

**INDUSTRIAL**

**VALVES**

**FEVISA**

**GLOBE VALVE**



# Cast Steel Globe Valve

Impactor Handwheel, the mechanism is based on transmitting the momentum generated by the mass of the handwheel through the impact/impulse generated during the snap closure action of the handwheel. This type of handwheel is used when a standard handwheel cannot create enough closing force to effect a seal.

Stem Nut replaceable in the line.

Revolving rising stem with precision ACME thread.

Stem Packing is designed for optimum control of fugitive emissions leakage to the atmosphere. The ultra low emission leakage rate is assured by the fine finish in the stem, the reduced diametrical clearances and the stem straightness control.

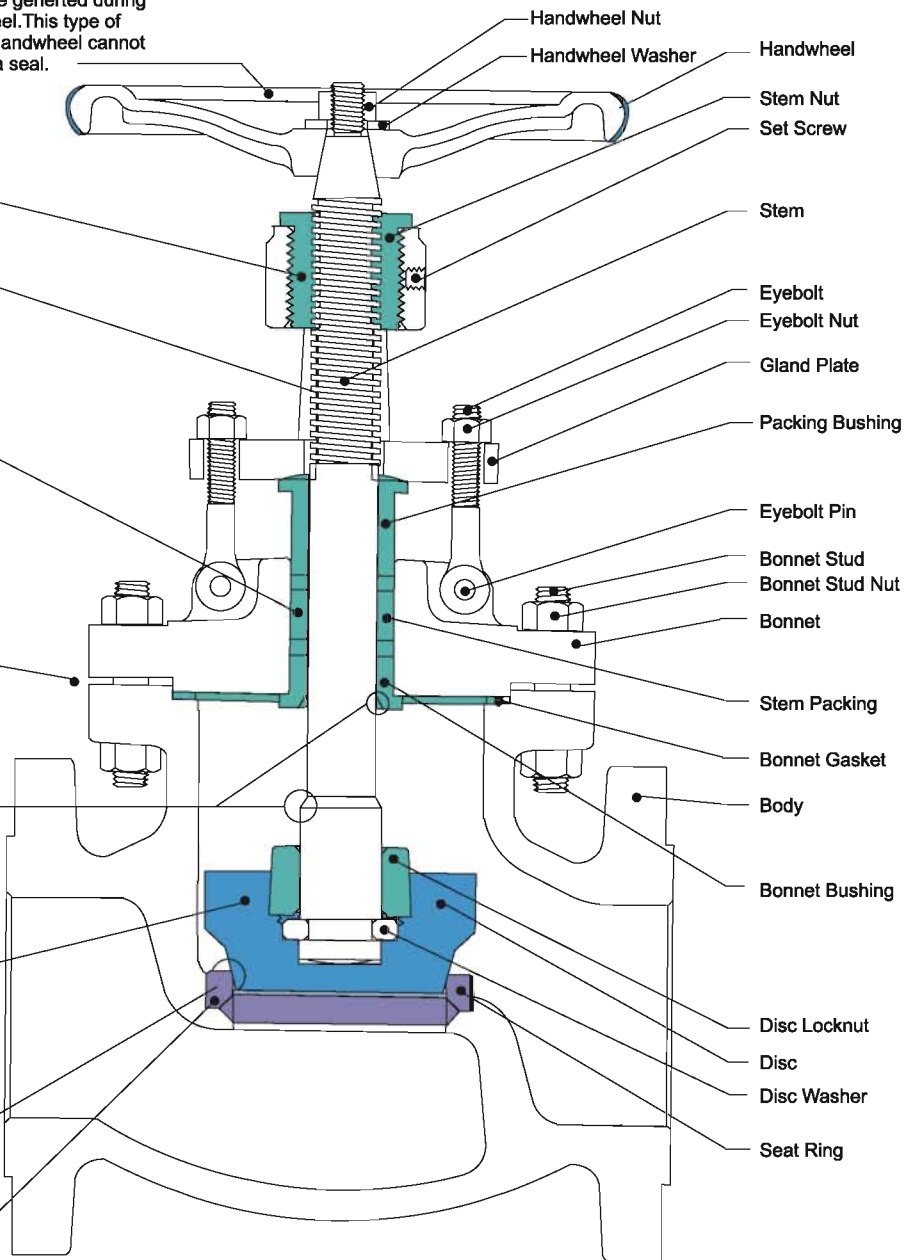
Body to Bonnet Joint designed to apply a uniform load to the gasket to assure a leak proof seal.

Backseat designed to relieve back pressure on the stem packing when fully seated. Replacing stem packing under pressure is not recommended.

Conical Disc, integrally guided to assure true alignment between disc and valve body. The loose disc design allows the disc and seat ring sealing surface to seat correctly without damage.

Stellite Seat Ring, providing increased resistance to wear, abrasion and erosion of the sealing surface.

Seat ring is seal welded to provide a bubble tight joint.



Handwheel Nut

Handwheel Washer

Handwheel

Stem Nut

Set Screw

Stem

Eyebolt

Eyebolt Nut

Gland Plate

Packing Bushing

Eyebolt Pin

Bonnet Stud

Bonnet Stud Nut

Bonnet

Stem Packing

Bonnet Gasket

Body

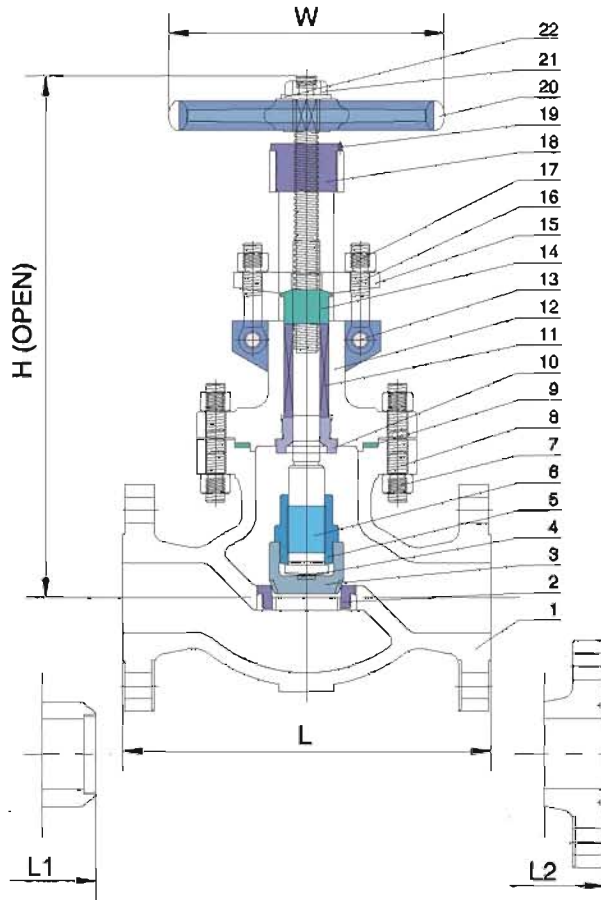
Bonnet Bushing

Disc Locknut

Disc

Disc Washer

Seat Ring



**FEATURES**

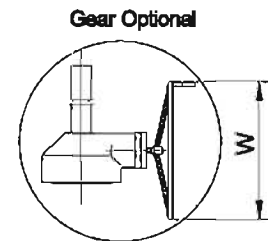
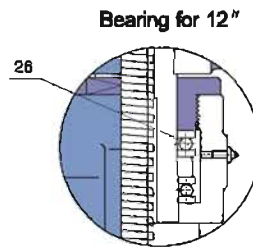
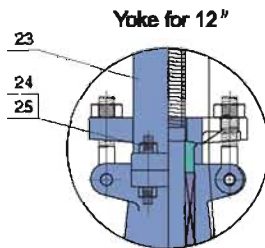
OS & Y, Rising Stem
Bolted Bonnet
Conic Disc
Extended Bonnet for Cryogenic Services
Impact hand wheel Optional
Gear Optional

**SPECIFICATIONS**

Design	ASME B16.34/BS1873
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

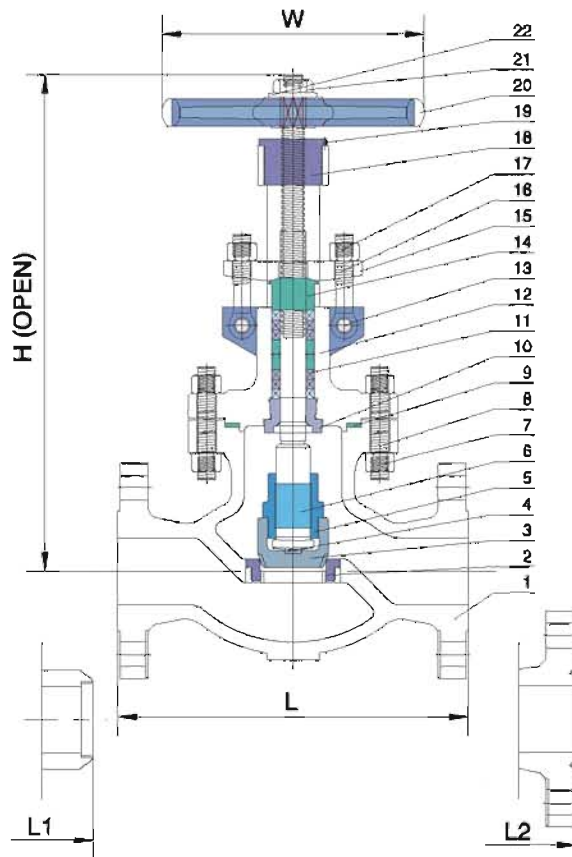
**STANDARD MATERIALS OF PARTS**

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 A278 Type 420
5	Disc Nut	ASTM A278 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt nuts	ASTM A194 GR.2H
8	Bonnet Bolt	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A278 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 A278 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 A438 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	218	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



**FEATURES**

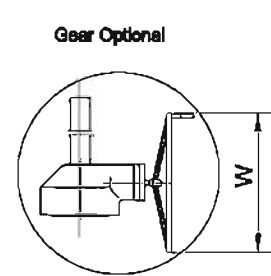
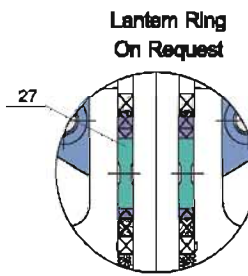
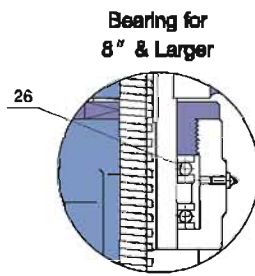
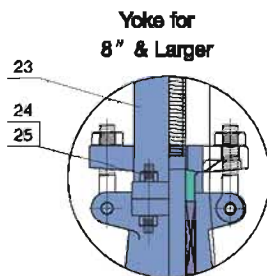
OS & Y, Rising Stem
Bolted Bonnet
Conic Disc
Extended Bonnet for Cryogenic Services
Impact hand wheel Optional
Gear Optional

**SPECIFICATIONS**

Design	ASME B16.34/BS1873
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 Bolt	ASTM A183 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 A183 GR.B7
26	Bearing	Steel



Dimensions and Weights										
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	
L/L1	mm	50	85	80	100	150	200	250	300	
	in	10.50	11.50	12.50	14.00	17.50	22.00	24.50	28.00	
L2	mm	267	292	318	356	445	559	622	711	
	in	11.12	12.12	13.12	14.62	18.12	22.62	25.12	28.62	
H	mm	283	308	333	371	480	575	638	727	
	in	14.57	18.68	17.32	20.87	24.41	35.83	37.36	40.63	
W	mm	370	474	440	525	620	910	949	1032	
	in	8	10	10	14	18	22	24	28	
Weight RF	mm	200	250	250	350	450	560	600	650	
	kg	28	48	56	82	154	240	319	632	

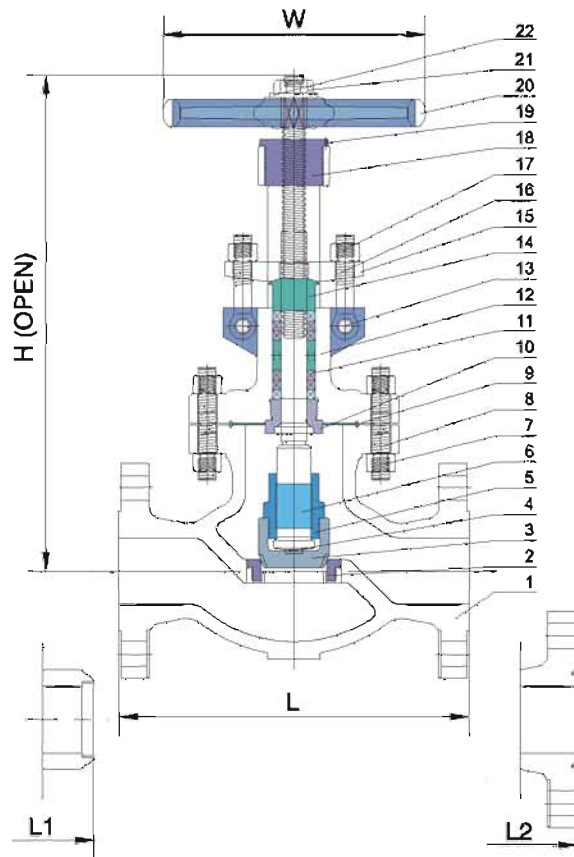


**FEATURES**

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

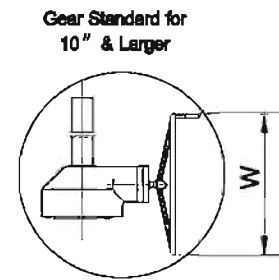
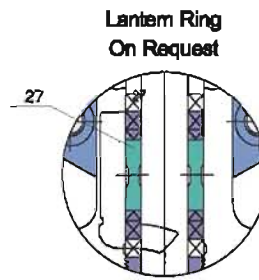
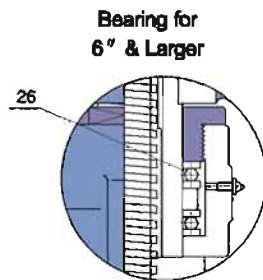
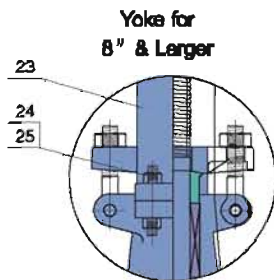
**SPECIFICATIONS**

Design	ASME B16.34/BB1873
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 A278 Type 420
5	Disc Nut	ASTM A278 Type 410
6	Stem	ASTM A182 GR.F8
7	Bonnet Bolt nuts	ASTM A194 GR.2H
8	Bonnet Bolt	ASTM A193 GR.B7
9	Gasket	Soft Iron
10	Backseat Bushing	ASTM A278 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 A278 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 A278 Type 410



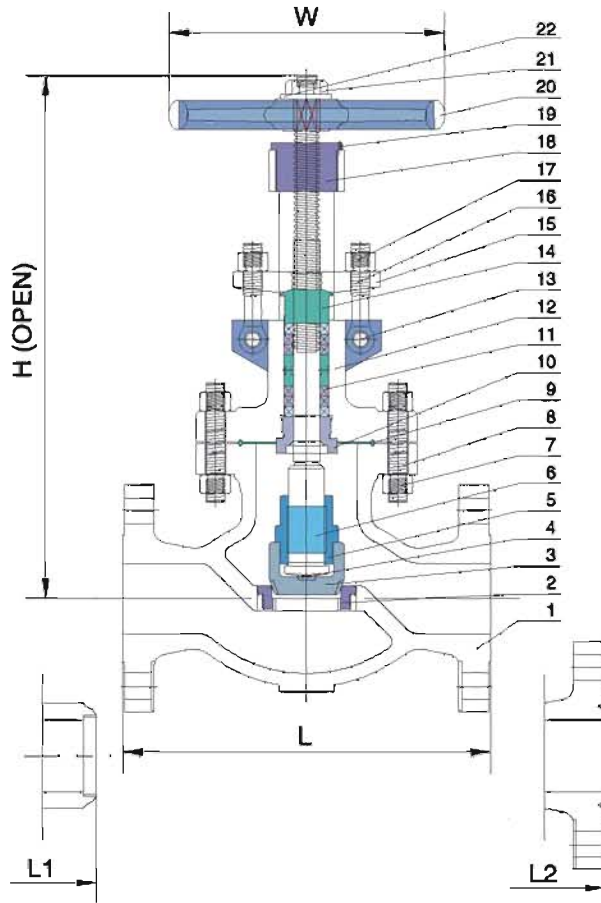
Dimensions and Weights									
SIZE		2"	2.5"	3"	4"	6"	8"	10"	12"
L/L1	in	11.50	13.00	14.00	17.00	22.00	28.00	31.00	33.00
	mm	292	330	356	432	559	660	787	838
L2	in	11.82	13.12	14.12	17.12	22.12	28.12	31.12	33.12
	mm	295	333	359	435	562	663	790	841
H	in	18.19	21.26	23.03	26.38	34.88	36.69	40.94	50.39
	mm	462	540	585	670	888	932	1040	1280
W	in	10	10	12	18	20	25	24	24
	mm	250	250	350	450	500	630	610	610
Weight RF	kg	36	70	85	123	404	450	700	900

**FEATURES**

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

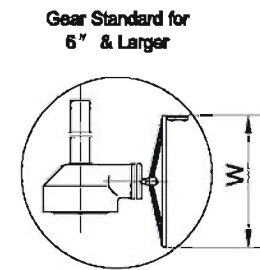
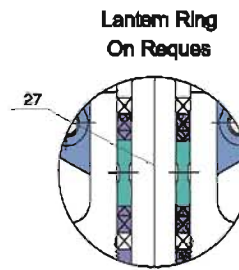
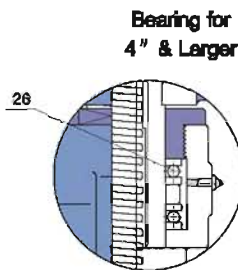
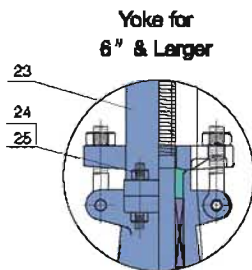
**SPECIFICATIONS**

Design	ASME B16.34/BS1873
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**

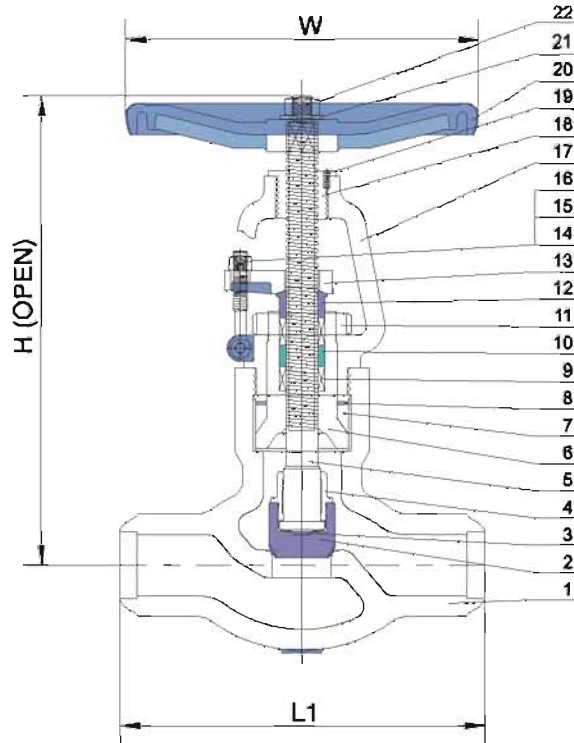
ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105+Stellite Faced
3	Disc	ASTM A105+Stellite Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt nuts	ASTM A194 GR.2H
8	Bonnet Bolt	ASTM A193 GR.B7
9	Gasket	Soft Iron
10	Backseat 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		CALSS 900						CALSS 1500						CALSS 2500					
SIZE	In	2"	2.5"	3"	4"	6"	8"	2"	2.5"	3"	4"	6"	8"	2"	2.5"	3"	4"	6"	8"
L/L1	mm	14.50	16.50	15.00	18.00	24.00	29.00	14.50	16.50	18.50	21.50	27.75	32.75	17.75	20.00	22.75	26.50	36.00	40.25
	mm	368	419	381	457	610	737	368	419	470	546	705	832	451	508	578	673	914	1022
L2	in	14.82	16.62	15.12	18.12	24.12	28.12	14.62	16.62	18.62	21.62	28.00	33.13	17.87	20.25	23.00	26.88	36.50	40.87
	mm	371	422	384	460	613	740	371	422	473	549	711	841	454	514	584	683	927	1038
H	in	23.62	25.98	28.18	31.50	43.62	46.81	25.98	25.98	30.31	33.48	45.08	52.95	28.35	31.50	34.84	49.81	75.00	97.05
	mm	600	660	685	800	1108	1184	660	660	770	850	1145	1345	720	800	885	1260	1905	2465
W	in	14	14	18	20	24	24	14	14	20	22	24	24	16	20	22	24	24	24
	mm	350	350	450	500	610	610	350	350	500	560	610	610	400	500	560	600	610	610
Weight RF	kg	95	138	122	195	435	730	95	138	250	435	540	970	176	264	308	759	1990	4390



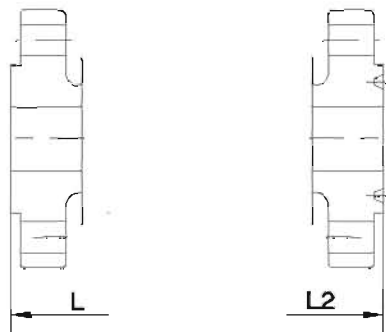
# Pressure Seal Globe Valve Class 900-2500



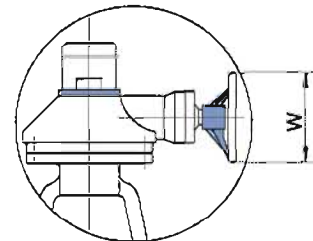
OS & Y, Rising Stem	Design	ASME B16.34
Pressure Seal	Face to Face	ASME B16.10
Conic Disc	End to End	ASME B16.10
Backseat Weld-Deposited	End Flange	ASME B16.5
By Pass On Request	BW End	ASME B16.25
Locking Device Optional	Test	API 598
Gear Optional	Special	NACE MR-01-75

### STANDARD MATERIALS OF PARTS

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216GR.WCB+Stellite Faced
2	Disc	ASTM A105+13Cr Faced
3	Disc Thrust Plate	ASTM A276 Type 420
4	Disc Nut	ASTM A276 Type 410
5	Stem	ASTM A182 GR.F8
6	Bonnet	ASTM A216GR.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	Lantam 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 A183 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



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



Dimensions and Weights		CALSS 900						CALSS 1500						CALSS 2500					
SIZE		2"	2.5"	3"	4"	6"	8"	2"	2.5"	3"	4"	6"	8"	2"	2.5"	3"	4"	6"	8"
L/L1	in	14.50	16.50	15.00	18.00	24.00	29.00	14.50	16.50	18.50	21.50	27.75	32.75	17.75	20.00	22.75	28.50	38.00	40.25
	mm	368	419	381	457	610	737	368	419	470	546	705	832	451	508	578	673	914	1022
L2	in	14.62	16.62	15.12	18.12	24.12	29.12	14.62	16.62	18.62	21.62	28.00	33.13	17.87	20.25	23.00	26.88	36.50	40.87
	mm	371	422	384	460	613	740	371	422	473	549	711	841	454	514	584	683	927	1038
H	in	24.41	25.40	28.50	33.40	48.23	53.15	24.41	25.40	32.88	33.88	48.50	70.24	24.41	30.63	34.84	51.10	53.74	83.46
	mm	620	645	724	848	1225	1350	620	645	830	860	1232	1784	620	778	885	1298	1365	2120
W	in	14	14	18	20	24	24	14	14	20	22	24	24	16	20	22	24	24	24
	mm	350	350	450	500	610	610	350	350	500	560	610	610	400	500	560	610	610	610
Weight RF	kg	62	86	86	140	360	948	62	86	112	158	765	1484	80	115	152	358	965	2095



Gate Valve

CLASS	ITEM	VALVE SIZE																
		2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	32"
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"	
	Thread Per Inch	5	5	5	5	5	4	4	4	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	0.5	
	Tums to Open	13	16	18	24	34	36	44	52	44	53	58	64	75	88	94	99	74
	Torque(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 1/8"	2 3/4"	2 7/8"		
	Thread Per Inch	5	5	5	5	4	4	4	3	3	3	3	3	3	3	2		
	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		
	Tums to Open	14	16	18	24	26	36	44	40	45	53	58	64	76	88	94		
	Torque(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	5	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				
	Tums to Open	14	16	18	24	27	27	33	40	45	53	58	64	51				
	Torque(N.m)	35	47	70	122	406	641	1023	1508	2098	2816	3038	3981	6896				
900	Stem Thread O.D.	3/4"	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									
	Tums to Open	14	16	18	21	22	28	34	40									
	Torque(N.m)	80	90	95	159	569	978	1728	2601									
1500	Stem Thread O.D.	3/4"	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	0.2	0.25	0.333	0.333	0.333	0.333									
	Tums to Open	14	16	16	22	22	28	34	40									
	Torque(N.m)	117	172	224	349	1009	2025	3259	4437									
2500	Stem Thread O.D.	3/4"	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	0.2	0.25	0.333	0.333	0.333	0.333									
	Tums to Open	15	17	17	22	28	28	34	40									
	Torque(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		
	Tums to Open	4	7	5	8	7	9	10	7		
	Torque(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 3/4"			
	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	0.333	0.333		
	Tums to Open	4	8	7	8	7	9	9	9		
	Torque(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		
	Tums to Open	8	8	8	8	9	9	9	9		
	Torque(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				
	Tums to Open	8	7	7	8	9	9				
	Torque(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	0.2	0.25	0.333	0.333				
	Tums to Open	8	7	7	8	9	9				
	Torque(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"					
	Thread Per Inch	4	4	3	3	3	3				
	Pitch(in)	0.25	0.25	0.333	0.333	0.333	0.333				
	Tums to Open	7	7	6	6	9	9				
	Torque(N.m)	502	824	959	2062	6530	9682				





Bolted bonnet



Welded bonnet



Pressure seal bonnet

### Globe valve Design Construction and Specifications

**FEVISA** valves conform to API602, BS 5352, and ASME B16.34 Each are tested according to API 598, and marking is per MSS SP-25

#### Construction:

Full Port or Conventional Port

Outside Screw and Yoke(OS&Y)

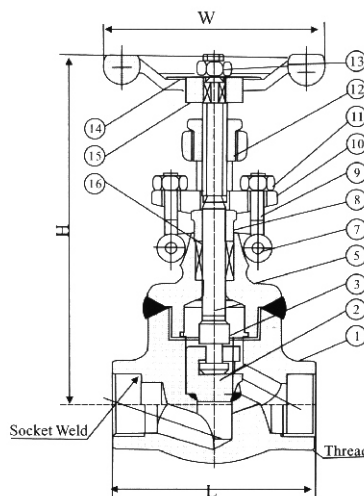
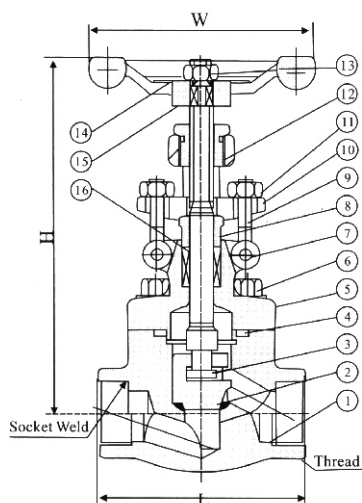
Two piece self-aligning packing gland

Bolted bonnet with spiral-wound gasket, threaded and seal welded bonnet or threaded and pressure seal bonnet

Integral backseat

Socket weld Ends to ASME B16.11

Screwed Ends(NPT)to ANMEB1.20.1



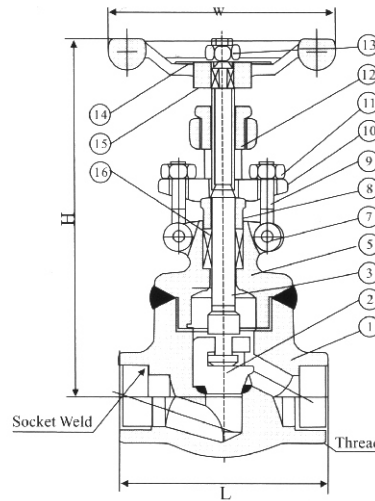
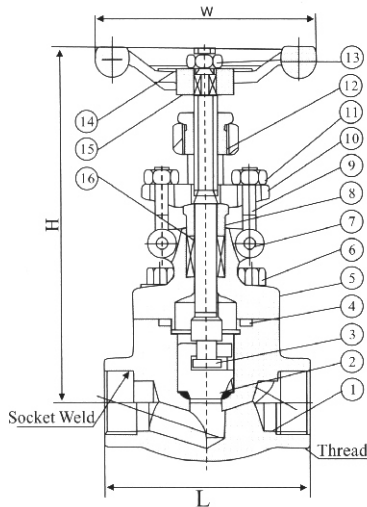
## Standard Material Specifications

No	Part Name	CS to ASTM	As to ASTM	SS to ASTM	
		Type A105	Type F22	Type F304(L)	Type F316(L)
1	Body	A105	A182 F22	A182 F304(L)	A182 F316(L)
2	Disc	A276 420	A276 F304	A276 304(L)	A276 316(L)
3	Stem	A182 F6	A182 F304	A182 F304(L)	A182 F316(L)
4	Gasket	Corrugated SS+graphite		SS+PTFE	
5	Bonnet	A105	A276 304	A276 304(L)	A276 316(L)
6	Bonnet Bolt	A193 B7	A193 B16	A193 B8	A193 B8M
7	Pin	A276 420		A276 304	
8	Gland	A276 410		A182 F304(L)	A182 F316(L)
9	Gland Eyebolt	A193 B7	A193 B16	A193 B8	A193 B8M
10	Gland Flange	A216 WCB		A351 Cf8	
11	Gland Nut	A193 2H	A194 4	A194 8	A194 8M
12	Yoke Nut	A276 410			
13	H.W.Nut	A194 2H	A194 4	A194 8	A194 8M
14	Nameplate	SS			
15	Handwheel	A197			
16	Stem Packing	Flexible Graphite		PTFE	
Suitable Medium		W.O.G.etc	W.O.G.etc	HNO <sub>3</sub> CH <sub>3</sub> OOH etc	
Suitable Temperature		-29°C~425°C	-29C~550°C	-29°C~180°C	

Note: Other materials are available upon request. CS=Carbon Steel; AS=Alloy Steel; SS=Stainless Steel;

## Dimensions(mm) and Weights(Kg)

NPS	Couv	3/8	1/2	3/4	1	1 1/4	1 1/2	2	/
	Full	/	3/8	1/2	3/4	1	1 1/4	1 1/2	2
L		79	79	92	111	120	152	172	200
H(OPEN)		166	166	171	207	240	258	330	355
W		100	100	100	125	160	160	180	200
Weights	Bolted	1.9	1.9	2.1	3.5	6.0	7.5	11.4	14.6
	Welded	1.7	1.7	1.9	3.3	5.2	6.8	10.6	13.8



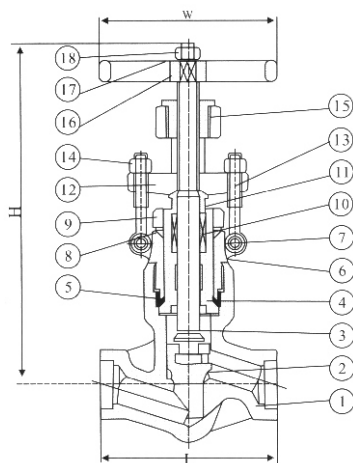
## Standard Material Specifications

No	Part Name	CS to ASTM	As to ASTM	SS to ASTM	
		Type A105	Type F22	Type F304(L)	Type F316(L)
1	Body	A105	A182 F22	A182 F304(L)	A182 F316(L)
2	Disc	A276 420	A276 F304	A276 304(L)	A276 316(L)
3	Stem	A182 F6	A182 F304	A182 F304(L)	A182 F316(L)
4	Gasket	Corrugated SS+graphite		SS+PTFE	
5	Bonnet	A105	A276 304	A276 304(L)	A276 316(L)
6	Bonnet Bolt	A193 B7	A193 B16	A193 B8	A193 B8M
7	Pin	A276 420		A276 304	
8	Gland	A276 410		A182 F304(L)	A182 F316(L)
9	Gland Eyebolt	A193 B7	A193 B16	A193 B8	A193 B8M
10	Gland Flange	A216 WCB		A351 Cf8	
11	Gland Nut	A193 2H	A194 4	A194 8	A194 8M
12	Yoke Nut	A276 410			
13	H.W.Nut	A194 2H	A194 4	A194 8	A194 8M
14	Nameplate	SS			
15	Handwheel	A197			
16	Stem Packing	Flexible Graphite		PTFE	
Suitable Medium		W.O.G.etc	W.O.G.etc	HNO <sub>3</sub> CH <sub>3</sub> OOH etc	
Suitable Temperature		-29°C~425°C	-29C~550°C	-29°C~180°C	

Note:Other materials are available upon request. CS=Carbon Steel; AS=Alloy Steel; SS=Stainless Steel;

## Dimensions(mm) and Weights(Kg)

NPS	Couv	3/8	1/2	3/4	1	1 1/4	1 1/2	2	/
	Full	/	3/8	1/2	3/4	1	1 1/4	1 1/2	2
L		2	111	111	120	152	172	200	220
H(OPEN)		171	207	207	240	258	330	355	370
W		100	125	125	160	160	180	200	240
Weights	Bolted	2.2	3.7	3.6	6.8	7.6	11.6	15.0	21.9
	Welded	2.0	3.4	3.3	6.0	5.6	10.3	14.2	18.0



## Standard Material Specifications

No	Part Name	CS to ASTM		SS to ASTM	
		Type A105	Type A182 F22	Type A182 F304	Type A182 F316(L)
1	Body	A105	A182 F22	A182 F304(L)	A182 F316(L)
2	Disc	A276 420	A276 304	A276 304(L)	A276 316(L)
3	Stem	A182 F6	A182 F304	A182 F304(L)	A182 F316(L)
4	Pressure Seat	A105	A182 F304	A182 F304(L)	A182 F316(L)
5	ressurering	A182 F304L			A182 F316(L)
6	Bonnet	A106	A182 F22	A182 F304(L)	A182 F316(L)
7	Pin	A276 420			
8	P.S.Washer	A105	A182 F22	A182 F304(L)	A182 F316(L)
9	P.S.Lock Nut	A194 2H	A194 4	A194 8	A193 8M
10	Stem Packing	Flexibte Graphite		SS+PEFE	
11	Gland	A276 420		A182 F304	
12	Gland Flange	A216 WCB		A351 Cf8	
13	Gland Eyebolt	A193 B7	A193 B16	A193 B8	A193 B8M
14	Gland Nut	A194 2H	A194 4	A194 8	A194 8M
15	Yoke Nut	A276-410			
16	Handwheel	A197			
17	Nameplate	SS			
18	Gland Nut	A194 2H	A194 4	A194 8	A194 8M
Suitable Medium		W.O.G.etc	W.O.G.etc	HNO <sub>3</sub> CH <sub>3</sub> OOH etc	
Suitable Temperature		-29°C~425°C	-29C~550°C	-29°C~180°C	

Note:Other materials are available upon request. CS=Carbon Steel; AS=Alloy Steel; SS=Stainless Steel;

## Dimensions(mm) and Weights(Kg)

NPS		1/2 "	3/4"	1"	1 1/4"	1 1/2"	2 "
L	900-1500Lb	140	140	140	178	178	216
	2500Lb	186	186	186	232	232	279
H(OPEN)		333	333	333	408	408	524
W		160	160	180	200	250	280
Weights	900-1500Lb	11.2	10.5	10.1	21.0	19.6	40.4
	2500Lb	12.3	11.6	10.8	286.0	26.4	43.8



## 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			304+Graphite				
		CL600-2500 Ring Joint Soft Iron	304			304			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 bolt	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 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	A193 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 WC6	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	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	

## 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	A216 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C	
4	Disc Thrust Plate	A276 410	A276 304	A276 304	A276 410			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 bolt	A193 B7	A194 L7	A193 L7	A193 B7	A193 B16	A193 B16	A193 B8					
9	Gasket	CL150-300 Soft Iron+ Graphite	304+Graphite			304+Graphite			304+Graphite				
		CL600-2500 Ring Joint Soft Iron	304			304			316				
10	Backseat Bushing	A216 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 CFM		
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	A193 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	Carbon Steel			Ductile Iron			Ductile Iron					
21	Handwheel Nut	Ductile Iron			A194 2H			Stainless Steel					
22	Washer	Carbon Steel			Carbon Steel			Stainless Steel					
23	Yoke	A216 WCB	A352 LCB	A352 LCC	A216 WCB	A216 WC6	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	

## CAST STEEL SWING CHECK VALVE STANDARD MATERIALS OF PARTS

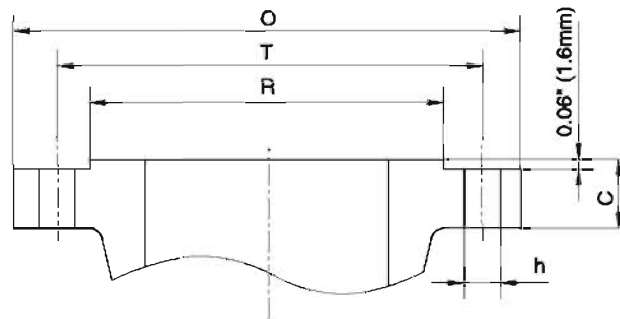
ITEM	PART NAME	CARBON STEEL			ALLOY STEEL			STAINLESS STEEL					
1	Body	A216 WCB	A352 LCB	A352 LCC	A217 WC1	A217 WC6	A217 C5	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A351 CF8C	
2	seat ring	A105	A350 LF2	A350 LF2	A182 F1	A182 F11	A182 F5	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321	
3	disc	A216 WCB	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	Higne	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			304+Graphite				
		CL600-2500 Ring Joint Soft Iron	304			304			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 LCC	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	Plug	A105	A350 LF2	A350 LF2	A182 F1	A182 F11	A182 F5	A182 F304	A182 F316	A182 F304L	A182 F316L	A182 F321	

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 V0.03	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 V0.10	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 V0.10	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 V0.10	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 V0.10	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 V0.10	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 V0.03	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 V0.03	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	0.040	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- 12.0	17.0- 21.0	2.0- 3.0		485(70)	205(30)	30		
CF8C	0.08	1.50	0.040	0.040	2.00	27.5- 30.5	18.0- 21.0	0.50	No ≥8xC≤1	485(70)	205(30)	30		
CN7M	0.07	1.50	0.040	0.040	1.50	0.40	19.0- 22.0	2.0- 3.0	Cu0.40 V0.03 Nb0.02	450(62)	170(25)	35		
A105	0.35	0.60- 1.05	0.040	0.050	0.35		0.30	0.12		485(70)	250(36)	22	30	≤187
F1	0.28	0.60- 0.90	0.045	0.450	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(70)	30	50	

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)	250(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		To ≥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 ≥5xC≤0.70	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	V0.25-0.35	860(125)	725(105)	18	50	
B8	0.08	2.00	0.030	0.030	1.00	8.00-10.50	18.00-20.00			515(75)	205(30)	30	50	≤HB223or HRB 96
B8M	0.08	2.00	0.030	0.030	1.00	10.00-14.00	16.00-18.00	2.00-3.00		515(75)	205(30)	30	50	≤HB223or HRB 96
L7	0.38-0.48	0.75-1.00	0.040	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	0.040	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				Cu0.40 V0.03 Nb0.02					HRB248-352 HRC 24-38
2HM	≥0.40	1.00	0.040	0.050	0.40									HRB248-352 HRC ≤22
4	0.40-0.50	0.70-0.90	0.035	0.040	0.15-0.35			0.20-0.30						HRB248-352 HRC 24-38
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						HRB248-352 HRC 24-38
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						HRB248-352 HRC ≤22
8	0.08	2.00	0.045	0.030	1.00	8.00-10.50	18.0-20.0							HB126-300 HRC 60-105
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 HRC 60-105



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	8.00	152	3.62	92	0.62	16	4.75	120.5	0.75	19	4	5/8
	2.5	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	682	1.88	48	29.50	749.5	1.38	35	20	1 1/4
	28	700	36.50	927	31.50	800	2.01	72	34.00	863.5	1.38	35	28	1 1/4
	30	750	38.75	984	33.75	857	2.04	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
	2.5	65	7.50	190	4.12	105	1.00	26	5.88	179	0.88	22	8	3/4
	3	80	8.25	210	5.00	127	1.12	29	6.62	169.5	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	682	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

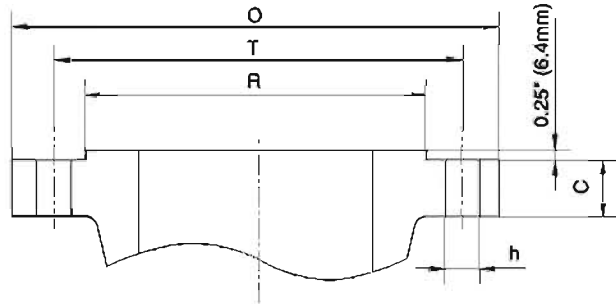
Outside Diameter R: 0.06 Raised Face: ±0.03

0.25 Raised Face: ±0.02



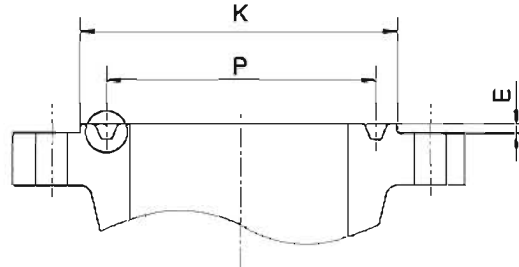
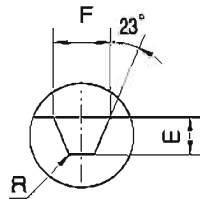


CLASS 600-2500 RF



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
	2.5	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	12	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	10.82	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
2.5		65	9.82	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	10.82	270	2.50	63.5	15.50	393.7	1.50	38	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
	2.5	65	9.82	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	48.5	8.00	8.00	1.25	32	8	1 1/4
	4	100	12.25	311	6.19	157	2.12	54.0	9.50	9.50	1.38	35	8	1 3/8
	6	150	15.50	394	8.50	216	3.25	83.0	12.50	12.50	1.50	38	12	1 1/2
	8	200	19.00	483	10.82	270	3.62	92.9	15.50	15.50	1.75	45	12	1 3/4
	10	250	23.00	585	12.75	324	4.25	108.0	19.00	19.00	2.00	51	12	2
	12	300	26.50	675	15.00	381	4.88	124.0	22.50	22.50	2.12	54	16	2 1/8
	14	350	29.50	750	16.25	413	5.25	133.5	25.00	25.00	2.38	61	16	2 3/8
	16	400	32.50	825	18.50	470	5.75	146.5	27.75	27.75	2.62	67	16	2 5/8
	18	450	36.00	915	21.00	533	6.38	162.0	30.50	30.50	2.88	74	16	2 7/8
	20	500	38.75	985	23.00	584	7.00	178.0	32.75	32.75	3.12	80	16	3 1/8
	24	600	46.00	1170	27.25	692	8.00	203.5	39.00	39.00	3.62	93	16	3 5/8
	2500	2	50	9.25	235	3.62	92	2.00	51.0	6.75	6.75	1.12	29	8
2.5		65	10.50	267	4.12	105	2.25	57.5	7.75	7.75	1.25	32	8	1 1/8
3		80	12.00	305	5.00	127	2.62	67.0	9.00	9.00	1.38	35	8	1 1/4
4		100	14.00	356	6.19	157	3.00	76.5	10.75	10.75	1.62	42	8	1 1/2
6		150	19.00	483	8.50	216	4.25	108.0	14.50	14.50	2.12	54	8	2
8		200	21.75	550	10.82	270	5.00	127.0	17.25	17.25	2.12	54	12	2
10		250	26.50	675	12.75	324	6.50	165.5	21.50	21.25	2.62	67	12	2 1/2
12		300	30.00	780	15.00	38	7.25	184.5	24.38	24.38	2.88	74	12	2 3/4

CLASS 150-2500 RTJ



CLASS	SIZE	Ring No.	P		E		F		R		K		
			in	mm	in	mm	in	mm	in	mm	in	mm	
150	2	R22	3.250	82.55	0.250	6.35	0.344	8.74	0.03	0.8	4.00	102	
	2.5	R25	4.000	101.60	0.250	6.35	0.344	8.74	0.03	0.8	4.75	121	
	3	R28	4.500	114.30	0.250	6.35	0.344	8.74	0.03	0.8	5.25	133	
	4	R38	5.875	148.22	0.250	6.35	0.344	8.74	0.03	0.8	6.75	171	
	6	R43	7.525	193.68	0.260	6.35	0.344	8.74	0.03	0.8	6.62	218	
	8	R48	8.750	247.65	0.260	6.35	0.344	8.74	0.03	0.8	10.75	273	
	10	R52	12.000	304.80	0.250	6.35	0.344	8.74	0.03	0.8	13.00	330	
	12	R58	15.000	381.00	0.250	6.35	0.344	8.74	0.03	0.8	18.00	406	
	14	R58	15.825	396.88	0.250	6.35	0.344	8.74	0.03	0.8	18.75	425	
	16	R64	17.875	454.02	0.260	6.35	0.344	8.74	0.03	0.8	19.00	483	
	18	R68	20.375	517.82	0.260	6.35	0.344	8.74	0.03	0.8	21.60	546	
	20	R72	22.000	558.80	0.250	6.35	0.344	8.74	0.03	0.8	23.50	587	
	24	R78	28.500	673.10	0.250	6.35	0.344	8.74	0.03	0.8	28.00	711	
	28	R84	31.500	800.10	0.500	12.7	0.781	18.844	0.06	1.5	33.88	881	
	30	R85	33.750	857.25	0.500	12.7	0.781	18.844	0.06	1.5	36.12	917	
	32	R86	38.000	914.40	0.662	14.3	0.906	23.018	0.09	2.3	38.75	984	
36	R88	40.250	1022.35	0.562	14.3	0.906	23.018	0.09	2.3	40.75	1035		
300	2	R28	3.250	82.55	0.312	7.92	0.489	11.91	0.03	0.8	4.25	108	
	2.5	R28	4.000	101.60	0.312	7.92	0.489	11.91	0.03	0.8	5.00	127	
	3	R31	4.875	123.82	0.312	7.92	0.489	11.91	0.03	0.8	5.75	146	
	4	R37	5.875	148.22	0.312	7.92	0.489	11.91	0.03	0.8	6.88	175	
	6	R45	8.312	211.13	0.312	7.92	0.489	11.91	0.03	0.8	9.50	214	
	8	R49	10.825	269.88	0.312	7.92	0.489	11.91	0.03	0.8	11.88	302	
	10	R53	12.750	323.85	0.312	7.92	0.489	11.91	0.03	0.8	14.00	366	
	600	12	R57	15.000	381.00	0.312	7.92	0.489	11.91	0.03	0.8	18.25	413
		14	R61	18.600	419.10	0.312	7.92	0.489	11.91	0.03	0.8	18.00	457
		16	R65	18.500	469.90	0.312	7.92	0.489	11.91	0.03	0.8	20.00	508
		18	R69	21.000	533.40	0.312	7.92	0.489	11.91	0.03	0.8	22.82	575
		20	R73	23.000	584.20	0.375	9.52	0.531	13.49	0.06	1.5	25.00	635
		24	R77	27.250	692.15	0.438	11.13	0.656	16.66	0.06	1.5	29.50	749
		28	R84	31.600	800.10	0.600	12.7	0.781	19.84	0.06	1.5	33.88	881
		30	R85	33.750	857.25	0.600	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	
900	2	R24	3.750	95.25	0.312	7.92	0.489	11.91	0.03	0.8	4.88	124	
	2.5	R27	4.250	107.95	0.312	7.92	0.489	11.91	0.03	0.8	5.38	137	
	3	R31	4.875	123.82	0.312	7.92	0.489	11.91	0.03	0.8	6.12	156	
	4	R37	5.875	148.22	0.312	7.92	0.489	11.91	0.03	0.8	7.12	181	
	6	R46	8.312	211.12	0.312	7.92	0.489	11.91	0.03	0.8	9.60	241	
	8	R49	10.825	269.88	0.312	7.92	0.489	11.91	0.03	0.8	12.12	308	
	10	R53	12.750	323.85	0.312	7.92	0.489	11.91	0.03	0.8	14.25	362	
	12	R57	15.000	381.00	0.312	7.92	0.489	11.91	0.03	0.8	16.50	419	
	14	R62	16.500	419.10	0.438	11.13	0.656	16.66	0.06	1.5	18.38	467	
	16	R66	18.500	469.90	0.438	11.13	0.656	16.66	0.06	1.5	20.82	524	
	18	R70	21.000	533.40	0.500	12.70	0.781	19.84	0.06	1.5	23.38	584	
	20	R74	23.000	584.20	0.500	12.70	0.781	19.84	0.06	1.5	25.50	648	
	24	R78	27.250	692.15	0.625	15.88	1.062	26.97	0.09	2.3	30.38	772	
	1500	2	R27	3.750	95.25	0.312	7.92	0.489	11.91	0.03	0.8	4.88	124
		2.5	R27	4.250	107.95	0.312	7.92	0.489	11.91	0.03	0.8	5.38	137
		3	R35	4.875	123.82	0.312	7.92	0.489	11.91	0.03	0.8	6.82	188
4		R39	5.875	148.22	0.312	7.92	0.489	11.91	0.03	0.8	7.82	194	
6		R48	8.312	211.12	0.375	9.52	0.531	13.48	0.06	1.5	9.75	248	
8		R50	10.825	269.88	0.438	11.13	0.656	16.66	0.06	1.5	12.50	318	
10		R54	12.750	323.85	0.438	11.13	0.656	16.66	0.06	1.5	14.82	371	
12		R58	15.000	381.00	0.562	14.27	0.906	23.01	0.06	2.3	17.25	438	
14		R63	16.500	419.10	0.625	15.88	1.062	26.97	0.09	2.3	19.25	489	
16		R67	18.500	469.90	0.688	17.48	1.168	30.18	0.09	2.3	21.50	546	
18		R71	21.000	533.40	0.688	17.48	1.168	30.18	0.09	2.3	24.12	613	
20		R75	23.000	584.20	0.688	17.48	1.312	33.32	0.09	2.3	26.50	673	
24		R79	27.250	692.15	0.812	20.62	1.438	36.53	0.09	2.3	31.25	794	
2500		2	R26	4.000	101.60	0.312	7.92	0.489	11.91	0.03	0.8	5.25	133
		2.5	R28	4.375	111.12	0.375	9.52	0.531	13.48	0.03	0.8	5.88	148
		3	R32	5.000	127.00	0.375	9.52	0.531	13.48	0.06	1.5	6.62	168
	4	R38	6.188	157.18	0.438	11.13	0.656	16.66	0.06	1.5	8.00	203	
	6	R47	8.000	228.60	0.500	12.70	0.781	19.84	0.06	1.5	11.00	279	
	8	R51	11.000	279.40	0.582	14.27	0.906	23.01	0.06	1.5	13.38	340	
	10	R55	13.500	342.80	0.688	17.48	1.168	30.18	0.09	2.3	16.75	425	
	12	R60	16.000	406.40	0.688	17.48	1.312	33.32	0.09	2.3	19.60	485	

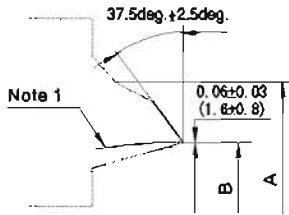
End Flange Dimensions: Size 2" -24" to ASME B16.5, Size 28" -36" to ASME B16.47 A.

Tolerances: Unit Inch

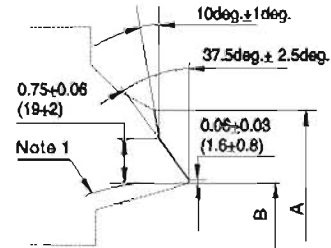
Depth E: +0.016,-0  
 Width F: ±0.008  
 Pitch Diameter P: ±0.005  
 Radius at Bottom R: R ≤ 0.08" ± 0.03,0  
 R ≥ 0.06 ± 0.03  
 Angle 23 Deg: ± 0.5Deg



# Buttwelding End Dimensions ASME B16.25



Note 1 Internal surface may be as 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	mm	mm	mm
65	2.5	40	43.0	2.88	75	2.96	62.5	2.469	62.93	2.479	6.18	0.203
		80					59	2.323	59.69	2.341	7.01	0.276
		160					54	2.125	66.28	2.178	9.53	0.375
		XXS					45	1.771	47.43	1.699	14.02	0.552
80	3	40	88.9	3.50	91	3.95	78	3.068	78.25	3.081	5.49	0.126
		80					73.5	2.900	74.53	2.934	7.62	0.300
		160					68.6	2.625	68.38	2.692	11.13	0.438
		XXS					58.5	2.300	61.19	2.409	15.24	0.600
90	3.6	40	101.6	4.00	106	4.12	90	3.548	90.52	3.564	5.74	0.226
		80					85.5	3.364	86.42	3.402	6.08	0.318
100	4	40	114.3	4.50	117	4.82	102	4.028	102.73	4.044	6.02	0.237
		80					97	3.828	98.28	3.869	6.58	0.337
		120					92	3.624	93.78	3.692	11.13	0.438
		160					87.5	3.428	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	5.58	144	5.89	128	5.047	128.80	5.070	6.55	0.258
		80					122	4.813	123.58	4.866	8.53	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	164.82	6.094	7.11	0.280
		80					145.5	5.761	148.06	5.829	10.97	0.432
		120					140	5.501	142.29	5.600	14.27	0.562
		160					132	5.187	135.31	5.326	18.28	0.718
XXS					124.5	4.897	128.85	5.072	21.95	0.864		
200	8	40	219.1	8.62	223	8.78	203	7.991	203.75	8.020	8.18	0.322
		60					198.6	7.813	200.02	7.783	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	18.28	0.719
		140					178	7.001	181.98	7.163	20.62	0.812
XXS					174.5	6.875	179.16	7.063	22.23	0.876		
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	9.75	249.74	9.834	12.70	0.500
		80					243	9.652	245.55	9.670	15.09	0.594
		100					236.5	9.312	240.01	9.451	18.28	0.719
		120					230	9.062	234.44	9.232	21.44	0.844
		140					222	8.750	227.51	8.999	25.40	1.000
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	12.063	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	10.760	278.31	10.959	25.40	1.000
		140					266.5	10.500	272.75	10.740	28.58	1.125
160					267	10.126	264.45	10.413	33.32	1.312		
350	14	STD	355.6	14.00	362	14.25	338.5	13.250	337.88	13.303	9.53	0.375
		40					333.5	13.124	335.08	13.182	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
160					284	11.188	292.07	11.488	35.71	1.106		



## Buttwelding End Dimensions ASME B16.25



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		
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		
		140					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		
		140					419	16.500	429.17	16.896	44.45	1.750		
550	22	160	558.8	22.00	567	22.34	408	16.062	419.44	16.513	50.01	1.969		
		STD					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		
600	24	160				450.5	17.750	463.30	18.240	53.98	2.125			
		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		
650	26	120				517.5	20.376	528.03	20.788	46.02	1.812			
		140				505	19.876	516.91	20.350	52.37	2.062			
		160				490.5	19.312	504.37	19.857	59.54	2.344			
		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		
		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					679.5	26.750	682.37	26.865	15.88	0.625
750	30	10	762.0	30.00	772	30.38	746	29.376	747.10	29.413	7.92	0.312		
		20					736.5	29.000	738.74	29.084	12.70	0.500		
		30					730	28.750	733.17	28.865	15.88	0.625		
800	32	10	812.8	32.00	825	32.50	797	31.376	797.90	31.413	7.92	0.312		
		20					787.5	31.000	789.54	31.084	12.70	0.500		
		30					781	30.750	783.97	30.865	15.88	0.625		
		40					778	30.624	781.17	30.755	17.48	0.688		
850	34	10	863.6	34.00	876	34.50	848	33.376	848.70	33.413	7.92	0.312		
		20					838	33.000	840.34	33.084	12.70	0.500		
		30					832	32.750	834.77	32.865	15.88	0.625		
		40					828.5	32.624	831.97	32.755	17.48	0.688		
900	36	10	914.4	36.00	927	36.50	898.5	35.376	899.50	35.413	7.92	0.312		
		20					889	35.000	891.50	35.084	12.70	0.500		
		30					882.5	34.750	885.57	34.865	15.88	0.625		
		40					876.5	34.500	880.02	34.646	19.05	0.750		

**NORES:**

(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) Interanal machining for continuous backing rings for sizes DN 50(NPS 2)and smaller is not contemplated.