



## Cast Steel Bolted Bonnet Valves

### *Globe valves*

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#### **Design**

HFSH cast steel globe valve has been designed to conform to BS1873 and ASME B16.34.

Wall thickness dimensions comply with API 600.

Face to face, end to end, and center to face dimensions of flanged and butt welded valves are in accordance with ASME B16.10, BS 2080 and ISO 5752.

End flange dimension conform to ASME B16.5.

BW end dimension conform to ASME B16.25.

Inspection and test are in accordance with API 598 and BS EN 12266.

#### **Body and Bonnet**

Castings are precisely machined.

The gasket contacting surface is smooth finish that has a roughness between Ra 3.2 and 6.3 micrometer (125-250microinch).

The surface roughness of gasket grooves of ring joint faces do not exceed 63 micro inch.

Body seat construction of HFSH cast steel valve is threaded seat ring.

Provided with bosses for optional by-passes or drains.

#### **Stem**

Stem with precision Acme threads and burnished finish.

16 to 32 RMS stem surface finish, straightness and roundness are precisely controlled according to HFSH design and manufacturing standards.

#### **Stuffing Box**

Maximum 125 RMS surface finish. Cylindricity and verticality are precisely controlled according to HFSH design and manufacturing standards.

Optional lantern rings and grease injectors are available.

#### **Gland and Packing**

Gland has a two-piece construction for easy alignment.

Middle rings dieformed 100% laminated flexible graphite rings, top and bottom rings lattice braided graphite fiber with corrosion inhibitor.

#### **Bonnet Gasket**

Class 150 ~ 600: Jacketed graphite with stainless steel or spiral wound graphite with stainless steel.

Class 900 and over: Ring joint metal gasket.

#### **Bonnet Bolting**

Coarse thread series for bolt sizes 1 inch and smaller, 8-thread series for bolt sizes 1 1/8 inch and larger, both conform to Class 2A/2B tolerances.

#### **Operators**

Globe valves normally are handwheel operation, but are also available with gear, electric motor actuators, or cylinder actuators for remote operation.



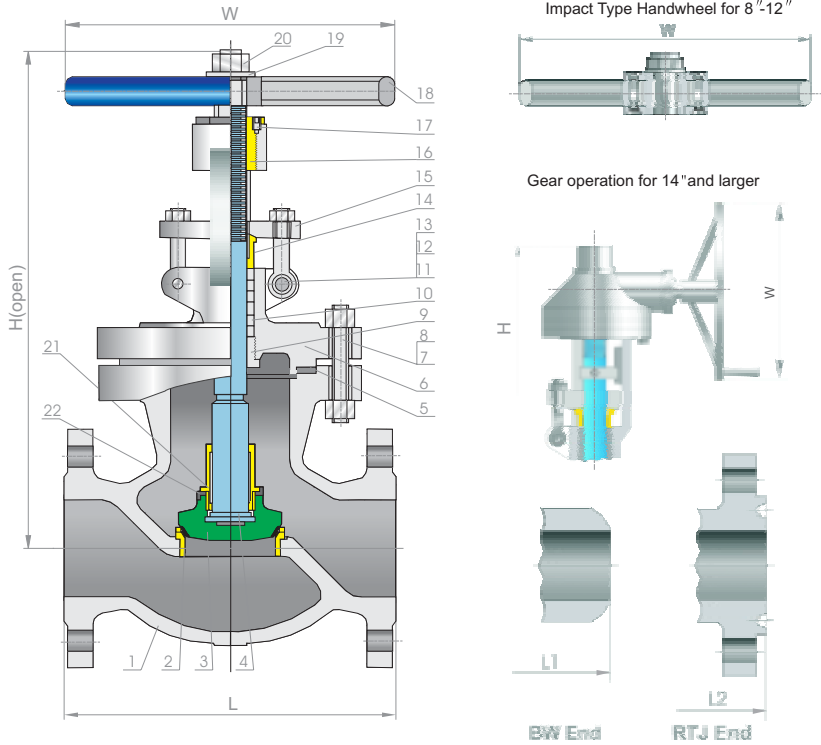
# Cast Steel Bolted Bonnet Globe Valves

**Class 150**

*Bolted bonnet, Outside screw and yoke, Rising stem, Plug type disc.*

### Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+STL No.6
3	Disc	ASTM A105+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Jacketed Graphite
6	Bonnet	ASTM A216 Gr.WCB
7	Bonnet bolt	ASTM A193 Gr.B7
8	Bonnet nut	ASTM A194 Gr.2H
9	Back seat	ASTM A276 410
10	Packing	Graphite
11	Gland bolt	ASTM A193 Gr.B7
12	Gland nut	ASTM A194 Gr.2H
13	Pin	C.S.
14	Gland	ASTM A276 410
15	Gland flange	ASTM A216 Gr.WCB
16	Stem nut	Aluminum Bronze
17	Screw	C.S.
18	Handwheel	Malleable Iron
19	Washer	C.S.
20	Nut	C.S.
21	Disc cover	ASTM A276 410
22	Washer	S.S.



### Features

- Face to face and end to end dimension: ASME B16.10
- Flange dimension: ASME B16.5
- Shell wall thickness: API 600
- B. W. end to ASME B16.25
- 12" and smaller valves have a one-piece bonnet and yoke design.
- 14" and larger valves have a two-piece bonnet and yoke design.

### Dimensions and Weights

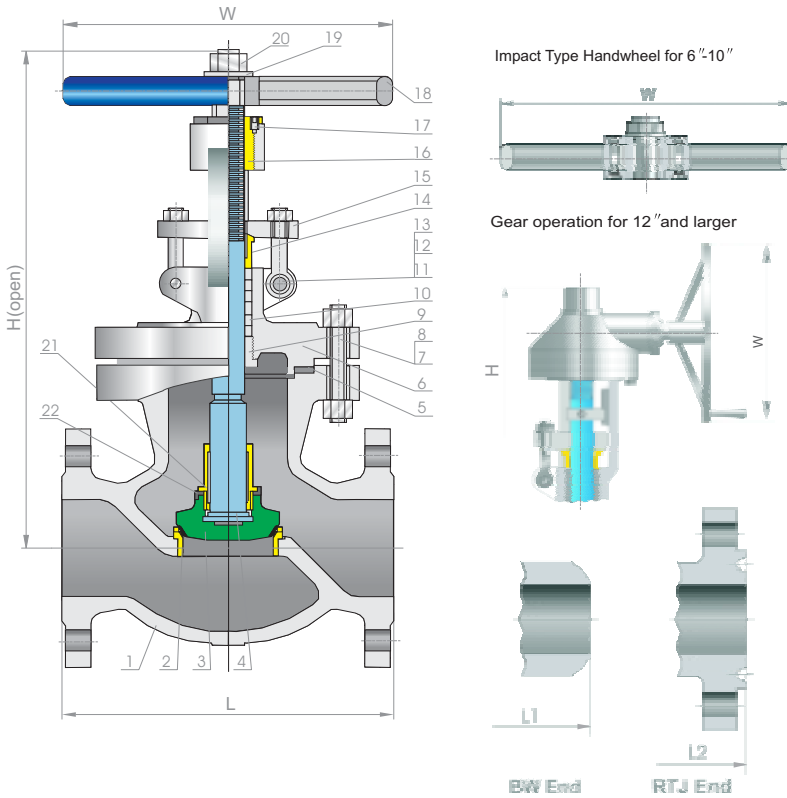
Valve Size	in.	11/2	2	2 1/2	3	4	5	6	8	10	12	14	16
	mm	40	50	65	80	100	125	150	200	250	300	350	400
L-L1 (RF-BW)	in.	6.5	8	8.5	9.5	11.5	14	16	19.5	24.5	27.5	31	36
	mm	165	203	216	241	292	356	406	495	622	698	787	914
L2 (RTJ)	in.	7.0	8.5	9	10	12	14.5	16.5	20	25	28	31.5	36.5
	mm	178	216	229	254	305	368	419	508	635	711	800	927
H (open)	in.	14.25	14.69	15.38	16.56	20.25	21.19	22.31	24.63	28	39	51	63.75
	mm	326	373	390	421	515	538	567	626	712	990	1295	1619
W	in.	7.88	7.88	9.88	9.88	11.81	11.81	13.75	15.75	17.75	20	24	24
	mm	200	200	250	250	300	300	350	400	450	500	610	610
WT (kg)	RF	19	22	29	42	64	77	105	154	288	507	690	950
	BW	16	19	25	34	49	65	82	131	249	430	600	850



# Cast Steel Bolted Bonnet Globe Valves

**Class 300**

*Bolted bonnet, Outside screw and yoke, Rising stem and handwheel,  
Plug Type disc.*



### Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+STL No.6
3	Disc	ASTM A105+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Jacketed Graphite
6	Bonnet	ASTM A216 Gr.WCB
7	Bonnet bolt	ASTM A193 Gr.B7
8	Bonnet nut	ASTM A194 Gr.2H
9	Back seat	ASTM A276 410
10	Packing	Graphite
11	Gland bolt	ASTM A193 Gr.B7
12	Gland nut	ASTM A194 Gr.2H
13	Pin	C.S.
14	Gland	ASTM A276 410
15	Gland flange	ASTM A216 Gr.WCB
16	Stem nut	Aluminum Bronze
17	Screw	C.S.
18	Handwheel	Malleable Iron
19	Washer	C.S.
20	Nut	C.S.
21	Disc cover	ASTM A276 410
22	Washer	S.S.

### Features

- Face to face and end to end dimension: ASME B16.10
- Flange dimension: ASME B16.5
- Shell wall thickness: API 600
- B.W. end to ASME B16.25
- 8" and smaller valves have a one-piece bonnet and yoke design.
- 10" and larger valves have a two-piece bonnet and yoke design.

### Dimensions and Weights

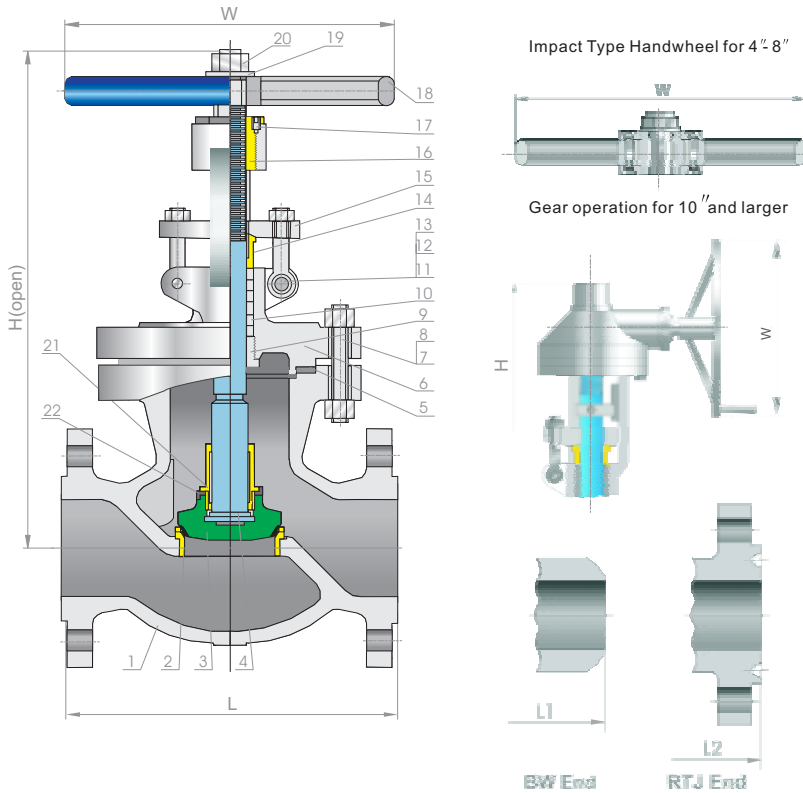
Valve Size	in.	11/2	2	2 1/2	3	4	5	6	8	10	12	14	16
	mm	40	50	65	80	100	125	150	200	250	300	350	400
L-L1 (RF-BW)	in.	9	10.5	11.5	12.5	14	15.75	17.5	22	24.5	28	33	34
	mm	229	267	292	318	356	400	444	559	622	711	838	864
L2 (RTJ)	in.	9.5	11.12	12.12	13.12	14.62	16.37	18.12	22.62	25.12	28.62	33.62	34.62
	mm	241	283	308	333	371	416	460	575	638	727	854	879
H (open)	in.	14.17	15.69	17.13	18.19	22.06	24.38	27.31	38.63	44.5	41.31	61.25	67
	mm	360	398	436	462	560	620	694	982	1130	1049	1556	1700
W	in.	7.88	7.88	9.88	9.88	13.75	15.75	17.75	22.06	34	18.13	24	24
	mm	200	200	250	250	350	400	450	560	860	610	610	610
WT (kg)	RF	26	31	43	57	86	130	168	280	385	724	1500	2200
	BW	21	26	38	44	68	110	138	228	329	618	1350	2000



# Cast Steel Bolted Bonnet Globe Valves

**Class 600**

*Bolted bonnet, Outside screw and yoke, Rising stem, Plug type disc.*



### Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+STL No.6
3	Disc	ASTM A105+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Jacketed Graphite
6	Bonnet	ASTM A216 Gr.WCB
7	Bonnet bolt	ASTM A193 Gr.B7
8	Bonnet nut	ASTM A194 Gr.2H
9	Back seat	ASTM A276 410
10	Packing	Graphite
11	Gland bolt	ASTM A193 Gr.B7
12	Gland nut	ASTM A194 Gr.2H
13	Pin	C.S.
14	Gland	ASTM A276 410
15	Gland flange	ASTM A216 Gr.WCB
16	Stem nut	Aluminum Bronze
17	Screw	C.S.
18	Handwheel	Malleable Iron
19	Washer	C.S.
20	Nut	C.S.
21	Disc cover	ASTM A276 410
22	Washer	S.S.

### Features

- Face to face and end to end dimension: ASME B16.10
- Flange dimension: ASME B16.5
- Shell wall thickness: API 600
- B.W.end to ASME B16.25
- 8" and smaller valves have a one-piece bonnet and yoke design.
- 10" and larger valves have a two-piece bonnet and yoke design.

### Dimensions and Weights

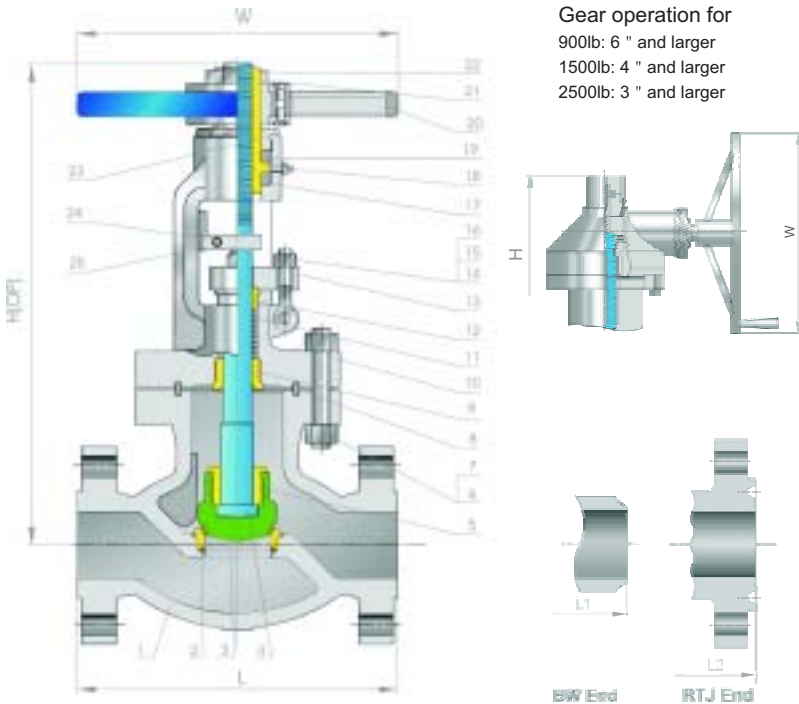
Valve Size	in.	2	2 1/2	3	4	6	8	10	12	14	16
	mm	50	65	80	100	150	200	250	300	350	400
L-L1 (RF-BW)	in.	11.5	13	14	17	22	26	31	33	35	39
	mm	292	330	356	432	559	660	787	838	889	991
L2 (RTJ)	in.	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12
	mm	295	333	359	435	562	663	791	841	892	994
H (open)	in.	16.75	19.75	20.5	24.38	34.88	36.69	41	50.38	70.88	76
	mm	425	502	521	620	886	932	1040	1280	1800	1930
W	in.	9.88	11.81	13.75	17.75	28.38	18.13	24	30	30	30
	mm	250	300	350	450	720	460	610	760	760	760
WT (kg)	RF	39	58	73	120	327	482	700	900	2700	3600
	BW	33	48	61	95	261	385	588	795	2510	3350



# Cast Steel Bolted Bonnet Globe Valves

**Class 900/1500/2500**

*Bolted bonnet, Outside screw and yoke, Rising stem, Plug Type disc.*



### Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+STL No.6
3	Disc	ASTM A105+13Cr
4	Stem	ASTM A182 F6a
5	Disc cover	ASTM A276 410
6	Bonnet bolt	ASTM A193 Gr.B7
7	Bonnet nut	ASTM A194 Gr.2H
8	Gasket	Soft Iron
9	Back seat	ASTM A276 410
10	Bonnet	ASTM A216 Gr.WCB
11	Packing	Graphite
12	Gland	ASTM A276 410
13	Gland flange	ASTM A216 Gr.WCB
14	Gland bolt	ASTM A193 Gr.B7
15	Gland nut	ASTM A194 Gr.2H
16	Pin	C.S.
17	Bearing	Assem.
18	Lubricator	Assem.
19	Stem nut	Aluminum Bronze
20	Handwheel	Malleable Iron
21	H.W. lock nut	C.S.
22	Screw	C.S.
23	Retaining nut	C.S.
24	Bolt	C.S.
25	Guide block	C.S.

### Features

- Face to face and end to end dimension: ASME B16.10
- Shell wall thickness: API 600
- Flange dimension: ASME B16.5
- B.W. End to ASME B16.25

### Dimensions and Weights

	Valve Size	in. mm	2	2 1/2	3	4	6	8	10
			50	65	80	100	150	200	250
900lb	L-L1 (RF -BW)	in. mm	14.5 368	16.5 419	15 381	18 457	24 610	29 737	33 838
	L2 (RTJ)	in. mm	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841
	H (open)	in. mm	9.44 240	10.25 260	10.25 260	12.63 320	15 382	20.88 530	27.17 690
	W	in. mm	13.75 350	15.75 400	17.75 450	22.06 560	24 610	24 610	24 610
	WT (kg)	RF BW	100 75	118 94	131 105	218 185	452 340	710 630	2050 1870
	1500lb	L-L1 (RF -BW)	in. mm	14.5 368	16.5 419	18.5 470	21.5 546	27.75 705	32.75 832
L2 (RTJ)		in. mm	14.62 371	16.62 422	18.62 473	21.62 549	28 711	33.13 841	—
H (open)		in. mm	23.31 592	26 660	27.25 692	35.69 907	40 1015	45.06 1145	—
W		in. mm	13.75 350	15.75 400	17.75 450	22.06 560	24 610	24 610	—
WT (kg)		RF BW	112 84	141 115	228 183	336 277	822 715	990 830	—
2500lb		L-L1 (RF -BW)	in. mm	17.75 451	20 508	22.75 578	26.5 673	36 914	—
	L2 (RTJ)	in. mm	17.87 454	20.25 514	23 584	26.88 683	36.5 927	—	—
	H (open)	in. mm	27.25 692	29.5 750	31.5 800	47.25 1200	75 1905	—	—
	W	in. mm	15.75 400	19.69 500	24 610	30 760	30 750	—	—
	WT (kg)	RF BW	182 153	290 230	340 272	820 670	2300 2000	—	—