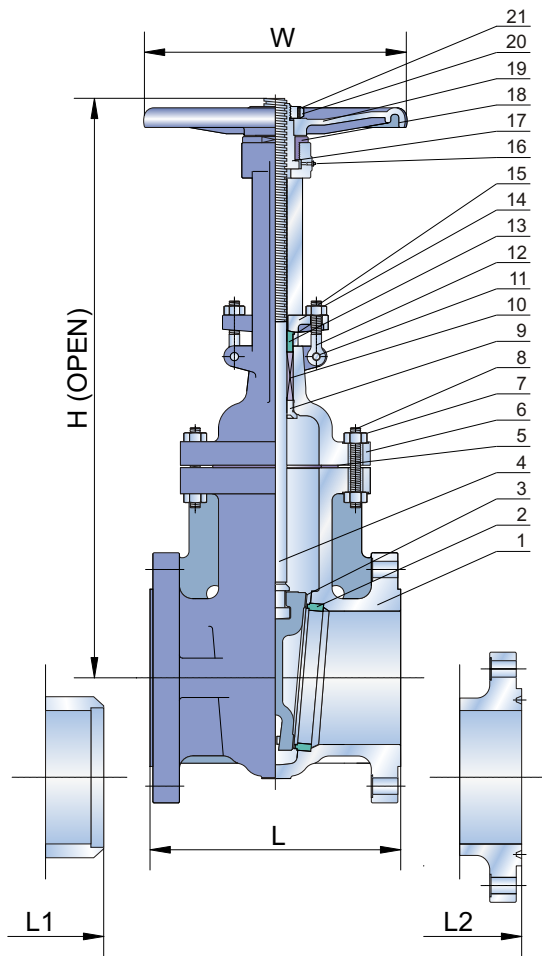
Description	Gate/Globe: OS&Y BB, Swing Check Type 1	Angel Type Globe	Swing Check Type2	Piston Check	Non Rising Stem	Pressure Seal
Symbol	None	A	T	I	N	P

Description	By Pass	Locking device	Stem Protection	Water Seal	Bellows Seal	Extended Bonnet	Reduce Boe	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.



Figure No. GA15RCB8
GA15BCB8
GA15JCB8



FEATURES

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

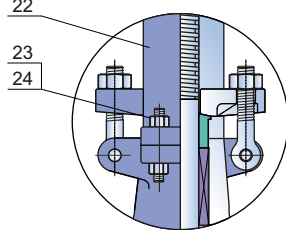
SPECIFICATIONS

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

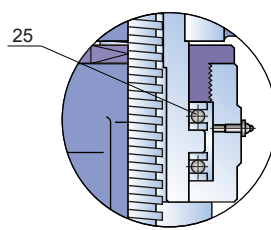
STANDARD MATERIALS OF PARTS

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.F6
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

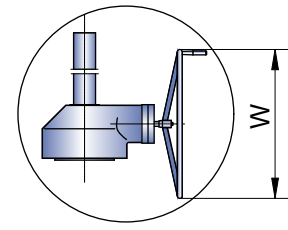
Yoke for 14" & Larger



Bearing for 16" & Larger



Gear Optional for 24" & Smaller
Standard for 28" & Larger

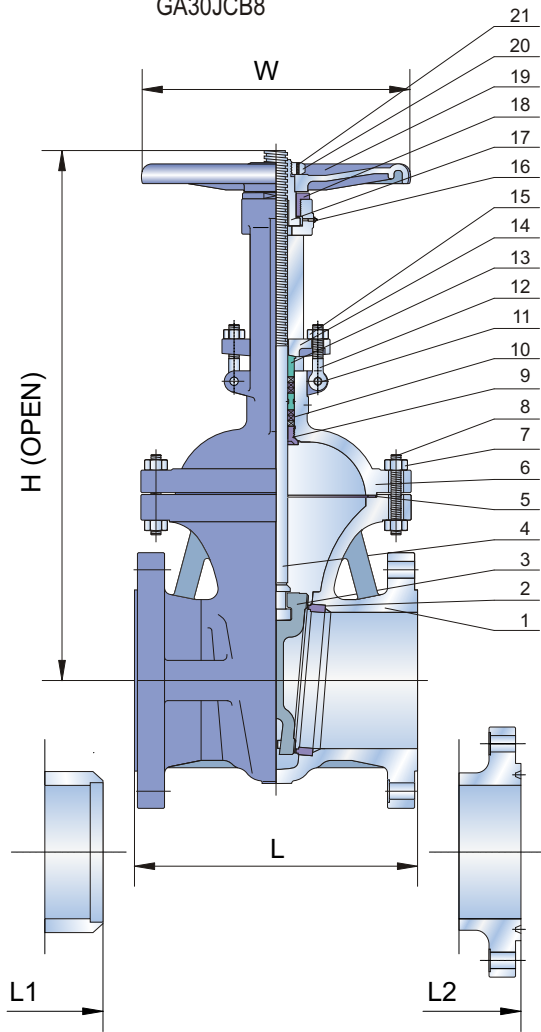


Dimensions and Weights

SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750	800	900
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	24.00	24.00	28.00	28.00
	mm	178	191	203	229	267	292	330	356	381	406	432	457	508	610	610	711	711
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	36.00	36.00	38.00	40.00
	mm	216	241	283	305	403	419	457	502	572	610	660	711	813	914	914	965	1016
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	130.98	141.97	145.98	154.49
	mm	389	439	500	595	777	975	1160	1390	1555	1811	2103	2300	2609	3327	3606	3708	3924
W	in	8	8	10	10	14	14	16	18	22	24	25	27	30	24	24	24	24
	mm	200	200	250	250	350	350	400	450	560	600	640	680	760	610	610	610	610
Weight RF	kg	17	23	29	47	80	129	192	287	410	571	720	1170	1466	1931	2380	2490	3600



Figure No. GA30RCB8
GA30BCB8
GA30JCB8



FEATURES

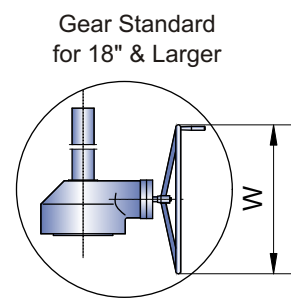
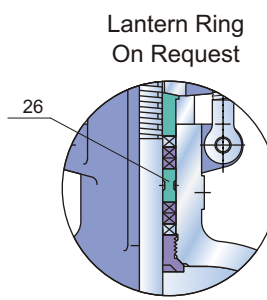
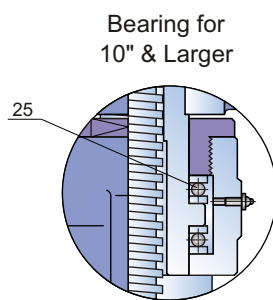
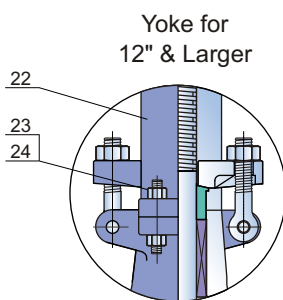
OS & Y, Rising Stem
Bolted Bonnet
Flexible Wedge (2" Solid)
Extended Bonnet for Cryogenic Services
By Pass On Request
Locking Device Optional

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

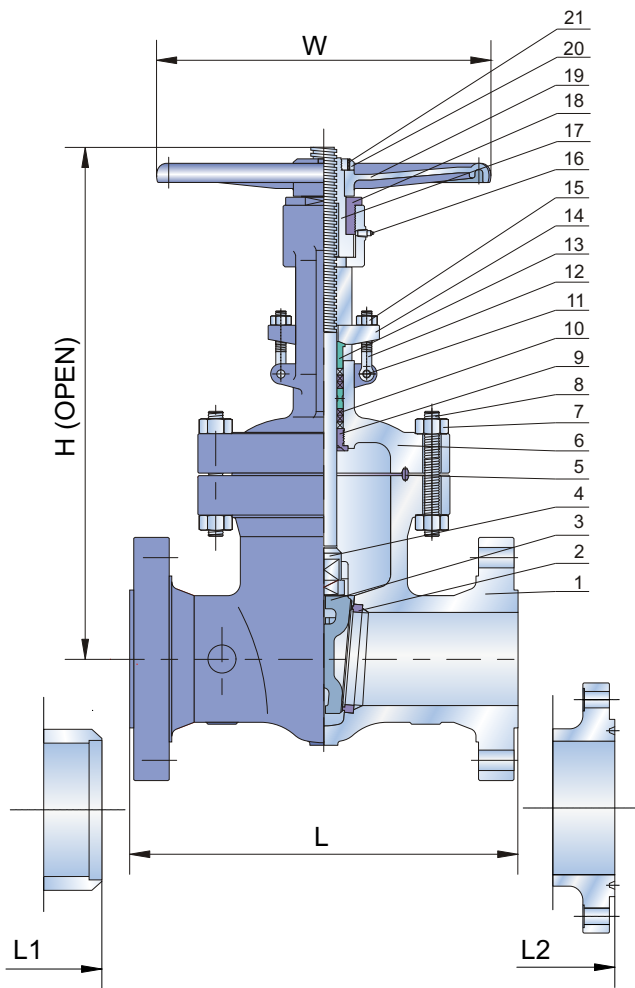
ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A216 GR.WCB+13Cr Faced
4	Stem	ASTM A182 GR.F6
5	Gasket	Soft Iron+Graphite
6	Bonnet	ASTM A216 GR.WCB
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Backseat Bushing	ASTM A276 Type 410
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"	28"	30"
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600	700	750
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	53.00	55.00
	mm	216	241	283	305	403	419	457	502	762	838	914	991	1143	1346	1397
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	54.00	56.00
	mm	232	257	298	321	419	435	473	517	778	854	930	1010	1165	1372	1422
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	122.05	130.71
	mm	430	505	530	630	800	1008	1240	1470	1645	1841	1959	2194	2598	3100	3320
W	in	8	10	10	10	14	16	18	20	24	24	24	24	24	24	24
	mm	200	250	250	250	350	400	450	500	600	600	610	610	610	610	610
Weight RF	kg	30	45	57	88	147	219	368	522	694	1080	1235	1655	2320	3893	4930



Figure No. GA60RCB8
GA60BCB8
GA60JCB8



FEATURES

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

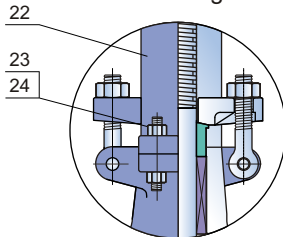
SPECIFICATIONS

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

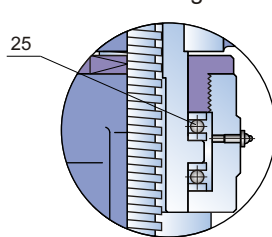
STANDARD MATERIALS OF PARTS

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.F6
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

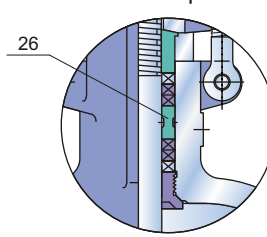
Yoke for 8" & Larger



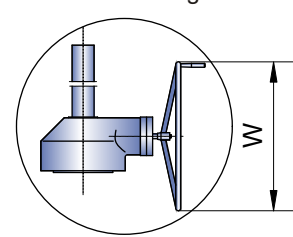
Bearing for 6" & Larger



Lantern Ring On Request



Gear Standard for 14" & Larger

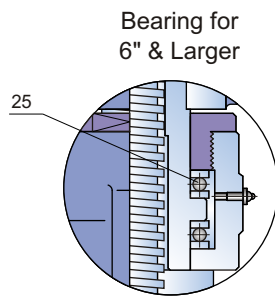
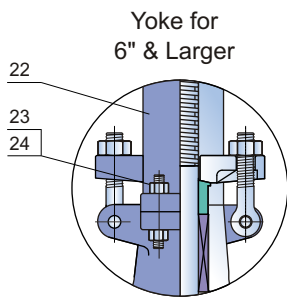
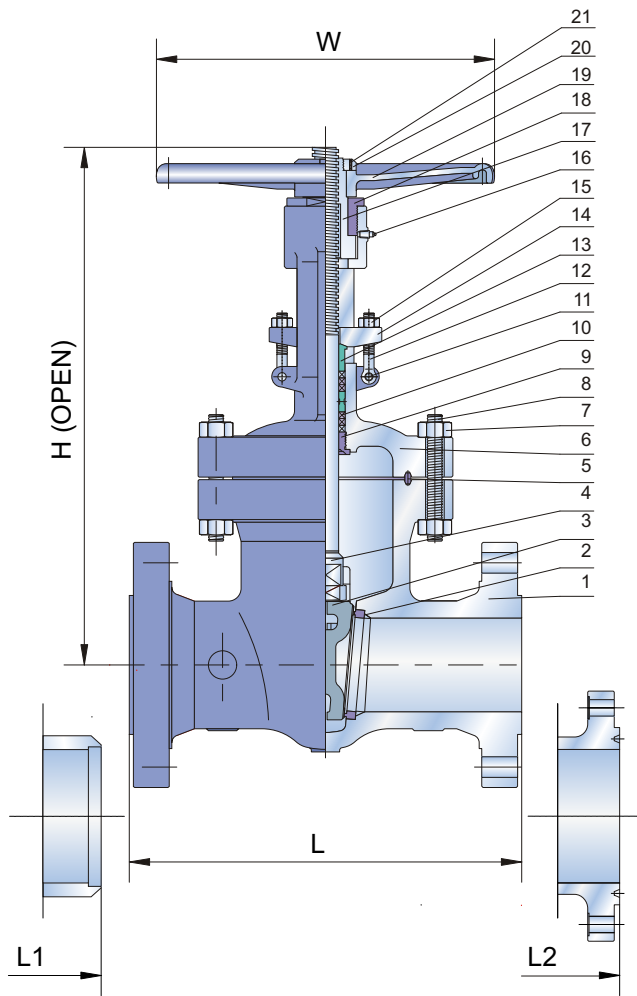


Dimensions and Weights

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

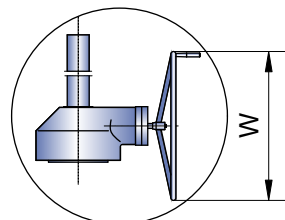
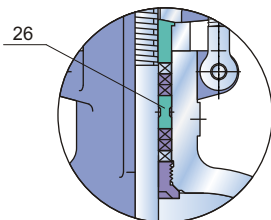


Figure No. GA90RCB8 GA150RCB8 GA250RCB8
 GA90BCB8 GA150BCB8 GA250BCB8
 GA90JCB8 GA150JCB8 GA250JCB8



Lantern Ring On Request

Gear Standard for 10" & Larger (900)
 8" & Larger (1500)
 6 & Larger (2500)



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+Stellite Faced
4	Stem	ASTM A182 GR.F6
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

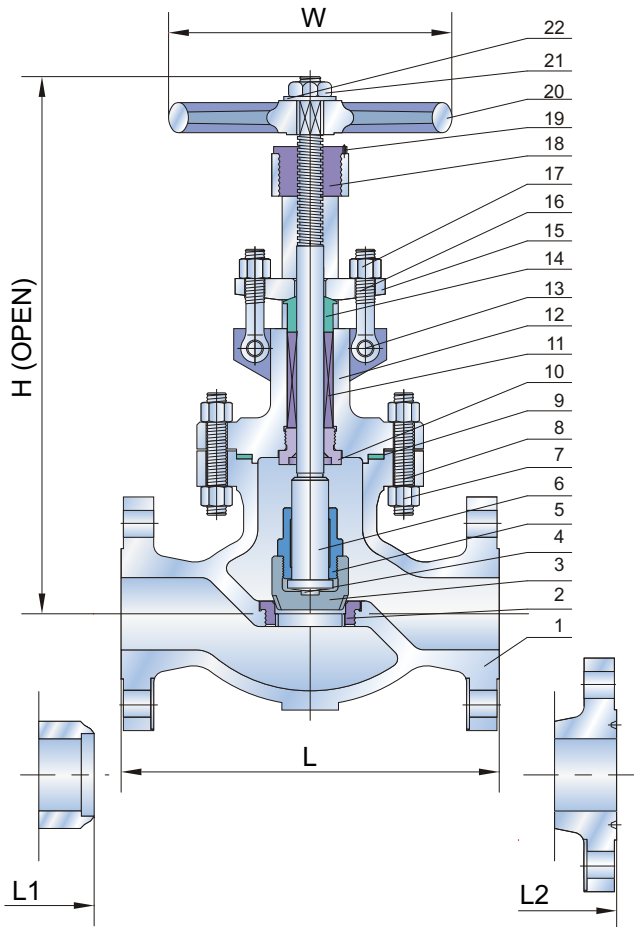
Dimensions and Weights		CLASS 900							
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"
	mm	50	65	80	100	150	200	250	300
L/L1	in	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00
	mm	368	419	381	457	610	737	838	965
L2	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12
	mm	371	422	384	460	613	740	841	968
H	in	24.41	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"
	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"
	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



Figure No. GL15RCB8
GL15BCB8
GL15JCB8



FEATURES

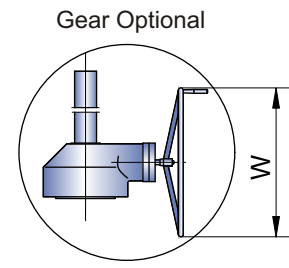
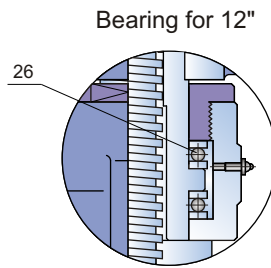
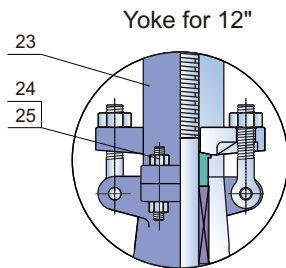
OS & Y, Rising Stem
Bolted Bonnet
Conic Disc
Extended Bonnet for Cryogenic Services
Impact Handwheel Optional
Gear Optional

SPECIFICATIONS

Design	ASME B16.34/BS 1873
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

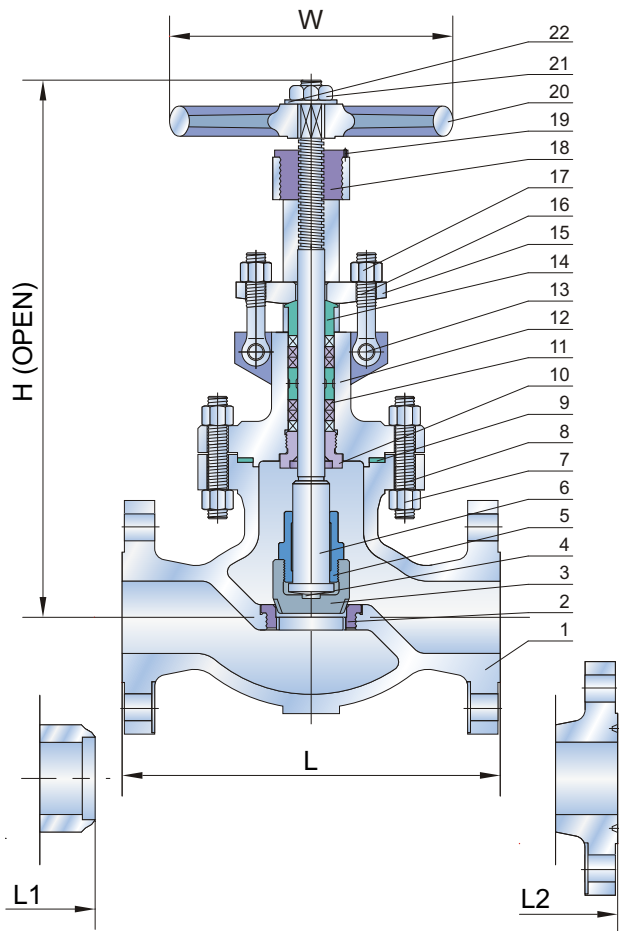
ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + 13Cr Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel



Dimensions and Weights										
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
	mm	50	65	80	100	150	200	250	300	
L/L1	in	8.00	8.50	9.50	11.50	16.00	19.50	24.50	27.50	
	mm	203	216	241	292	406	495	622	698	
L2	in	8.50	9.00	10.00	12.00	16.50	20.00	25.00	28.00	
	mm	216	229	254	305	419	508	635	711	
H	in	13.58	16.34	15.94	19.09	20.47	23.62	30.00	33.94	
	mm	345	415	405	485	520	600	762	862	
W	in	8	8	10	12	14	18	20	25	
	mm	200	200	250	300	350	450	500	640	
Weight RF	kg	22	32	38	62	104	159	308	539	



Figure No. GL30RCB8
GL30BCB8
GL30JCB8



FEATURES

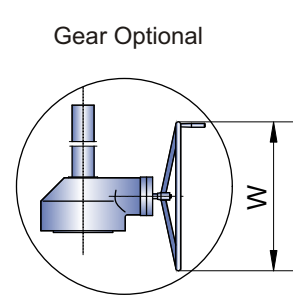
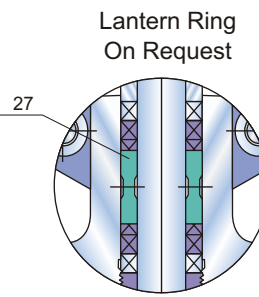
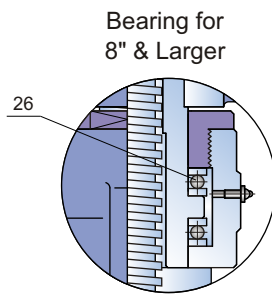
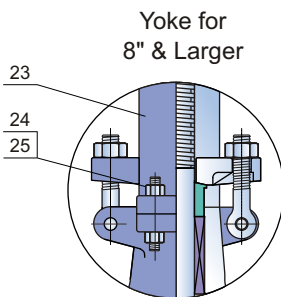
OS & Y, Rising Stem
Bolted Bonnet
Conic Disc
Extended Bonnet for Cryogenic Services
Impact Handwheel Optional
Gear Optional

SPECIFICATIONS

Design	ASME B16.34/BS 1873
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

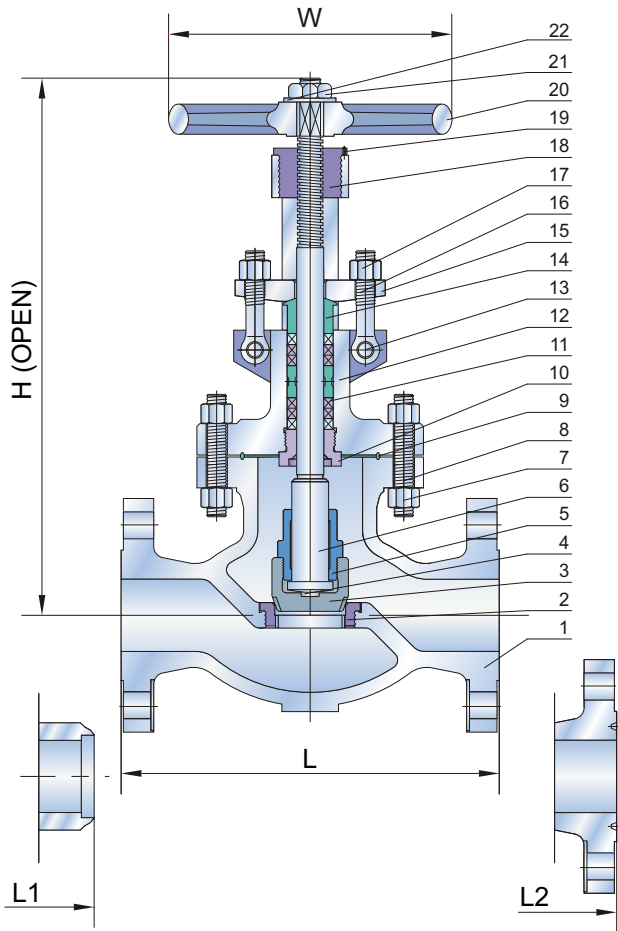
ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + 13Cr Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel
27	Lantern Ring On Request	ASTM A276 Type 410



Dimensions and Weights									
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"
	mm	50	65	80	100	150	200	250	300
L/L1	in	10.50	11.50	12.50	14.00	17.50	22.00	24.50	28.00
	mm	267	292	318	356	445	559	622	711
L2	in	11.12	12.12	13.12	14.62	18.12	22.62	25.12	28.62
	mm	283	308	333	371	460	575	638	727
H	in	14.57	18.66	17.32	20.67	24.41	35.83	37.36	40.63
	mm	370	474	440	525	620	910	949	1032
W	in	8	10	10	14	18	22	24	25
	mm	200	250	250	350	450	560	600	640
Weight RF	kg	28	48	56	82	154	240	319	632



Figure No. GL60RCB8
GL60BCB8
GL60JCB8



FEATURES

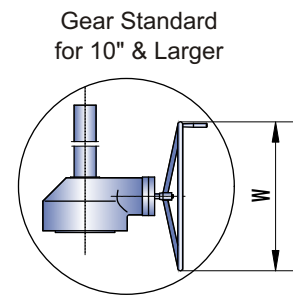
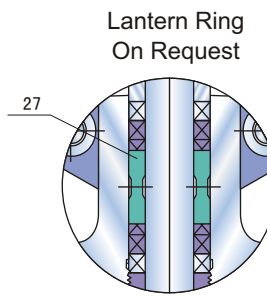
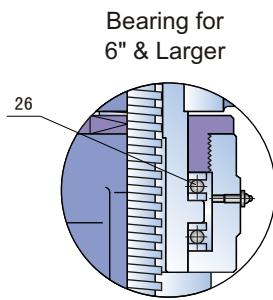
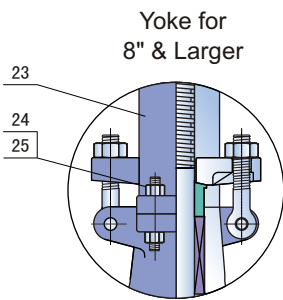
OS & Y, Rising Stem
Bolted Bonnet
Conic Disc
Extended Bonnet for Cryogenic Services
Impact Handwheel Optional
Gear Optional

SPECIFICATIONS

Design	ASME B16.34/BS 1873
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

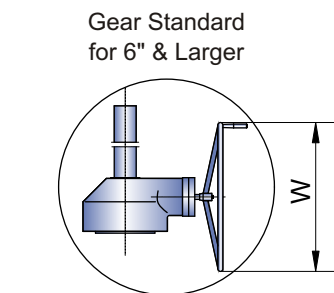
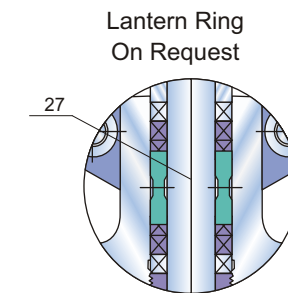
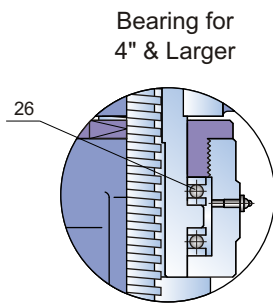
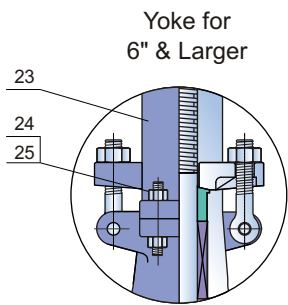
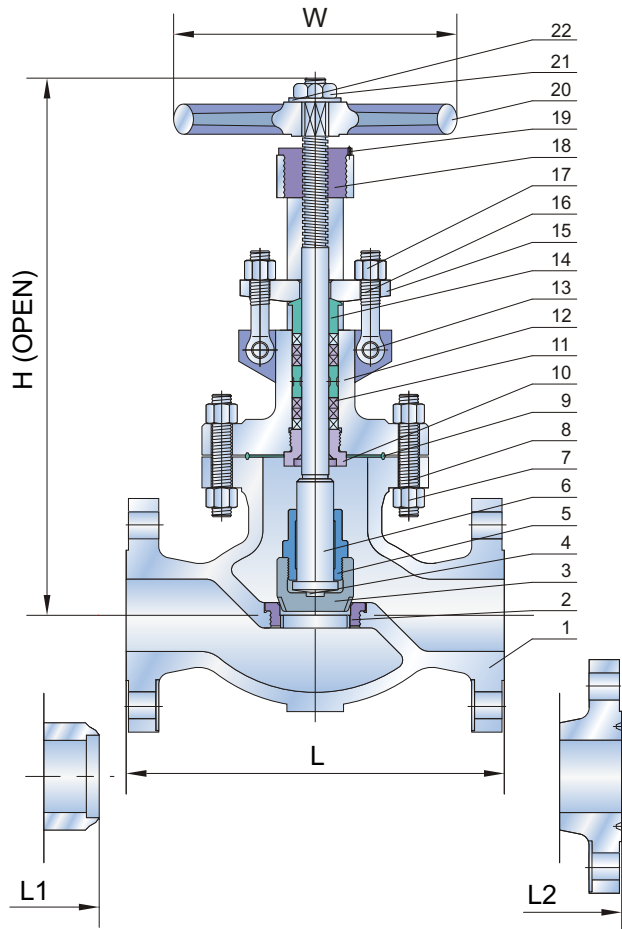
ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + 13Cr Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel
27	Lantern Ring On Request	ASTM A276 Type 410



Dimensions and Weights										
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
	mm	50	65	80	100	150	200	250	300	
L/L1	in	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	
	mm	292	330	356	432	559	660	787	838	
L2	in	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	
	mm	295	333	359	435	562	663	790	841	
H	in	18.19	21.26	23.03	26.38	34.88	36.69	40.94	50.39	
	mm	462	540	585	670	886	932	1040	1280	
W	in	10	10	12	18	20	25	24	24	
	mm	250	250	350	450	500	640	610	610	
Weight RF	kg	36	70	85	123	404	450	700	900	



Figure No. GL90JCB8 GL150JCB8 GL250JCB8
 GL90BCB8 GL150BCB8 GL250BCB8
 GL90RCB8 GL150RCB8 GL250RCB8



FEATURES

OS & Y, Rising Stem
Bolted Bonnet
Conic Disc
Extended Bonnet for Cryogenic Services
Impact Handwheel Optional
Gear Optional

SPECIFICATIONS

Design	ASME B16.34/BS 1873
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 A105 + 13Cr Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel
27	Lantern Ring On Request	ASTM A276 Type 410

Dimensions and Weights		CLASS 900					
SIZE	in	2"	2.5"	3"	4"	6"	8"
	mm	50	65	80	100	150	200
L/L1	in	14.50	16.50	15.00	18.00	24.00	29.00
	mm	368	419	381	457	610	737
L2	in	14.62	16.62	15.12	18.12	24.12	29.12
	mm	371	422	384	460	613	740
H	in	23.62	25.98	26.18	31.50	43.62	46.61
	mm	600	660	665	800	1108	1184
W	in	14	14	18	20	24	24
	mm	350	350	450	500	610	610
Weight RF	kg	95	138	122	195	435	730

Dimensions and Weights		CLASS 1500					
SIZE	in	2"	2.5"	3"	4"	6"	8"
	mm	50	65	80	100	150	200
L/L1	in	14.50	16.50	18.50	21.50	27.75	32.75
	mm	368	419	470	546	705	832
L2	in	14.62	16.62	18.62	21.62	28.00	33.13
	mm	371	422	473	549	711	841
H	in	25.98	25.98	30.31	33.46	45.08	52.95
	mm	660	660	770	850	1145	1345
W	in	14	14	20	22	24	24
	mm	350	350	500	560	610	610
Weight RF	kg	95	138	250	435	540	970

Dimensions and Weights		CLASS 2500					
SIZE	in	2"	2.5"	3"	4"	6"	8"
	mm	50	65	80	100	150	200
L/L1	in	17.75	20.00	22.75	26.50	36.00	40.25
	mm	451	508	578	673	914	1022
L2	in	17.87	20.25	23.00	26.88	36.50	40.87
	mm	454	514	584	683	927	1038
H	in	28.35	31.50	34.84	49.61	75.00	97.05
	mm	720	800	885	1260	1905	2465
W	in	16	20	22	24	24	24
	mm	400	500	560	600	610	610
Weight RF	kg	176	264	308	759	1990	4390



Cast Steel Swing Check Valve

Class 150

Figure No. CH15RCB8 CH15RCB8-T
 CH15BCB8 CH15BCB8-T
 CH15JCB8 CH15JCB8-T

FEATURES

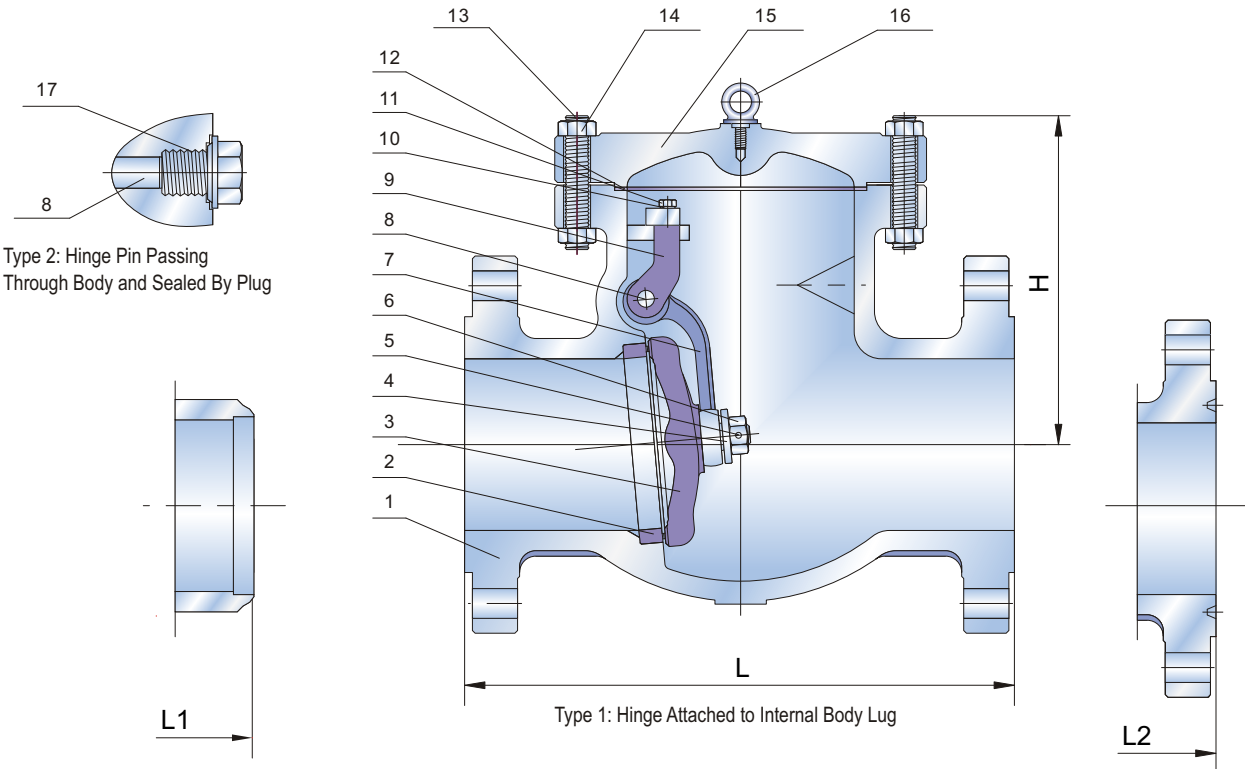
Bolted Cover
Swing Type Disc
Type 1 Standard 2"-12"
Type 2 Standard 14"-24"
6" & Larger With Eye Bolt
By Pass On Request
Lever & Weight Optional

SPECIFICATIONS

Design	ASME B16.34/BS 1868
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 + Setllite Faced
3	Disc	ASTM A216 GR.WCB + 13Cr Faced
4	Disc Washer	ASTM A276 Type 410
5	Disc Nut Pin	Stainless Steel
6	Disc Nut	Stainless Steel
7	Hinge	ASTM A216 GR.WCB
8	Hinge Pin	ASTM A182 GR.F6
9	Bearing Bracket	ASTM A216 GR.WCB
10	Spring Washer	Carbon Steel
11	Hex, Bolt	Carbon Steel
12	Gasket	Soft Iron+Graphite
13	Cover Bolt	ASTM A193 GR.B7
14	Cover Bolt Nut	ASTM A194 GR.2H
15	Cover	ASTM A216 GR.WCB
16	Eye Bolt	Carbon Steel
17	Pulg	Carbon Steel



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	8.00	8.50	9.50	11.50	14.00	19.50	24.50	27.50	31.00	34.00	38.50	38.50	51.00
	mm	203	216	241	292	356	495	622	699	787	864	978	978	1295
L2	in	8.50	9.00	10.00	12.00	14.50	20.00	25.00	28.00	31.50	34.50	39.00	39.00	51.50
	mm	216	229	254	305	368	508	635	711	800	876	991	991	1308
H	in	6.10	6.70	7.09	8.66	10.55	12.20	14.57	16.73	18.70	20.67	22.83	24.72	34.72
	mm	155	170	180	220	268	310	370	425	475	525	580	628	882
Weight RF	kg	19	26	29	46	77	163	220	366	428	555	775	835	1180

Class 300 Cast Steel Swing Check Valve



Figure No. CH30RCB8 CH30RCB8-T
 CH30BCB8 CH30BCB8-T
 CH30JCB8 CH30JCB8-T

FEATURES

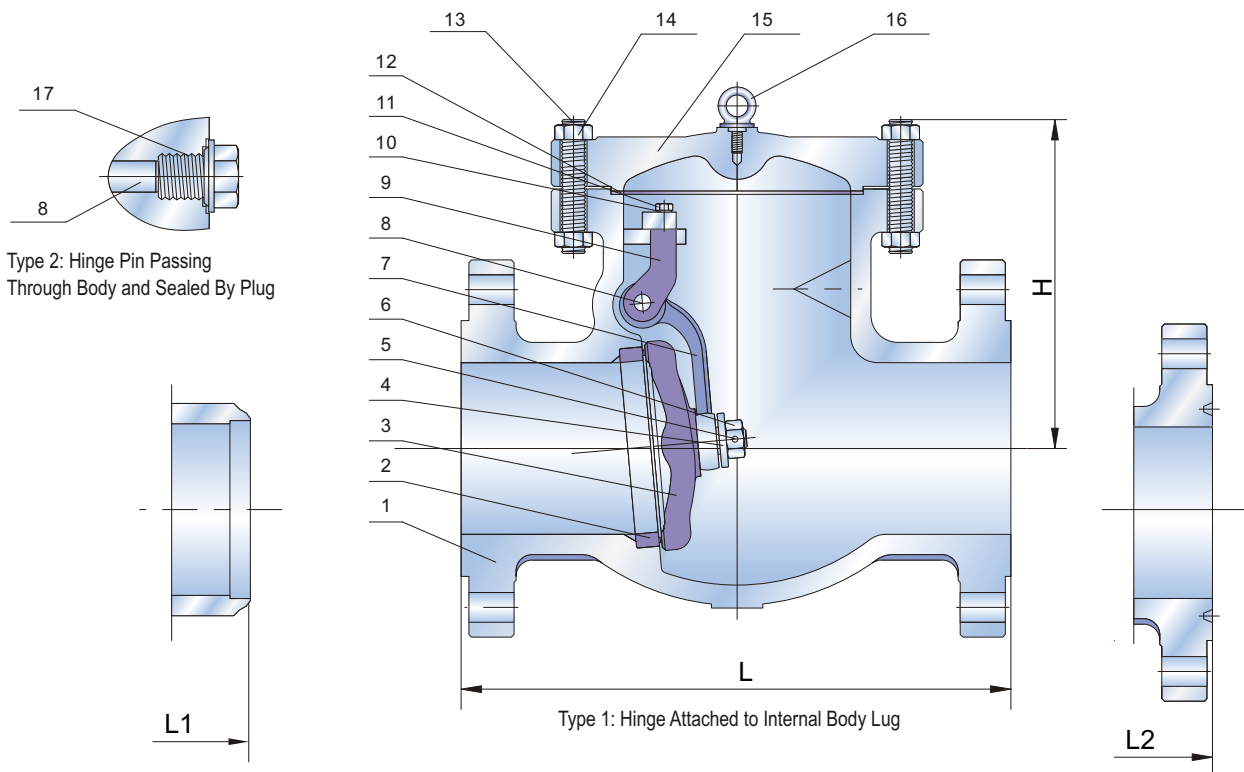
Bolted Cover
Swing Type Disc
Type 1 Standard 2"-12"
Type 2 Standard 14"-24"
3" & Larger With Eye Bolt
By Pass On Request
Lever & Weight Optional

SPECIFICATIONS

Design	ASME B16.34/BS 1868
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 + Setllite Faced
3	Disc	ASTM A216 GR.WCB + 13Cr Faced
4	Disc Washer	ASTM A276 Type 410
5	Disc Nut Pin	Stainless Steel
6	Disc Nut	Stainless Steel
7	Hinge	ASTM A216 GR.WCB
8	Hinge Pin	ASTM A182 GR.F6
9	Bearing Bracket	ASTM A216 GR.WCB
10	Spring Washer	Carbon Steel
11	Hex, Bolt	Carbon Steel
12	Gasket	Soft Iron+Graphite
13	Cover Bolt	ASTM A193 GR.B7
14	Cover Bolt Nut	ASTM A194 GR.2H
15	Cover	ASTM A216 GR.WCB
16	Eye Bolt	Carbon Steel
17	Pulg	Carbon Steel



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	10.50	11.50	12.50	14.00	17.50	21.00	24.50	28.00	33.00	34.00	38.50	40.00	53.00
	mm	267	292	318	356	445	533	622	711	838	864	978	1016	1346
L2	in	11.12	12.12	13.12	14.62	18.12	21.62	25.12	28.62	33.62	34.62	39.12	40.75	53.88
	mm	283	308	333	371	460	549	638	727	854	879	994	1035	1368
H	in	6.89	7.28	7.80	9.25	11.10	13.19	15.15	18.11	20.47	21.81	23.62	26.38	29.53
	mm	175	185	198	235	282	335	385	460	520	554	600	670	750
Weight RF	kg	21	30	39	69	125	210	307	450	680	840	1025	1320	1960



Cast Steel Swing Check Valve

Class 600

Figure No. CH60RCB8 CH60RCB8-T
 CH60BCB8 CH60BCB8-T
 CH60JCB8 CH60JCB8-T

FEATURES

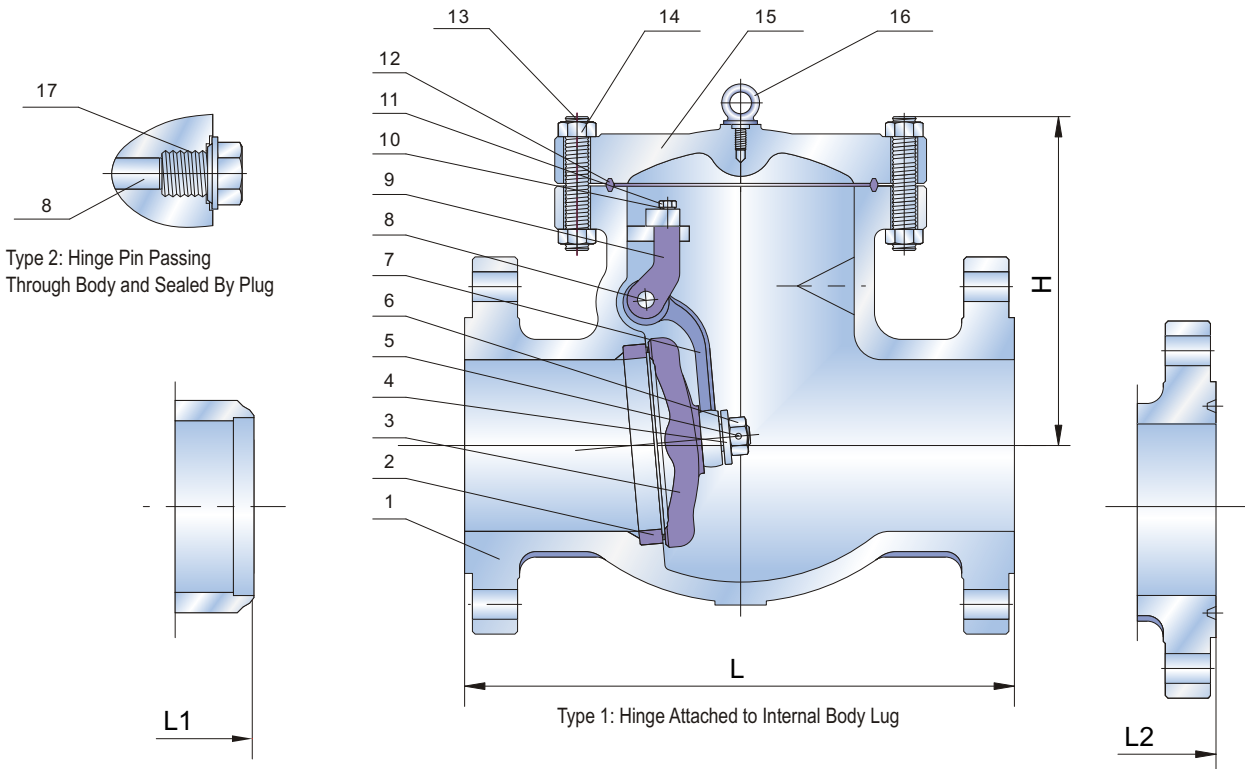
Bolted Cover
Swing Type Disc
Type 1 Standard 2"-12"
Type 2 Standard 14"-24"
With Eye Bolt
By Pass On Request
Lever & Weight Optional

SPECIFICATIONS

Design	ASME B16.34/BS 1868
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 + Settlite Faced
3	Disc	ASTM A216 GR.WCB + 13Cr Faced
4	Disc Washer	ASTM A276 Type 410
5	Disc Nut Pin	Stainless Steel
6	Disc Nut	Stainless Steel
7	Hinge	ASTM A216 GR.WCB
8	Hinge Pin	ASTM A182 GR.F6
9	Bearing Bracket	ASTM A216 GR.WCB
10	Spring Washer	Carbon Steel
11	Hex, Bolt	Carbon Steel
12	Gasket	Soft Iron+Graphite
13	Cover Bolt	ASTM A193 GR.B7
14	Cover Bolt Nut	ASTM A194 GR.2H
15	Cover	ASTM A216 GR.WCB
16	Eye Bolt	Carbon Steel
17	Pulg	Carbon Steel



Dimensions and Weights														
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
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	7.16	7.87	8.94	10.24	12.80	15.35	19.29	20.79	22.56	25.98	28.35	29.37	37.80
	mm	182	200	227	260	325	390	490	528	572	660	720	746	960
Weight RF	kg	36	49	70	122	269	465	673	875	944	1220	1620	2120	3100

Class 900-2500 Cast Steel Swing Check Valve



Figure No. CH90RCB8 CH90RCB8-T CH150RCB8 CH150RCB8-T CH250RCB8 CH250RCB8-T
 CH90BCB8 CH90BCB8-T CH150BCB8 CH150BCB8-T CH250BCB8 CH250BCB8-T
 CH90JCB8 CH90JCB8-T CH150JCB8 CH150JCB8-T CH250JCB8 CH250JCB8-T

FEATURES

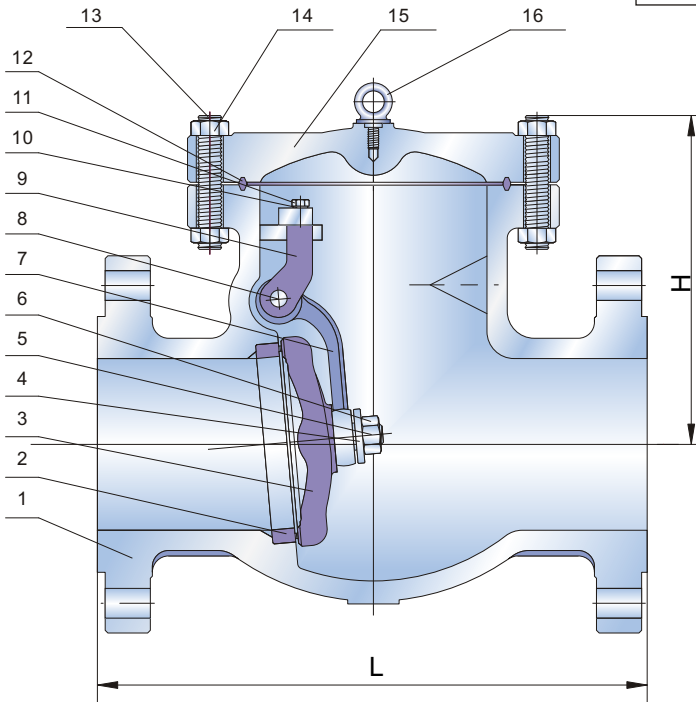
Bolted Cover
Swing Type Disc
Type 1 Standard 2"-12"
Type 2 Standard 14"-24"
With Eye Bolt
By Pass On Request
Lever & Weight Optional

SPECIFICATIONS

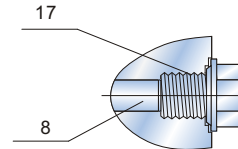
Design	ASME B16.34/BS 1868
Face to Face	ASME B16.10
End to End	ASME B16.10
End Flange	ASME B16.5
BW End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

STANDARD MATERIALS OF PARTS

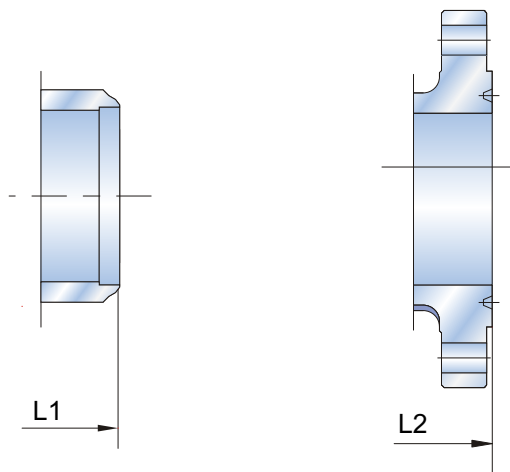
ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Setllite Faced
3	Disc	ASTM A216 GR.WCB + Stellite Faced
4	Disc Washer	ASTM A276 Type 410
5	Disc Nut Pin	Stainless Steel
6	Disc Nut	Stainless Steel
7	Hinge	ASTM A216 GR.WCB
8	Hinge Pin	ASTM A182 GR.F6
9	Bearing Bracket	ASTM A216 GR.WCB
10	Spring Washer	Carbon Steel
11	Hex, Bolt	Carbon Steel
12	Gasket	Soft Iron+Graphite
13	Cover Bolt	ASTM A193 GR.B7
14	Cover Bolt Nut	ASTM A194 GR.2H
15	Cover	ASTM A216 GR.WCB
16	Eye Bolt	Carbon Steel
17	Pulg	Carbon Steel



Type 1: Hinge Attached to Internal Body Lug



Type 2: Hinge Pin Passing Through Body and Sealed by Plug



Dimensions and Weights		CLASS 900								
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
	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	11.65	11.81	11.81	12.87	17.36	19.76	26.14	30.51	
	mm	296	300	300	327	441	502	664	775	
Weight RF	kg	70	100	91	150	305	510	810	1120	

Dimensions and Weights		CLASS 1500								
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
	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	841	1000	1146	
H	in	11.65	11.81	13.43	16.22	20.12	26.77	29.76	33.74	
	mm	296	300	341	412	511	680	756	857	
Weight RF	kg	70	100	150	245	550	1010	1550	2280	

Dimensions and Weights		CLASS 2500								
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
	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	16.38	16.50	17.36	18.86	20.12	27.99	33.50	39.37	
	mm	416	419	441	479	511	711	851	1000	
Weight RF	kg	145	240	330	650	1400	2420	3750	5500	



Materials Of Parts

CAST STEEL GATE VALVE STANDARD MATERIALS OF PARTS

ITEM	PART NAME	CARBON STEEL			ALLOY STEEL			STAINLESS STEEL				
1	Body	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
2	Seat Ring	A105	A350 LF2	A350 LF2	A182 F1	A182 F11	A182 F5	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321
3	Disc	A216 WCB	A352 LCB	A352 LCC	A216 WC1	A216 WC6	A216 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
4	Stem	A182 F6	A182 F304	A182 F304	A182 F6	A182 F6	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321
5	Gasket	CL150-300	Soft Iron +Graphite	304+Graphite	304+Graphite	316+Graphite	316+Graphite					
		CL600-2500 Ring Joint	Soft Iron	304	304	316	316					
6	Bonnet	A216 WCB	A352 LCB	A352 LCC	A216 WC1	A216 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
7	Bonnet Bolt Nuts	A194 2H	A194 4	A194 4	A194 2H	A194 4	A194 4	A194 8				
8	Bonnet Bolts	A193 B7	A193 L7	A193 L7	A193 B7	A193 B16	A193 B16	A193 B8				
9	Backseat Bushing	A276 410	A276 304	A276 304	A276 410			A276 304	A276 316	A276 304L	A276 316L	A276 321
10	Stem Packing	Braided Graphite & Die formed Graphite Ring			Braided Graphite & Die formed Graphite Ring			Braided Graphite & Die formed Graphite Ring				
11	Eye Bolt Pins	Carbon Steel			A276 410			Stainless Steel				
12	Gland Eye Bolts	A307 B	A193 L7	A307 L7	A193 B7	A193 B16	A193 B16	A193 B8				
13	Gland	A276 410	A276 304	A276 304	A276 410			A276 304	A276 316	A276 304L	A276 316L	A276 321
14	Gland Flange	A216 WCB	A352 LCB	A352 LCC	A216 WC1	A216 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
15	Eye Bolt Nuts	A194 2H	A194 4	A194 4	A194 2H	A194 4	A194 4	A194 8	A194 8	A194 8	A194 8	A194 8
16	Grease Nipple	Carbon Steel			Carbon Steel			Stainless Steel				
17	Stem Nut	A439 D-2			A439 D-2			AL-Bronze				
18	Retaining Nut	Carbon Steel			Carbon Steel			Carbon Steel				
19	Handwheel	Ductile Iron			Ductile Iron			Ductile Iron				
20	Handwheel Nut	Carbon Steel			Carbon Steel			Stainless Steel				
21	Screw	Carbon Steel			Carbon Steel			Stainless Steel				
22	Yoke	A216 WCB	A352 LCB	A352 LCC	A216 WCB	A216 WCB	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
23	Yoke Pan Bolt Nuts	A194 2H	A194 4	A194 4	A194 2H	A194 4	A194 4	A194 8				
24	Yoke Pan Bolts	A193 B7	A193 L7	A193 L7	A193 B7	A193 B16	A193 B16	A193 B8				
25	Bearing	Steel			Steel			Steel				
26	Lantern Ring On Request	A276 410	A276 304	A276 304	A276 410			A276 304	A276 316	A276 304L	A276 316L	A276 321

Note: Seating surface and trim materials see P2

CAST STEEL GLOBE VALVE STANDARD MATERIALS OF PARTS

ITEM	PART NAME	CARBON STEEL			ALLOY STEEL			STAINLESS STEEL				
1	Body	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
2	Seat Ring	A105	A350 LF2	A350 LF2	A182 F1	A182 F11	A182 F5	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321
3	Disc	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
4	Disc Thrust Plate	A276 420	A276 304	A276 304	A276 420			A276 304	A276 316	A276 304L	A276 316L	A276 321
5	Disc Nut	A276 410	A276 304	A276 304	A276 410			A276 304	A276 316	A276 304L	A276 316L	A276 321
6	Stem	A182 F6	A182 F304	A182 F304	A182 F6	A182 F6	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321
7	Bonnet Bolt Nuts	A194 2H	A194 4	A194 4	A194 2H	A194 4	A194 4	A194 8				
8	Bonnet Bolts	A193 B7	A193 L7	A193 L7	A193 B7	A193 B16	A193 B16	A193 B8				
9	Gasket	CL150-300	Soft Iron +Graphite	304+Graphite	304+Graphite	316+Graphite	316+Graphite					
		CL600-2500 Ring Joint	Soft Iron	304	304	316	316					
10	Backseat Bushing	A276 410	A276 304	A276 304	A276 410			A276 304	A276 316	A276 304L	A276 316L	A276 321
11	Stem Packing	Braided Graphite & Die formed Graphite Ring			Braided Graphite & Die formed Graphite Ring			Braided Graphite & Die formed Graphite Ring				
12	Bonnet	A216 WCB	A352 LCB	A352 LCC	A216 WC1	A216 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
13	Eye Bolt Pins	Carbon Steel			A276 410			Stainless Steel				
14	Gland	A276 410	A276 304	A276 304	A276 410			A276 304	A276 316	A276 304L	A276 316L	A276 321
15	Gland Flange	A216 WCB	A352 LCB	A352 LCC	A216 WC1	A216 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
16	Gland Eye Bolts	A307 B	A193 L7	A307 L7	A193 B7	A193 B16	A193 B16	A193 B8				
17	Eye Bolt Nuts	A194 2H	A194 4	A194 4	A194 2H	A194 4	A194 4	A194 8				
18	Yoke Bush	A439 D-2			A439 D-2			AL-Bronze				
19	Screw	Carbon Steel			Carbon Steel			Stainless Steel				
20	Handwheel	Ductile Iron			Ductile Iron			Ductile Iron				
21	Handwheel Nut	A194 2H			A194 2H			Stainless Steel				
22	Washer	Carbon Steel			Carbon Steel			Stainless Steel				
23	Yoke	A216 WCB	A352 LCB	A352 LCC	A216 WCB	A216 WCB	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
24	Yoke Pan Bolt Nuts	A194 2H	A194 4	A194 4	A194 2H	A194 4	A194 4	A194 8				
25	Yoke Pan Bolts	A193 B7	A193 L7	A193 L7	A193 B7	A193 B16	A193 B16	A193 B8				
26	Bearing	Steel			Steel			Steel				
27	Lantern Ring On Request	A276 410	A276 304	A276 304	A276 410			A276 304	A276 316	A276 304L	A276 316L	A276 321

Note: Seating surface and trim materials see P2

CAST STEEL SWING CHECK VALVE STANDARD MATERIALS OF PARTS

ITEM	PART NAME	CARBON STEEL			ALLOY STEEL			STAINLESS STEEL				
1	Body	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
2	Seat Ring	A105	A350 LF2	A350 LF2	A182 F1	A182 F11	A182 F5	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321
3	Disc	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
4	Disc Washer	A276 410	A276 304	A276 304	A276 410			A276 316				
5	Disc Nut Pin	Stainless Steel			Stainless Steel			316				
6	Disc Nut	Stainless Steel			Stainless Steel			316				
7	Hinge	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
8	Hinge Pin	A182 F6	A182 F304	A182 F304	A182 F6	A182 F6	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321
9	Bearing Bracket	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
10	Spring Washer	Carbon Steel			Stainless Steel			316				
11	Hex. Bolt	A193 B7	A193 L7	A307 L7	A193 B7	A193 B16	A193 B16	A193 B8				
12	Gasket	CL150-300	Soft Iron +Graphite	304+Graphite	304+Graphite	316+Graphite	316+Graphite					
		CL600-2500 Ring Joint	Soft Iron	304	304	316	316					
13	Cover Bolt	A193 B7	A193 L7	A307 L7	A193 B7	A193 B16	A193 B16	A193 B8				
14	Cover Bolt Nut	A194 2H	A194 4	A194 4	A194 2H	A194 4	A194 4	A194 8				
15	Cover	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C
16	Eye Bolt	Carbon Steel			Stainless Steel			Stainless Steel				
17	Pulg	A105	A350 LF2	A350 LF2	A182 F1	A182 F11	A182 F5	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321

Note: Seating surface and trim materials see P2



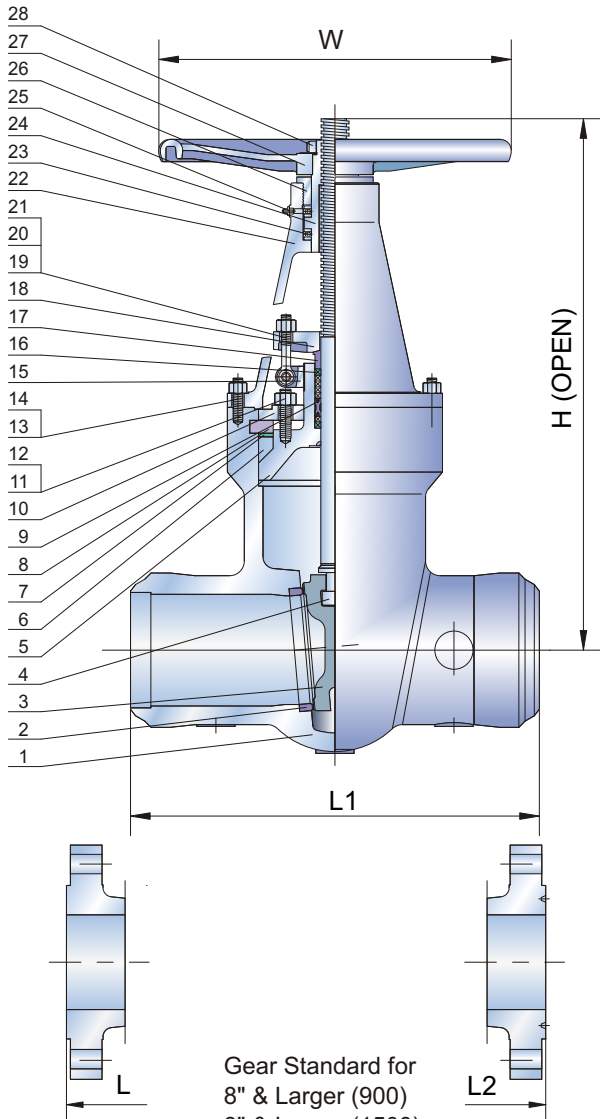
Figure No. GA90RCB5-P GA150RCB5-P GA250RCB5-P
 GA90BCB5-P GA150BCB5-P GA250BCB5-P
 GA90JCB5-P GA150JCB5-P GA250JCB5-P

FEATURES

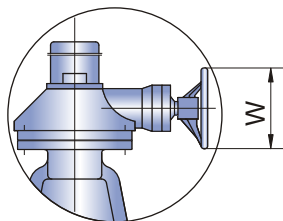
OS & Y, Rising Stem
Pressure Seal
Flexible Wedge
Backseat Weld-Deposited
By Pass On Request
Locking Device Optional
Gear Optional

SPECIFICATIONS

Design	ASME B16.34
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



Gear Standard for
 8" & Larger (900)
 8" & Larger (1500)
 6" & Larger (2500)



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+Stellite Faced
4	Stem	ASTM A182 GR.F6
5	Bonnet	ASTM A216 GR.WCB+Stellite Faced
6	Gasket	ASTM A182 GR.F304
7	Thrust Ring	ASTM A276 Type 410
8	Separate Ring	Carbon Steel
9	Lantern Ring On Request	ASTM A276 Type 410
10	Bonnet Retainer	Carbon Steel
11	Bonnet Bolts	ASTM A193 GR.B7
12	Bonnet Bolt Nuts	ASTM A194 GR.2H
13	Yoke Bolts	ASTM A193 GR.B7
14	Yoke Bolt Nuts	ASTM A194 GR.2H
15	Gland Eye	ASTM A216 GR.WCB
16	Stem Packing	Braided Graphite & Die formed Graphite Ring
17	Gland	ASTM A276 Type 410
18	Gland Flange	ASTM A216 GR.WCB
19	Eye Bolt Pins	Carbon Steel
20	Gland Eye Bolts	ASTM A193 GR.B7
21	Eye Bolt Nuts	ASTM A194 GR.2H
22	Yoke	ASTM A216 GR.WCB
23	Bearing	Steel
24	Stem Nut	ASTM A439 GR.D-2
25	Grease Nipple	Carbon Steel
26	Retaining Nut	Carbon Steel
27	Handwheel	Ductile Iron
28	Handwheel Nut	Carbon Steel

Dimensions and Weights		CLASS 900							
SIZE		2"	2.5"	3"	4"	6"	8"	10"	12"
L	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
L1	in	8.50	10.00	12.00	14.00	20.00	26.00	31.00	36.00
	mm	216	254	305	356	508	660	787	914
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	24.00	30.00	30.71	33.86	40.35	50.63	60.63	70.28
	mm	610	762	780	860	1025	1286	1540	1785
W	in	12	14	14	16	20	24	24	24
	mm	300	350	350	400	500	610	610	610
Weight BW	kg	50	72	86	110	202	530	782	1135

Dimensions and Weights		CLASS 2500							
SIZE		2"	2.5"	3"	4"	6"	8"	10"	12"
L	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
L1	in	11.00	13.00	14.50	18.00	24.00	30.00	36.00	41.00
	mm	279	330	368	457	610	762	914	1041
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	24.00	30.55	30.90	34.40	44.02	53.46	66.14	74.50
	mm	610	776	785	874	1118	1358	1680	1892
W	in	14	18	18	20	24	24	24	24
	mm	350	450	450	500	610	610	610	610
Weight BW	kg	60	112	122	192	480	830	1678	2320

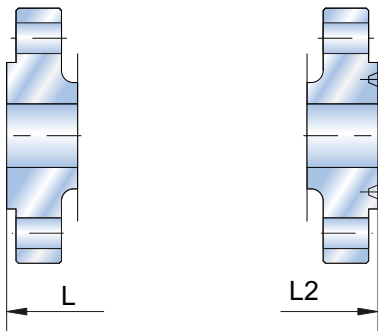
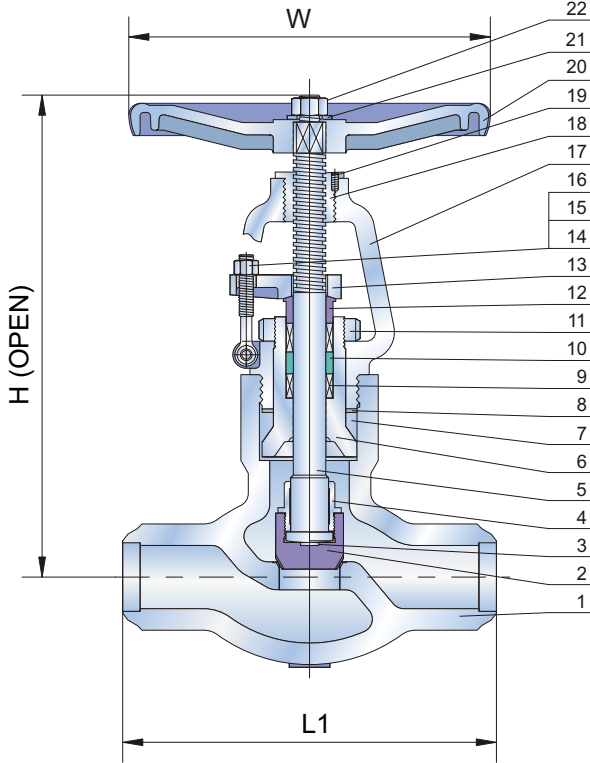
Dimensions and Weights		CLASS 1500							
SIZE		2"	2.5"	3"	4"	6"	8"	10"	12"
L	in	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50
	mm	368	419	470	546	705	832	991	1130
L1	in	8.50	10.00	12.00	16.00	22.00	28.00	34.00	39.00
	mm	216	254	305	406	559	711	864	991
L2	in	14.62	16.62	18.62	21.62	28.00	33.13	39.38	45.12
	mm	371	422	473	549	711	842	1000	1146
H	in	24.00	30.55	30.90	34.40	40.35	53.46	61.74	74.50
	mm	610	776	785	874	1025	1358	1568	1892
W	in	12	16	16	20	24	24	24	24
	mm	300	400	400	500	600	610	610	610
Weight BW	kg	50	78	92	145	230	540	1060	1184



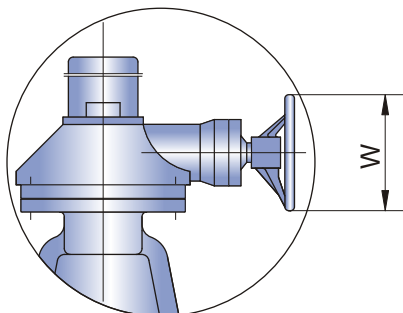
Pressure Seal Globe Valve

Class 900-2500

Figure No. GL90RCB5-P GL150RCB5-P GL250RCB5-P
 GL90BCB5-P GL150BCB5-P GL250BCB5-P
 GL90JCB5-P GL150JCB5-P GL250JCB5-P



Gear Standard for
 6" & Larger (900)
 6" & Larger (1500)
 4" & Larger (2500)



FEATURES

OS & Y, Rising Stem
Pressure Seal
Conic Disc
Backseat Weld-Deposited
By Pass On Request
Locking Device Optional
Gear Optional

SPECIFICATIONS

Design	ASME B16.34
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+Stellite Faced
2	Disc	ASTM A105+Stellite Faced
3	Disc Thrust Plate	ASTM A276 Type 420
4	Disc Nut	ASTM A276 Type 410
5	Stem	ASTM A182 GR.F6
6	Bonnet	ASTM A216 Gr.WCB+Stellite Faced
7	Gasket	ASTM A182 GR.F304
8	Thrust Ring	ASTM A276 Type 410
9	Stem Packing	Braided Graphite & Die formed Graphite Ring
10	Lantern Ring	ASTM A276 Type 410
11	Bonnet Retainer	Carbon Steel
12	Gland	ASTM A276 Type 410
13	Gland Flange	ASTM A216 GR.WCB
14	Eye Bolt Pins	Carbon Steel
15	Gland Eye Bolts	ASTM A193 GR.B7
16	Eye Bolt Nuts	ASTM A194 GR.2H
17	Yoke	ASTM A216 GR.WCB
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Washer	Carbon Steel
22	Handwheel Nut	ASTM A194 GR.2H

Dimensions and Weights		CLASS 900					
SIZE	in	2"	2.5"	3"	4"	6"	8"
	mm	50	65	80	100	150	200
L/L1	in	14.50	16.50	15.00	18.00	24.00	29.00
	mm	368	419	381	457	610	737
L2	in	14.62	16.62	15.12	18.12	24.12	29.12
	mm	371	422	384	460	613	740
H	in	24.41	25.40	28.50	33.40	48.23	53.15
	mm	620	645	724	848	1225	1350
W	in	14	14	18	20	24	24
	mm	350	350	450	500	610	610
Weight BW	kg	62	86	86	140	380	948

Dimensions and Weights		CLASS 1500					
SIZE	in	2"	2.5"	3"	4"	6"	8"
	mm	50	65	80	100	150	200
L/L1	in	14.50	16.50	18.50	21.50	27.75	32.75
	mm	368	419	470	546	705	832
L2	in	14.62	16.62	18.62	21.62	28.00	33.13
	mm	371	422	473	549	711	842
H	in	24.41	25.40	32.68	33.86	48.50	70.24
	mm	620	645	830	860	1232	1784
W	in	14	14	20	22	24	24
	mm	350	350	500	560	610	610
Weight BW	kg	62	86	112	158	765	1494

Dimensions and Weights		CLASS 2500					
SIZE	in	2"	2.5"	3"	4"	6"	8"
	mm	50	65	80	100	150	200
L/L1	in	17.75	20.00	22.75	26.50	36.00	40.25
	mm	451	508	578	673	914	1022
L2	in	17.87	20.25	23.00	26.88	36.50	40.87
	mm	454	514	584	683	927	1038
H	in	24.41	30.63	34.84	51.10	53.74	83.46
	mm	620	778	885	1298	1365	2120
W	in	16	20	22	24	24	24
	mm	400	500	560	610	610	610
Weight BW	kg	80	115	152	358	965	2095

Class 900-2500 Pressure Seal Swing Check Valve



Figure No. CH90RCB5-P CH150RCB5-P CH250RCB5-P
 CH90BCB5-P CH150BCB5-P CH250BCB5-P
 CH90JCB5-P CH150JCB5-P CH250JCB5-P

FEATURES

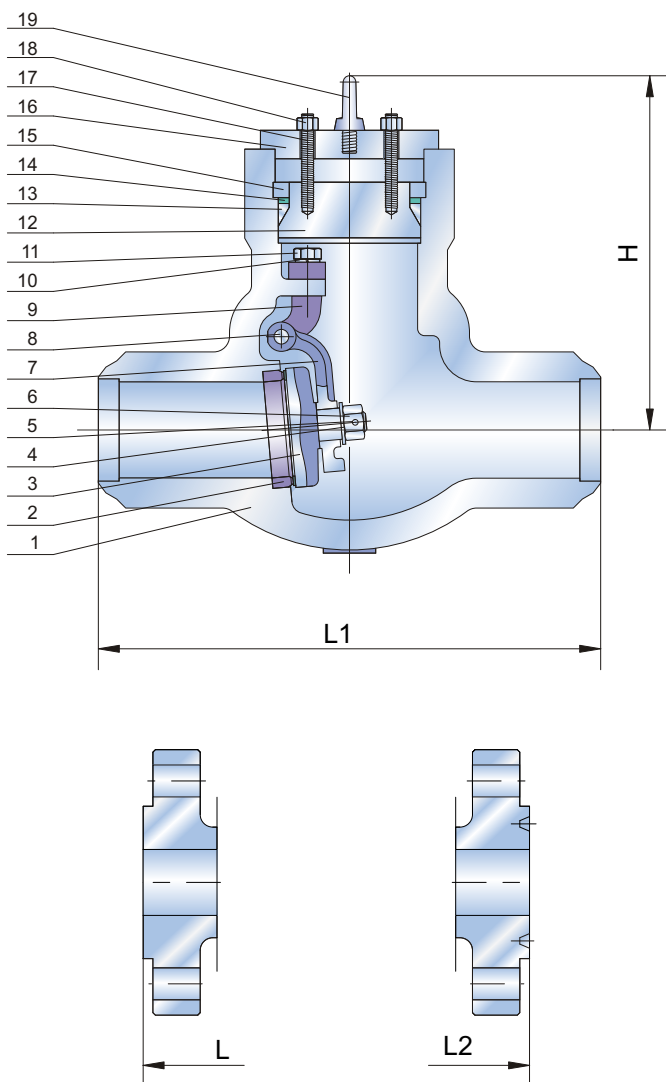
Pressure Seal
Swing Type Disc
Type 1 Standard
Type 2 Optional
With Eye Bolt
By Pass On Request
Lever & Weight Optional

SPECIFICATIONS

Design	ASME B16.34
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 + Setllite Faced
3	Disc	ASTM A216 GR.WCB + Setllite Faced
4	Disc Washer	ASTM A276 Type 410
5	Disc Nut Pin	Stainless Steel
6	Disc Nut	Stainless Steel
7	Hinge	ASTM A216 GR.WCB
8	Hinge Pin	ASTM A182 GR.F6
9	Bearing Bracket	ASTM A216 GR.WCB
10	Spring Washer	Carbon Steel
11	Hex, Bolt	Carbon Steel
12	Bonnet	ASTM A216 GR.WCB
13	Gasket	ASTM A182 GR.F304
14	Thrust Ring	ASTM A276 Type 410
15	Separate Ring	ASTM A276 Type 410
16	Cover	ASTM A216 GR.WCB
17	Cover Bolts	ASTM A193 GR.B7
18	Cover Bolt Nuts	ASTM A194 GR.2H
19	Eye Bolt	Carbon Steel



Dimensions and Weights		CLASS 900								
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
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	11.65	11.81	11.81	12.87	17.36	19.76	26.14	30.51	
	mm	296	300	300	327	441	502	664	775	
Weight BW	kg	50	77	68	115	230	387	632	910	

Dimensions and Weights		CLASS 1500								
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
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	841	1000	1146	
H	in	11.65	11.81	13.43	16.22	20.12	26.77	29.76	33.74	
	mm	296	300	341	412	511	680	756	857	
Weight BW	kg	50	77	115	190	452	845	1280	1780	

Dimensions and Weights		CLASS 2500								
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
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	16.38	16.50	17.36	18.86	20.12	27.99	33.50	39.37	
	mm	416	419	441	479	511	711	851	1000	
Weight BW	kg	110	190	260	535	1110	1980	2980	4350	



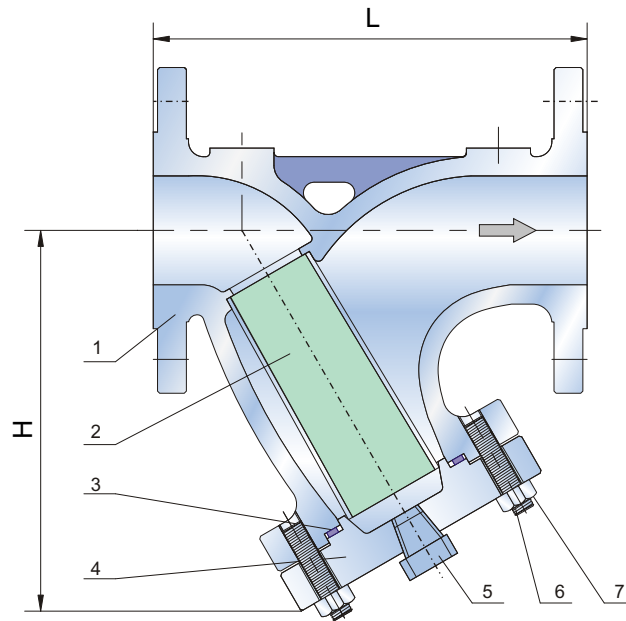
Figure No. ST15RCB
ST30RCB
ST60RCB

SPECIFICATIONS

Design	ASME B16.34
Face to Face	ASME B16.10
End Flange	ASME B16.5
Test	API 598

STANDARD MATERIALS OF PARTS

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Screen	ASTM A276 Type 304
3	Gasket	304+Graphite
4	Cover	ASTM A216 GR.WCB
5	Plug	ASTM A105
6	Cover Bolts	ASTM A193 GR.B7
7	Cover Bolt Nuts	ASTM A194 GR.2H



Dimensions and Weights CLASS150									
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"
	mm	50	65	80	100	150	200	250	300
L	in	8.00	8.50	9.50	11.50	16.00	19.50	24.50	27.50
	mm	203	216	241	292	406	495	622	699
H	in	5.71	7.20	8.11	8.98	12.95	17.32	19.96	23.39
	mm	145	183	206	228	329	440	507	594
Weight	kg	12	18	21	32	48	105	169	215

Dimensions and Weights CLASS 300									
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"
	mm	50	65	80	100	150	200	250	300
L	in	10.50	11.50	12.50	14.00	17.50	22.00	24.50	28.00
	mm	267	292	318	356	445	559	622	711
H	in	6.70	7.28	9.25	11.42	14.76	17.72	22.64	26.18
	mm	170	185	235	290	375	450	575	665
Weight	kg	15	18	35	51	92	182	285	307

Dimensions and Weights CLASS 600									
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"
	mm	50	65	80	100	150	200	250	300
L	in	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00
	mm	292	330	356	432	559	660	787	838
H	in	7.28	7.87	9.84	11.81	16.34	19.29	23.43	26.77
	mm	185	200	250	300	415	490	595	680
Weight	kg	35	40	48	90	220	360	500	781

Stem Data & Operation Torques



Gate Valve

CLASS	ITEM	VALVE SIZE																
		2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"
150	Stem Thread O.D.	3/4"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	1 3/4"	1 7/8"	2"	2 1/4"	2 1/2"	2 3/4"	3"	3"
	Thread Per Inch	6	6	5	5	5	4	4	4	3	3	3	3	3	3	3	3	2
	Pitch (in)	0.2	0.2	0.5	0.2	0.2	0.25	0.25	0.25	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.5
	Turns to Open	13	16	18	24	34	36	44	52	44	53	58	64	75	88	94	99	74
	Touque (N.m)	16	18	24	38	76	111	182	269	325	435	565	748	1256	1587	1935	2127	3239
300	Stem Thread O.D.	3/4"	3/4"	7/8"	1"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	1 3/4"	1 7/8"	2"	2 1/8"	2 1/2"	2 3/4"	2 7/8"		
	Thread Per Inch	6	6	5	5	4	4	4	3	3	3	3	3	3	3			
	Pitch (in)	0.2	0.2	0.2	0.2	0.25	0.25	0.25	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.5		
	Turns to Open	14	16	18	24	26	36	44	40	45	53	58	64	76	88	94		
	Touque (N.m)	23	26	35	55	159	291	458	661	810	1088	1430	1778	2823	4115	5653		
600	Stem Thread O.D.	3/4"	7/8"	1"	1 1/8"	1 1/2"	1 5/8"	1 7/8"	2"	2 1/4"	2 3/8"	2 1/2"	2 3/4"	3"				
	Thread Per Inch	6	5	5	5	4	3	3	3	3	3	3	3	2				
	Pitch (in)	0.2	0.2	0.2	0.2	0.25	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.5				
	Turns to Open	14	16	18	24	27	27	33	40	45	53	58	64	51				
	Touque (N.m)	35	47	70	122	406	641	1023	1508	2098	2816	3038	3981	6896				
900	Stem Thread O.D.	1"	1 1/8"	1 1/8"	1 1/4"	1 5/8"	1 7/8"	2 1/8"	2 1/4"									
	Thread Per Inch	5	5	5	4	3	3	3	3									
	Pitch (in)	0.2	0.2	0.2	0.25	0.333	0.333	0.333	0.333									
	Turns to Open	14	16	18	21	22	28	34	40									
	Touque (N.m)	80	90	95	159	569	978	1728	2601									
1500	Stem Thread O.D.	1"	1 1/8"	1 1/4"	1 3/8"	1 3/4"	2 1/8"	2 1/2"	2 3/4"									
	Thread Per Inch	5	5	4	4	3	3	3	3									
	Pitch (in)	0.2	0.2	0.25	0.25	0.333	0.333	0.333	0.333									
	Turns to Open	14	16	17	22	22	28	34	40									
	Touque (N.m)	117	172	224	349	1009	2025	3259	4437									
2500	Stem Thread O.D.	1"	1 1/8"	1 1/4"	1 3/8"	1 7/8"	2 3/8"	2 7/8"	3 1/4"									
	Thread Per Inch	5	5	4	4	3	3	2	2									
	Pitch (in)	0.2	0.2	0.25	0.25	0.333	0.333	0.333	0.333									
	Turns to Open	15	17	17	22	22	28	34	40									
	Touque (N.m)	165	224	281	559	1407	2913	5748	8332									

Globe Valve

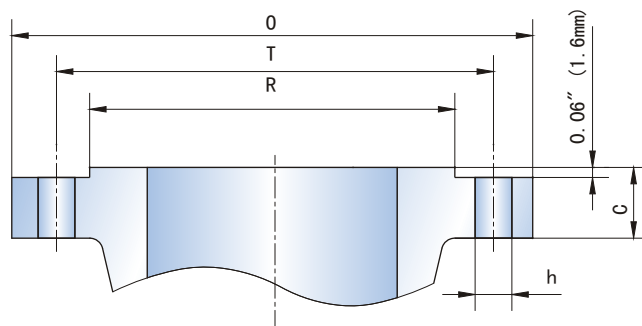
CLASS	ITEM	VALVE SIZE							
		2"	2.5"	3"	4"	6"	8"	10"	12"
150	Stem Thread O.D.	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 5/8"
	Thread Per Inch	5	5	5	5	4	4	4	3
	Pitch (in)	0.2	0.2	0.2	0.2	0.25	0.25	0.25	0.333
	Turns to Open	4	7	5	8	7	9	10	7
	Touque (N.m)	47	66	84	157	239	326	620	1198
300	Stem Thread O.D.	3/4"	7/8"	1"	1 1/8"	1 3/8"	1 1/2"	1 5/8"	1 3/4"
	Thread Per Inch	5	5	5	5	4	4	3	3
	Pitch (in)	0.2	0.2	0.2	0.2	0.25	0.25	0.333	0.333
	Turns to Open	4	8	7	8	7	9	9	9
	Touque (N.m)	62	85	118	218	727	1309	2160	3100
600	Stem Thread O.D.	7/8"	1"	1 1/8"	1 1/4"	1 5/8"	1 3/4"	2"	2 1/8"
	Thread Per Inch	5	5	5	4	3	3	3	3
	Pitch (in)	0.2	0.2	0.2	0.25	0.333	0.333	0.333	0.333
	Turns to Open	8	8	8	8	9	9	9	9
	Touque (N.m)	142	244	316	602	1590	2782	4579	6216
900	Stem Thread O.D.	1 1/8"	1 1/4"	1 1/4"	1 3/8"	1 3/4"	2"		
	Thread Per Inch	5	4	4	4	3	3		
	Pitch (in)	0.2	0.25	0.25	0.25	0.333	0.333		
	Turns to Open	8	7	7	8	9	9		
	Touque (N.m)	285	412	528	1063	1792	3439		
1500	Stem Thread O.D.	1 1/8"	1 1/4"	1 3/8"	1 1/2"	2"	2 1/4"		
	Thread Per Inch	5	4	4	4	3	3		
	Pitch (in)	0.2	0.25	0.25	0.25	0.333	0.333		
	Turns to Open	8	7	7	8	9	9		
	Touque (N.m)	352	772	876	1816	3868	5011		
2500	Stem Thread O.D.	1 1/4"	1 1/2"	1 5/8"	1 3/4"	2"	2 1/2"		
	Thread Per Inch	4	4	3	3	3	3		
	Pitch (in)	0.25	0.25	0.333	0.333	0.333	0.333		
	Turns to Open	7	7	6	6	9	9		
	Touque (N.m)	502	824	959	2062	6530	9682		



Steel End Flange Dimensions

Class 150-300

CLASS 150 300 RF



CLASS	SIZE		O		R		C		T		h		Bolt	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY.	Diameter
150	2	50	6.00	152	3.62	92	0.62	16	4.75	120.5	0.75	19	4	5/8
	2 1/2	65	7.00	178	4.12	105	0.69	18	5.50	139.5	0.75	19	4	5/8
	3	80	7.50	190	5.00	127	0.75	19	6.00	152.5	0.75	19	4	5/8
	4	100	9.00	229	6.19	157	0.94	24	7.50	190.5	0.75	19	8	5/8
	6	150	11.00	279	8.50	216	1.00	26	9.50	241.5	0.88	22	8	3/4
	8	200	13.50	343	10.62	270	1.12	29	11.75	298.5	0.88	22	8	3/4
	10	250	16.00	406	12.75	324	1.19	31	14.25	362	1.00	25	12	7/8
	12	300	19.00	483	15.00	381	1.25	32	17.00	432	1.00	25	12	7/8
	14	350	21.00	533	16.25	413	1.38	35	18.75	476	1.12	29	12	1
	16	400	23.50	597	18.50	470	1.44	37	21.25	540	1.12	29	16	1
	18	450	25.00	635	21.00	533	1.56	40	22.75	578	1.25	32	16	1 1/8
	20	500	27.50	699	23.00	584	1.69	43	25.00	635	1.25	32	20	1 1/8
	24	600	32.00	813	27.25	692	1.88	48	29.50	749.5	1.38	35	20	1 1/4
	28	700	36.50	927	31.50	800	2.81	72	34.00	863.5	1.38	35	28	1 1/4
30	750	38.75	984	33.75	857	2.94	75	36.00	914.5	1.38	35	28	1 1/4	
32	800	41.75	1060	36.00	914	3.19	81	38.50	978	1.62	41	28	1 1/2	
36	900	46.00	1168	40.25	1022	3.56	91	42.75	1086	1.62	41	32	1 1/2	
300	2	50	6.50	165	3.62	92	0.88	23	5.00	127	0.75	19	8	5/8
	2 1/2	65	7.50	190	4.12	105	1.00	26	5.88	149	0.88	22	8	3/4
	3	80	8.25	210	5.00	127	1.12	29	6.62	168	0.88	22	8	3/4
	4	100	10.00	254	6.19	157	1.25	32	7.88	200	0.88	22	8	3/4
	6	150	12.50	318	8.50	216	1.44	37	10.62	270	0.88	22	12	3/4
	8	200	15.00	381	10.62	270	1.62	42	13.00	330	1.00	25	12	7/8
	10	250	17.50	445	12.75	324	1.88	48	15.25	387.5	1.12	29	16	1
	12	300	20.50	521	15.00	381	2.00	51	17.75	451	1.25	32	16	1 1/8
	14	350	23.00	584	16.25	413	2.12	54	20.25	514.5	1.25	32	20	1 1/8
	16	400	25.50	648	18.50	470	2.25	58	22.50	571.5	1.38	35	20	1 1/4
	18	450	28.00	711	21.00	533	2.38	61	24.75	628.5	1.38	35	24	1 1/4
	20	500	30.50	775	23.00	584	2.50	64	27.00	686	1.38	35	24	1 1/4
	24	600	36.00	914	27.25	692	2.75	70	32.00	813	1.62	41	24	1 1/2
	28	700	40.75	1035	31.50	800	3.38	86	37.00	940	1.75	45	28	1 5/8
30	750	43.00	1092	33.75	857	3.62	92	39.25	997	1.88	48	28	1 3/4	

End Flange Dimensions: Size 2"-24" to ASME B16.5, Size 28"-36" to ASME B16.47 A .

Tolerances: Unit inch

Thickness C: NPS ≤ 18" +0.12, -0
 NPS ≥ 20 +0.19, -0

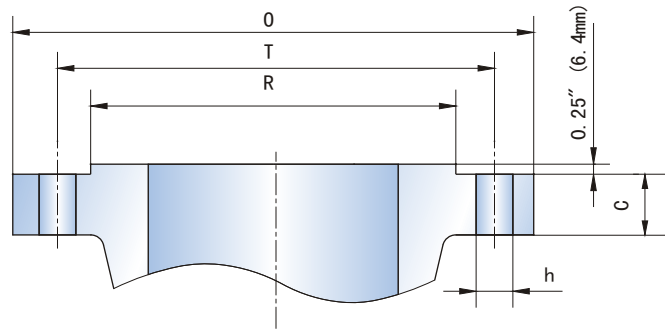
Drilling and Facing: Bolt Circle Diameter h: ± 0.06
 Center to Center of Adjacent Bolt Holes: ± 0.03

Eccentricity Between Bolt Circle Diameter and Machined Facing Diameters:
 NPS ≤ 2 1/2" ± 0.03
 NPS ≥ 2 1/2" ± 0.06

Outside Diameter R: 0.06 Raised Face: ± 0.03
 0.25 Raised Face: ± 0.02



CLASS 600-2500 RF



CLASS	SIZE		O		R		C		T		h		Bolt	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	QTY.	Diameter
600	2	50	6.50	165	3.62	92	1.00	26	5.00	127	0.75	19	8	5/8
	2 1/2	65	7.50	190	4.12	105	1.12	29	5.88	149	0.88	22	8	3/4
	3	80	8.25	210	5.00	127	1.25	32	6.62	168	0.88	22	8	3/4
	4	100	10.75	273	6.19	157	1.50	38	8.50	216	1.00	25	8	7/8
	6	150	14.00	356	8.50	216	1.88	48	11.50	292	1.12	29	12	1
	8	200	16.50	419	10.62	270	2.19	56	13.75	349	1.25	32	12	1 1/8
	10	250	20.00	508	12.75	324	2.50	64	17.00	432	1.38	35	16	1 1/4
	12	300	22.00	559	15.00	381	2.62	67	19.25	489	1.38	35	20	1 1/4
	14	350	23.75	603	16.25	413	2.75	70	20.75	527	1.50	38	20	1 3/8
	16	400	27.00	686	18.50	470	3.00	77	23.75	603	1.62	41	20	1 1/2
	18	450	29.25	743	21.00	533	3.25	83	25.75	654	1.75	44	20	1 5/8
	20	500	32.00	813	23.00	584	3.50	89	28.50	724	1.75	44	24	1 5/8
24	600	37.00	940	27.25	692	4.00	102	33.00	838	2.00	51	24	1 7/8	
900	2	50	8.50	216	3.62	92	1.50	38.5	6.50	165.1	1.00	26	8	7/8
	2 1/2	65	9.62	244	4.12	105	1.62	41.5	7.50	190.5	1.12	29	8	1
	3	80	9.50	241	5.00	127	1.50	38.5	7.50	190.5	1.00	26	8	7/8
	4	100	11.50	292	6.19	157	1.75	44.5	9.25	234.9	1.25	32	8	1 1/8
	6	150	15.00	381	8.50	216	2.19	56.0	12.50	317.5	1.25	32	12	1 1/8
	8	200	18.50	470	10.62	270	2.50	63.5	15.50	393.7	1.50	39	12	1 3/8
	10	250	21.50	545	12.75	324	2.75	70.0	18.50	469.9	1.50	39	16	1 3/8
	12	300	24.00	610	15.00	381	3.12	79.5	21.00	533.4	1.50	39	20	1 3/8
	14	350	25.25	640	16.25	413	3.38	86.0	22.00	558.8	1.62	42	20	1 1/2
	16	400	27.75	705	18.50	470	3.50	89.0	24.25	615.9	1.75	45	20	1 5/8
	18	450	31.00	785	21.00	533	4.00	102.0	27.00	685.8	2.00	51	20	1 7/8
	20	500	33.75	855	23.00	584	4.25	108.0	29.50	749.3	2.12	54	20	2
24	600	41.00	1040	27.25	692	5.50	140.0	35.50	901.7	2.62	67	20	2 1/2	
1500	2	50	8.50	216	3.62	92	1.50	38.5	6.50	165.1	1.00	26	8	1
	2 1/2	65	9.62	244	4.12	105	1.62	41.5	7.50	190.5	1.12	29	8	1 1/8
	3	80	10.50	267	5.00	127	1.88	48.0	8.00	203.2	1.25	32	8	1 1/4
	4	100	12.25	311	6.19	157	2.12	54.0	9.50	241.3	1.38	35	8	1 3/8
	6	150	15.50	394	8.50	216	3.25	83.0	12.50	317.5	1.50	39	12	1 1/2
	8	200	19.00	483	10.62	270	3.62	92.9	15.50	393.7	1.75	45	12	1 3/4
	10	250	23.00	585	12.75	324	4.25	108.0	19.00	482.6	2.00	51	12	2
	12	300	26.50	675	15.00	381	4.88	124.0	22.50	571.5	2.12	54	16	2 1/8
	14	350	29.50	750	16.25	413	5.25	133.5	25.00	635.0	2.38	61	16	2 3/8
	16	400	32.50	825	18.50	470	5.75	146.5	27.75	704.8	2.62	67	16	2 5/8
	18	450	36.00	915	21.00	533	6.38	162.0	30.50	774.7	2.88	74	16	2 7/8
	20	500	38.75	985	23.00	584	7.00	178.0	32.75	831.8	3.12	80	16	3 1/8
24	600	46.00	1170	27.25	692	8.00	203.5	39.00	990.6	3.62	93	16	3 5/8	
2500	2	50	9.25	235	3.62	92	2.00	51.0	6.75	171.4	1.12	29	8	1
	2 1/2	65	10.50	267	4.12	105	2.25	57.5	7.75	196.8	1.25	32	8	1 1/8
	3	80	12.00	305	5.00	127	2.62	67.0	9.00	228.6	1.38	35	8	1 1/4
	4	100	14.00	356	6.19	157	3.00	76.5	10.75	273.0	1.62	42	8	1 1/2
	6	150	19.00	483	8.50	216	4.25	108.0	14.50	368.3	2.12	54	8	2
	8	200	21.75	550	10.62	270	5.00	127.0	17.25	438.1	2.12	54	12	2
	10	250	26.50	675	12.75	324	6.50	165.5	21.25	539.7	2.62	67	12	2 1/2
12	300	30.00	760	15.00	381	7.25	184.5	24.38	619.1	2.88	74	12	2 3/4	

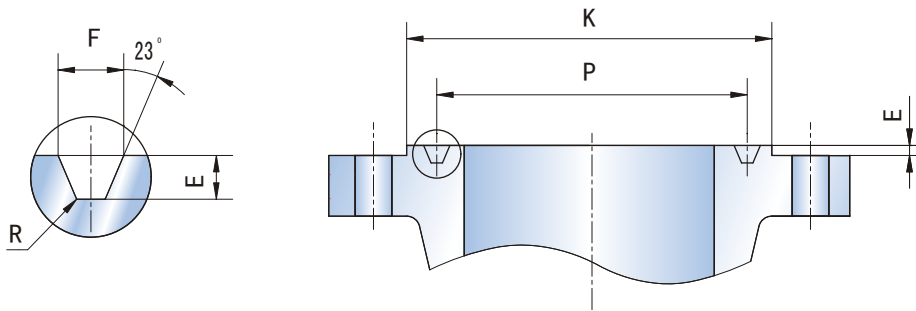
End Flange Dimensions: ASME B16.5

Tolerances: the Same as Class 150 300



Dimensions of Ring Joint Facing Class 150-2500

CLASS 150-2500 RTJ



CLASS	SIZE		Ring No.	P		E		F		R		K	
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm
150	2	50	R22	3.250	82.55	0.250	6.35	0.344	8.74	0.03	0.8	4.00	102
	2 1/2	65	R25	4.000	101.60	0.250	6.35	0.344	8.74	0.03	0.8	4.75	121
	3	80	R29	4.500	114.30	0.250	6.35	0.344	8.74	0.03	0.8	5.25	133
	4	100	R36	5.875	149.22	0.250	6.35	0.344	8.74	0.03	0.8	6.75	171
	6	150	R43	7.625	193.68	0.250	6.35	0.344	8.74	0.03	0.8	8.62	219
	8	200	R48	9.750	247.65	0.250	6.35	0.344	8.74	0.03	0.8	10.75	273
	10	250	R52	12.000	304.80	0.250	6.35	0.344	8.74	0.03	0.8	13.00	330
	12	300	R56	15.000	381.00	0.250	6.35	0.344	8.74	0.03	0.8	16.00	406
	14	350	R59	15.625	396.88	0.250	6.35	0.344	8.74	0.03	0.8	16.75	425
	16	400	R64	17.875	454.02	0.250	6.35	0.344	8.74	0.03	0.8	19.00	483
	18	450	R68	20.375	517.52	0.250	6.35	0.344	8.74	0.03	0.8	21.50	546
	20	500	R72	22.000	558.80	0.250	6.35	0.344	8.74	0.03	0.8	23.50	597
	24	600	R76	26.500	673.10	0.250	6.35	0.344	8.74	0.03	0.8	28.00	711
	28	700	R94	31.500	800.10	0.500	12.7	0.781	19.844	0.06	1.5	33.88	861
	30	750	R95	33.750	857.25	0.500	12.7	0.781	19.844	0.06	1.5	36.12	917
	32	800	R96	36.000	914.40	0.562	14.3	0.906	23.019	0.09	2.3	38.75	984
36	900	R98	40.250	1022.35	0.562	14.3	0.906	23.019	0.09	2.3	40.75	1035	
300	2	50	R23	3.250	82.55	0.312	7.92	0.469	11.91	0.03	0.8	4.25	108
	2 1/2	65	R26	4.000	101.60	0.312	7.92	0.469	11.91	0.03	0.8	5.00	127
	3	80	R31	4.875	123.82	0.312	7.92	0.469	11.91	0.03	0.8	5.75	146
	4	100	R37	5.875	149.22	0.312	7.92	0.469	11.91	0.03	0.8	6.88	175
	6	150	R45	8.312	211.13	0.312	7.92	0.469	11.91	0.03	0.8	9.50	241
	8	200	R49	10.625	269.88	0.312	7.92	0.469	11.91	0.03	0.8	11.88	302
	10	250	R53	12.750	323.85	0.312	7.92	0.469	11.91	0.03	0.8	14.00	356
	12	300	R57	15.000	381.00	0.312	7.92	0.469	11.91	0.03	0.8	16.25	413
	14	350	R61	16.500	419.10	0.312	7.92	0.469	11.91	0.03	0.8	18.00	457
	16	400	R65	18.500	469.90	0.312	7.92	0.469	11.91	0.03	0.8	20.00	508
	18	450	R69	21.000	533.40	0.312	7.92	0.469	11.91	0.03	0.8	22.62	575
	20	500	R73	23.000	584.20	0.375	9.52	0.531	13.49	0.06	1.5	25.00	635
	24	600	R77	27.250	692.15	0.438	11.13	0.656	16.66	0.06	1.5	29.50	749
	28	700	R94	31.500	800.10	0.500	12.7	0.781	19.84	0.06	1.5	33.88	861
	30	750	R95	33.750	857.25	0.500	12.7	0.781	19.84	0.06	1.5	36.12	917

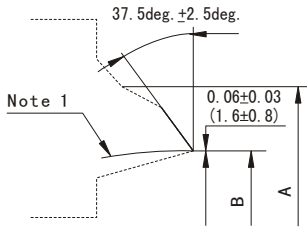
CLASS	SIZE		Ring No.	P		E		F		R		K		
	in	mm		in	mm	in	mm	in	mm	in	mm	in	mm	
900	2	50	R24	3.750	95.25	0.312	7.92	0.469	11.91	0.03	0.8	4.88	124	
	2 1/2	65	R27	4.250	107.95	0.312	7.92	0.469	11.91	0.03	0.8	5.38	137	
	3	80	R31	4.875	123.82	0.312	7.92	0.469	11.91	0.03	0.8	6.12	156	
	4	100	R37	5.875	149.22	0.312	7.92	0.469	11.91	0.03	0.8	7.12	181	
	6	150	R45	8.312	211.12	0.312	7.92	0.469	11.91	0.03	0.8	9.50	241	
	8	200	R49	10.625	269.88	0.312	7.92	0.469	11.91	0.03	0.8	12.12	308	
	10	250	R53	12.750	323.85	0.312	7.92	0.469	11.91	0.03	0.8	14.25	362	
	12	300	R57	15.000	381.00	0.312	7.92	0.469	11.91	0.03	0.8	16.50	419	
	14	350	R62	16.500	419.10	0.438	11.13	0.656	16.66	0.06	1.5	18.38	467	
	16	400	R66	18.500	469.90	0.438	11.13	0.656	16.66	0.06	1.5	20.62	524	
	18	450	R70	21.000	533.40	0.500	12.70	0.781	19.84	0.06	1.5	23.38	594	
	20	500	R74	23.000	584.20	0.500	12.70	0.781	19.84	0.06	1.5	25.50	648	
	24	600	R78	27.250	692.15	0.625	15.88	1.062	26.97	0.09	2.3	30.38	772	
	1500	2	50	R24	3.750	95.25	0.312	7.92	0.469	11.91	0.03	0.8	4.88	124
		2 1/2	65	R27	4.250	107.95	0.312	7.92	0.469	11.91	0.03	0.8	5.38	137
		3	80	R35	5.375	136.52	0.312	7.92	0.469	11.91	0.03	0.8	6.62	168
4		100	R39	6.375	161.92	0.312	7.92	0.469	11.91	0.03	0.8	7.62	194	
6		150	R46	8.312	211.12	0.375	9.52	0.531	13.49	0.06	1.5	9.75	248	
8		200	R50	10.625	269.88	0.438	11.13	0.656	16.66	0.06	1.5	12.50	318	
10		250	R54	12.750	323.85	0.438	11.13	0.656	16.66	0.06	1.5	14.62	371	
12		300	R58	15.000	381.00	0.562	14.27	0.906	23.01	0.06	1.5	17.25	438	
14		350	R63	16.500	419.10	0.625	15.88	1.062	26.97	0.09	2.3	19.25	489	
16		400	R67	18.500	469.90	0.688	17.48	1.188	30.18	0.09	2.3	21.50	546	
18		450	R71	21.000	533.40	0.688	17.48	1.188	30.18	0.09	2.3	24.12	613	
20		500	R75	23.000	584.20	0.688	17.48	1.312	33.32	0.09	2.3	26.50	673	
24		600	R79	27.250	692.15	0.812	20.62	1.438	36.53	0.09	2.3	31.25	794	
2500		2	50	R26	4.000	101.60	0.312	7.92	0.469	11.91	0.03	0.8	5.25	133
		2 1/2	65	R28	4.375	111.12	0.375	9.52	0.531	13.49	0.03	0.8	5.88	149
		3	80	R32	5.000	127.00	0.375	9.52	0.531	13.49	0.06	1.5	6.62	168
	4	100	R38	6.188	157.18	0.438	11.13	0.656	16.66	0.06	1.5	8.00	203	
	6	150	R47	9.000	228.60	0.500	12.70	0.781	19.84	0.06	1.5	11.00	279	
	8	200	R51	11.000	279.40	0.562	14.27	0.906	23.01	0.06	1.5	13.38	340	
	10	250	R55	13.500	342.90	0.688	17.48	1.188	30.18	0.09	2.3	16.75	425	
	12	300	R60	16.000	406.40	0.688	17.48	1.312	33.32	0.09	2.3	19.50	495	

End Flange Dimensions: Size 2"-24" to ASME B16.5, Size 28"-36" to ASME B16.47 A.

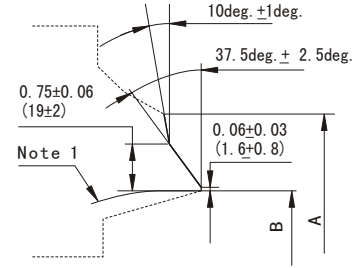
Tolerances: Unit inch

- Depth E: + 0.016, -0
- Width F: ± 0.008
- Pith Diameter P: ± 0.005
- Radius at Bottom R: R ≤ 0.06 ± 0.03, 0
- R ≥ 0.06 ± 0.03
- Angle 23 Deg.: ± 0.5 Deg.

Buttwelding End Dimensions



Note 1 Internal surface may be formed or machined for dimension B at root face. Contour within the envelope shall be in accordance with section.



Wall Thicknesses Not Over 0.88in (22mm)
Welding End Detail for joint Without Backing Ring

Wall Thicknesses Over 0.88in (22mm)
Welding End Detail for joint Without Backing Ring

Nominal Pipe Size		Schedule No. [Note(1)]	O.D. at Welding Ends				B		C [Note(3)]		t	
			Wrought or Fabricated Components, A [Note(1)]		Cast Steel Valves, A [Note(2)]							
DN	NPS		mm	in	mm	in	mm	in	mm	in	mm	in
65	2 1/2	40	73.0	2.88	75	2.96	62.5	2.469	62.93	2.479	5.16	0.203
		80					59	2.323	59.69	2.351	7.01	0.276
		160					54	2.125	55.28	2.178	9.53	0.375
		XXS					45	1.771	47.43	1.868	14.02	0.552
80	3	40	88.9	3.50	91	3.59	78	3.068	78.25	3.081	5.49	0.216
		80					73.5	2.900	74.53	2.934	7.62	0.300
		160					66.5	2.624	68.38	2.692	11.13	0.438
		XXS					58.5	2.300	61.19	2.409	15.24	0.600
90	3 1/2	40	101.6	4.00	105	4.12	90	3.548	90.52	3.564	5.74	0.226
		80					85.5	3.364	86.42	3.402	8.08	0.318
100	4	40	114.3	4.50	117	4.62	102	4.026	102.73	4.044	6.02	0.237
		80					97	3.826	98.28	3.869	8.56	0.337
		120					92	3.624	93.78	3.692	11.13	0.438
		160					87.5	3.438	89.65	3.530	13.49	0.531
		XXS					80	3.152	83.30	3.279	17.12	0.674
125	5	40	141.3	5.56	144	5.69	128	5.047	128.80	5.070	6.55	0.258
		80					122	4.813	123.58	4.866	9.53	0.375
		120					116	4.563	118.04	4.647	12.70	0.500
		160					109.5	4.313	112.47	4.428	15.88	0.625
		XXS					103	4.063	106.92	4.209	19.05	0.750
150	6	40	168.3	6.62	172	6.78	154	6.065	154.82	6.094	7.11	0.280
		80					146.5	5.761	148.06	5.828	10.97	0.432
		120					140	5.501	142.29	5.600	14.27	0.562
		160					132	5.187	135.31	5.326	18.26	0.719
		XXS					124.5	4.897	128.85	5.072	21.95	0.864
200	8	40	219.1	8.62	223	8.78	203	7.981	203.75	8.020	8.18	0.322
		60					198.5	7.813	200.02	7.873	10.31	0.406
		80					193.5	7.625	195.84	7.709	12.70	0.500
		100					189	7.437	191.65	7.544	15.09	0.594
		120					182.5	7.187	186.11	7.326	18.26	0.719
		140					178	7.001	181.98	7.163	20.62	0.812
		XXS					174.5	6.875	179.16	7.053	22.23	0.875
		160					173	6.813	177.79	6.998	23.01	0.906
250	10	40	273.0	10.75	278	10.94	254.5	10.020	255.74	10.070	9.27	0.365
		60					247.5	9.750	249.74	9.834	12.70	0.500
		80					243	9.562	245.55	9.670	15.09	0.594
		100					236.5	9.312	240.01	9.451	18.26	0.719
		120					230	9.062	234.44	9.232	21.44	0.844
		140					222	8.750	227.51	8.959	25.40	1.000
		XXS					216	8.500	221.95	8.740	28.58	1.125
		160					216	8.500	221.95	8.740	28.58	1.125
300	12	STD	323.8	12.75	329	12.97	305	12.000	306.08	12.053	9.53	0.375
		40					303	11.938	304.72	11.999	10.31	0.406
		XS					298.5	11.750	300.54	11.834	12.70	0.500
		60					295	11.626	297.79	11.725	14.27	0.562
		80					289	11.374	292.17	11.505	17.48	0.688
		100					281	11.062	285.24	11.232	21.44	0.844
		120					273	10.750	278.31	10.959	25.40	1.000
		140					266.5	10.500	272.75	10.740	28.58	1.125
160	257	10.126	264.45	10.413	33.32	1.312						
350	14	STD	355.6	14.00	362	14.25	336.5	13.250	337.88	13.303	9.53	0.375
		40					333.5	13.124	335.08	13.192	11.13	0.438
		XS					330	13.000	332.34	13.084	12.70	0.500
		60					325.5	12.812	328.15	12.920	15.09	0.594
		80					317.5	12.500	321.22	12.646	19.05	0.750
		100					308	12.124	312.86	12.318	23.83	0.938
		120					300	11.812	305.93	12.044	27.79	1.094
		140					292	11.500	299.00	11.771	31.75	1.250
		XXS					284	11.188	292.07	11.498	35.71	1.406
		160					284	11.188	292.07	11.498	35.71	1.406



Buttwelding End Dimensions

Nominal Pipe Size		Schedule No. [Note(1)]	O.D. at Welding Ends				B		C [Note(3)]		t	
			Wrought or Fabricated Components, A [Note(1)]		Cast Steel Valves, A [Note(2)]							
			DN	NPS	mm	in	mm	in	mm	in	mm	in
400	16	STD	406.4	16.00	413	16.25	387.5	15.250	388.68	15.303	9.53	0.375
		40				381	15.000	383.14	15.084	12.70	0.500	
		60				373	14.688	376.21	14.811	16.66	0.656	
		80				363.5	14.312	367.84	14.482	21.44	0.844	
		100				354	13.938	359.53	14.155	26.19	1.031	
		120				344.5	13.562	351.18	13.826	30.96	1.219	
		140				333.5	13.124	341.43	13.422	36.53	1.438	
		160				325.5	12.812	334.50	13.170	40.49	1.594	
450	18	STD	457.2	18.00	464	18.28	438	17.250	439.48	17.303	9.53	0.375
		XS				432	17.000	433.94	17.084	12.70	0.500	
		40				428.5	16.876	431.19	16.975	14.27	0.562	
		60				419	16.500	422.82	16.646	19.05	0.750	
		80				409.5	16.124	414.46	16.318	23.83	0.938	
		100				398.5	15.688	404.78	15.936	29.36	1.156	
		120				387.5	15.250	395.03	15.553	34.93	1.375	
		160				378	14.876	386.77	15.225	39.67	1.562	
500	20	STD	508.0	20.00	516	20.31	489	19.250	490.28	19.303	9.53	0.375
		XS				482.5	19.000	484.74	19.084	12.70	0.500	
		40				478	18.812	480.55	18.920	15.09	0.594	
		60				467	18.376	470.88	18.538	20.62	0.812	
		80				455.5	17.938	461.13	18.155	26.19	1.031	
		100				443	17.438	450.02	17.717	32.54	1.281	
		120				432	17.000	440.29	17.334	38.10	1.500	
		160				419	16.500	429.17	16.896	44.45	1.750	
550	22	STD	558.8	22.00	567	22.34	539	21.250	541.08	21.303	9.53	0.375
		XS				533	21.000	535.54	21.084	12.70	0.500	
		60				514	20.250	518.86	20.428	22.23	0.875	
		80				501	19.750	507.75	19.990	28.58	1.125	
		100				488.5	19.250	496.63	19.553	34.93	1.375	
		120				476	18.750	485.52	19.115	41.28	1.625	
		140				463	18.250	474.41	18.678	47.63	1.875	
		160				450.5	17.750	463.30	18.240	53.98	2.125	
600	24	STD	609.6	24.00	619	24.38	590.5	23.250	591.88	23.303	9.53	0.375
		XS				584	23.000	586.34	23.084	12.70	0.500	
		30				581	22.876	583.59	22.975	14.27	0.562	
		40				574.5	22.624	577.97	22.755	17.48	0.688	
		60				560.5	22.062	565.49	22.263	24.61	0.969	
		80				547.5	21.562	554.38	21.826	30.96	1.219	
		100				532	20.938	540.49	21.280	38.89	1.531	
		160				517.5	20.376	528.03	20.788	46.02	1.812	
650	26	10	660.4	26.00	670	26.38	645.5	25.376	645.50	25.413	7.92	0.312
		20				635	25.000	637.14	25.084	12.70	0.500	
		30				679.5	26.750	682.37	26.865	15.88	0.625	
700	28	10	711.2	28.00	721	28.38	695.5	27.376	696.30	27.413	7.92	0.312
		20				686	27.000	687.94	27.084	12.70	0.500	
		30				746	29.376	747.10	29.413	7.92	0.312	
750	30	10	762.0	30.00	772	30.38	736.5	29.000	738.74	29.084	12.70	0.500
		20				730	28.750	733.17	28.865	15.88	0.625	
		30				797	31.376	797.90	31.413	7.92	0.312	
800	32	10	812.8	32.00	825	32.50	787.5	31.000	789.54	31.084	12.70	0.500
		20				781	30.750	783.97	30.865	15.88	0.625	
		30				778	30.624	781.17	30.755	17.48	0.688	
		40				848	33.376	848.70	33.413	7.92	0.312	
850	34	10	863.6	34.00	876	34.50	838	33.000	840.34	33.084	12.70	0.500
		20				832	32.750	834.77	32.865	15.88	0.625	
		30				828.5	32.624	831.97	32.755	17.48	0.688	
		40				899.5	35.376	899.50	35.413	7.92	0.312	
900	36	10	914.4	36.00	927	36.50	889	35.000	891.14	35.084	12.70	0.500
		20				882.5	34.750	885.57	34.865	15.88	0.625	
		30				876.5	34.500	880.02	34.646	19.05	0.750	
		40										

NOTES:

- (1) Letter designations signify
 - (a) STD = standard wall thickness
 - (b) XS = extra-strong wall thickness
 - (c) XXS = double extra-strong wall thickness
- (2) The diameters listed are not requirements. They are provided for the convenience of the user.
- (3) Internal machining for continuous backing rings for sizes DN 50 (NPS 2) and smaller is not contemplated.



Material	CHEMICAL COMPOSITIONS (%) max									MECHANICAL PROPERTIES				
	C	Mn	P	S	Si	Ni	Cr	Mo	Other	Tensile, min MPa (ksi)	Yield, min MPa (ksi)	Elongation min (%)	Reduction of Area min (%)	Hardness Brinell
WCB	0.30	1.00	0.04	0.045	0.60	0.50	0.50	0.20	Cu 0.30 V 0.03	485-655 (70-95)	250 (36)	22	35	
WC1	0.25	0.50~ 0.80	0.04	0.045	0.60	0.50	0.35	0.45~ 0.65	Cu 0.50 W 0.10	450-620 (65-90)	240 (35)	24	35	
WC6	0.05~ 0.20	0.50~ 0.80	0.04	0.045	0.60	0.50	1.00~ 1.50	0.45~ 0.65	Cu 0.50 W 0.10	485-655 (70-95)	275 (40)	20	35	
WC9	0.05~ 0.18	0.40~ 0.70	0.04	0.045	0.60	0.50	2.00~ 2.75	0.90~ 1.20	Cu 0.50 W 0.10	485-655 (70-95)	275 (40)	20	35	
C5	0.20	0.40~ 0.70	0.04	0.045	0.75	0.50	4.00~ 6.50	0.45~ 0.65	Cu 0.50 W 0.10	620-795 (90-115)	415 (60)	18	35	
C12	0.20	0.35~ 0.65	0.04	0.045	1.00	0.50	8.00~ 10.00	0.90~ 1.20	Cu 0.50 W 0.10	620-795 (90-115)	415 (60)	18	35	
CA15	0.15	1.00	0.04	0.040	1.50	1.00	11.50~ 14.00	0.50		620-795 (90-115)	450 (65)	18	30	
LCB	0.30	1.00	0.04	0.045	0.60	0.50	0.50	0.20	Cu 0.30 V 0.03	450-650 (65.0-90.0)	240 (35.0)	24	35	J (lbf · ft) 18 (13)
LCC	0.25	1.20	0.04	0.045	0.60	0.50	0.50	0.20	Cu 0.30 V 0.03	485-655 (70.0-95.0)	275 (40.0)	22	35	J (lbf · ft) 20 (15)
LC2	0.25	0.50~ 0.80	0.04	0.045	0.60	2.0~ 3.0				485-655 (70.0-95.0)	275 (40.0)	24	35	J (lbf · ft) 20 (15)
LC3	0.15	0.50~ 0.80	0.04	0.045	0.60	3.0~ 4.0				485-655 (70.0-95.0)	275 (40.0)	24	35	J (lbf · ft) 20 (15)
CF8	0.08	1.50	0.040	0.040	2.00	8.0~ 11.0	18.0~ 21.0			485 (70)	205 (30)	35		
CF8M	0.08	1.50	0.040	0.040	1.50	9.0~ 12.0	18.0~ 21.0	2.0~ 3.0		485 (70)	205 (30)	30		
CF3	0.03	1.50	0.040	0.040	2.00	8.0~ 12.0	17.0~ 21.0	0.50		485 (70)	205 (30)	35		
CF3M	0.03	1.50	0.040	0.040	1.50	9.0~ 13.0	17.0~ 21.0	2.0~ 3.0		485 (70)	205 (30)	30		
CF8C	0.08	1.50	0.040	0.040	2.00	9.0~ 12.0	18.0~ 21.0	0.50	Nb ≥ 8xC ≤ 1	485 (70)	205 (30)	30		
CN7M	0.07	1.50	0.040	0.040	1.50	27.5~ 30.5	19.0~ 22.0	2.0~ 3.0	Cu 3.0-4.0	450 (62)	170 (25)	35		
A105	0.35	0.60~ 1.05	0.040	0.050	0.35	0.40	0.30	0.12	Cu 0.40 V 0.03 Nb 0.02	485 (70)	250 (36)	22	30	≤ 187
F1	0.28	0.60~ 0.90	0.045	0.045	0.15~ 0.35			0.44~ 0.65		485 (70)	275 (40)	20	30	143-192
F5	0.15	0.30~ 0.60	0.030	0.030	0.50	0.50	4.0~ 6.0	0.44~ 0.65		485 (70)	275 (40)	20	35	143-217
F11-1	0.05~ 0.15	0.30~ 0.60	0.030	0.030	0.50~ 1.00		1.00~ 1.50	0.44~ 0.65		415 (60)	205 (30)	20	45	121-174
F22-1	0.05~ 0.15	0.30~ 0.60	0.040	0.040	0.50		2.00~ 2.50	0.87~ 1.13		415 (60)	205 (30)	20	35	≤ 170
F6a	0.15	1.00	0.040	0.030	1.00	0.50	11.5~ 13.5			585 (85)	380 (55)	18	35	167-229
F304	0.08	2.00	0.040	0.030	1.00	8.0~ 11.0	18.0~ 20.0			515 (75)	205 (30)	30	50	
F304L		2.00	0.040	0.030	1.00	8.0~ 13.0	18.0~ 20.0			485 (70)	170 (25)	30	50	



Materials

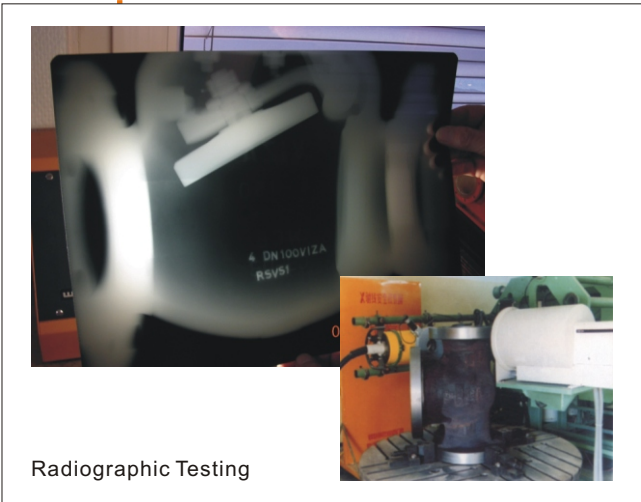
Material	CHEMICAL COMPOSITIONS (%) max									MECHANICAL PROPERTIES				
	C	Mn	P	S	Si	Ni	Cr	Mo	Other	Tensile, min MPa (ksi)	Yield, min MPa (ksi)	Elongation min (%)	Reduction of Area min (%)	Hardness Brinell
F316	0.08	2.00	0.040	0.030	1.00	10.0~14.0	16.0~18.0	2.00~3.00		515 (75)	205 (30)	30	50	
F316L	0.035	2.00	0.040	0.030	1.00	10.0~15.0	16.0~18.0	2.00~3.00		485 (70)	170 (25)	30	50	
F321	0.08	2.00	0.040	0.030	1.00	9.0~12.0	≥ 17.0		Ti ≥ 5xC ≤ 0.70	515 (75)	205 (30)	30	50	
F347	0.08	2.00	0.040	0.030	1.00	9.0~13.0	17.0~20.0		Nb+Ta ≥ 10xC ≤ 1.10	515 (75)	205 (30)	30	50	
410	0.15	1.00	0.040	0.030	1.00		11.50~13.50			480 (70)	275 (40)	20	45	
416	0.15	1.25	0.06	≥ 0.15	1.00		12.00~14.00							≤ 262
420	Over 0.15	1.00	0.040	0.030	1.00		12.00~14.00							≤ 241
D-2	3.00	0.70~1.25	0.08		1.50~3.00	18.00~22.00	1.75~2.75			400 (58)	207 (30)	8.0		139~202
B7	0.37~0.49	0.65~1.10	0.035	0.040	0.15~0.35		0.75~1.20	0.15~0.25		860 (125)	720 (105)	16	50	
B7M	0.37~0.49	0.65~1.10	0.035	0.040	0.15~0.35		0.75~1.20	0.15~0.25		690 (100)	550 (80)	18	50	≤ HB235 or HRB 99
B16	0.36~0.47	0.45~0.70	0.035	0.040	0.15~0.35		0.80~1.15	0.50~0.65	V 0.25~0.35	860 (125)	725 (105)	18	50	
B8	0.08	2.00	0.045	0.030	1.00	8.00~10.50	18.00~20.00			515 (75)	205 (30)	30	50	≤ HB223 or HRB 96
B8M	0.08	2.00	0.045	0.030	1.00	10.00~14.00	16.00~18.00	2.00~3.00		515 (75)	205 (30)	30	50	≤ HB223 or HRB 96
L7	0.38~0.48	0.75~1.00	0.035	0.040	0.15~0.35		0.80~1.10	0.15~0.25		860 (125)	725 (105)	16	50	
L7M	0.38~0.48	0.75~1.00	0.035	0.040	0.15~0.35		0.80~1.10	0.15~0.25		690 (100)	550 (80)	18	50	≤ HB235 or HRB 99
B			0.04	0.05						415-690 (60~100)		18		HRB121~212 HRC 69~95
2H	≥ 0.40	1.00	0.040	0.050	0.40									HB248~352 HRC24~38
2HM	≥ 0.40	1.00	0.040	0.050	0.40									HB159~237 HRC ≤ 22
4	0.40~0.50	0.70~0.90	0.035	0.040	0.15~0.35			0.20~0.30						HB248~352 HRC24~38
7	0.37~0.49	0.65~1.10	0.040	0.040	0.15~0.35		0.75~1.20	0.15~0.25						HB248~352 HRC24~38
7M	0.37~0.49	0.65~1.10	0.040	0.040	0.15~0.35		0.75~1.20	0.15~0.25						HB159~237 HRC ≤ 22
8	0.08	2.00	0.045	0.030	1.00	8.00~10.50	18.0~20.0							HB126~300 HRC60~105
8M	0.08	2.00	0.045	0.030	1.00	10.0~14.0	16.0~18.0	2.00~3.00						HB126~300 HRC60~105



Chemical Analysis with Spectrography



API591 Stem to Wedge Connection Testing (Physical Properties)



Radiographic Testing



Paint (Wall) Thickness Testing and Dye-penetrant Testing



Pressure Testing and Third Party Inspection



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