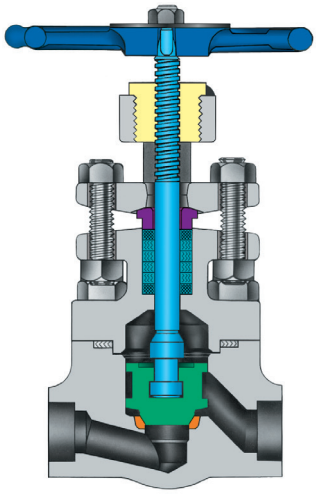
API 602 forged steel globe valve

Quick sheet

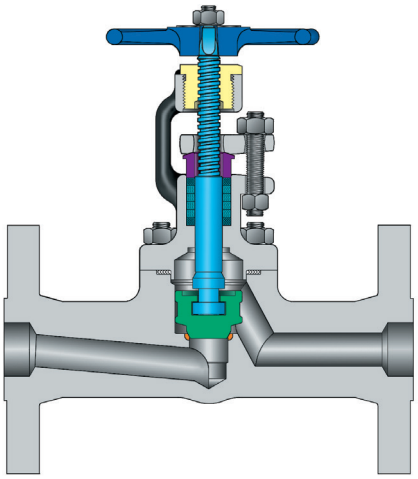
Conventional port, threaded or socket weld

NPS ¼ – 2 (DN 8 – 50), ASME class 800 (1975 psi @ 100°F), ASME Class 1500 (3705 psi @ 100°F)

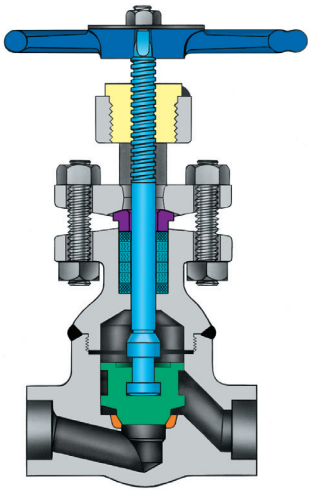
Flanged ASME Classes 150, 300, 600, 1500, Complies to api 602 and ASME B16.34 standards



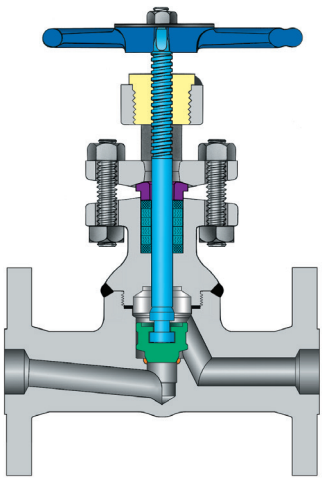
Bolted bonnet



Bolted bonnet flanged



Welded bonnet



Welded bonnet flanged

Figure numbers

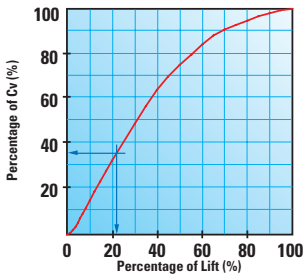
ASME Class	Bolted bonnet				Welded bonnet			
	Stop	Stop check	Needle	Flow control	Stop	Stop check	Needle	Flow control
800	2074B	2084B	2094B	2014B	2074W	2084W	2094W	2014W
1500	3074B	3084B	3094B	3014B	3074W	3084W	3094W	3014W

Optional features for special applications

- A special design is also available with double packing, live-loading, and leak-off connection.
- Also available with a bellows seal for emission-free service.

Throttling globe valves

Regular style globe valves are suitable for moderate throttling applications. As a general rule, an adequately sized globe valve (i.e. with pipe velocity between 15 to 25 ft/sec for water and 200 to 300 ft/sec for steam) should not be throttled down below 35% of its maximum full open Cv capacity (approximately 20% of full stroke). Harsh throttling, below 35% of full Cv capacity, will require analysis by applications department to determine suitability under possible cavitation, flashing, noise and vibration.



Standard materials

Part	Materials
Body	A105
Seat (integral)	CoCr alloy
Bonnet	A105
Gasket	Gr. 304 (stainless and graphite)
Packing flange	A 105
Disc	CA15 HT or CoCr alloy
Stem	Gr. 410 (stainless)
Stem nut	Gr. 416 (stainless) or bronze
Gland	Gr. 416 (stainless)
Packing	Graphite
Gland bolt	Gr. B6
Gland nut	Gr. 2H
Cap screw	Gr. B7
Handwheel	Malleable iron
Handwheel lockwasher	Steel
Name plate	Aluminum

For other materials, trims, and engineering data contact Engineering

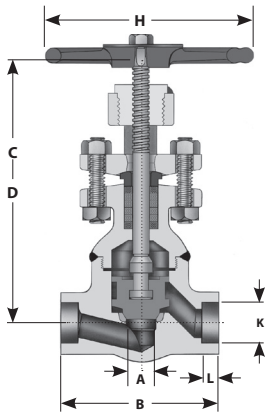
Bolted bonnet dimensions, weights, and C_Vs

Size NPS DN	ASME Class 800								
	A	B	C	D	H	K	L	lb / kg	C_V
¼ (1) 8	0.36 9.2	3.13 80	4.6 117	4.9 124	3 76	0.555 14.1	0.38 9.5	3.5 1.6	1
⅜ (1) 10	0.36 9.2	3.13 80	4.6 117	4.9 124	3 76	0.69 17.5	0.38 9.5	3.5 1.6	2
½ (1) 15	0.36 9.2	3.13 80	4.6 117	4.9 124	3 76	0.855 21.7	0.38 9.5	3.5 1.6	2
¾ 20	0.5 13	3.25 83	6.61 168	7.1 180	4 102	1.065 27.1	0.5 12.7	5.9 2.7	3
1 25	0.75 19	3.5 89	6.7 170	7.3 185	4 102	1.33 33.8	0.5 12.7	6.7 3	6
1¼ 32	1.25 32	5 127	8.11 206	8.7 221	6 152	1.675 42.5	0.5 12.7	18 8.2	14
1½ 40	1.25 32	5 127	8.11 206	8.7 221	6 152	1.915 48.6	0.5 12.7	16 7.3	14
2 50	1.5 38	8 203	10.39 264	11.2 285	8 203	2.406 61.1	0.63 15.9	30 13.6	25

Size NPS DN	ASME Class 1500								
	A	B	C	D	H	K	L	lb / kg	C_V
¼ (1) 8	0.5 13	4 102	7.8 198	8.4 213	6 152	0.555 14.1	0.38 9.5	12 5.4	1
⅜ (1) 10	0.5 13	4 102	7.8 198	8.4 213	6 152	0.69 17.5	0.38 9.5	12 5.4	2
½ (1) 15	0.5 13	4 102	7.8 198	8.4 213	6 152	0.855 21.7	0.38 9.5	12 5.4	2
¾ 20	0.5 13	5 127	7.8 198	8.4 213	6 152	1.065 27.1	0.5 12.7	14 6.4	3
1 25	0.75 19	6 152	9.2 233	10 254	8 203	1.33 33.8	0.5 12.7	29 13.2	6
1¼ 32	1.25 32	7 178	10.1 257	11 279	8 203	1.675 42.5	0.5 12.7	37 16.8	14
1½ 40	1.25 32	7 178	10.1 257	11 279	8 203	1.915 48.6	0.5 12.7	37 16.8	14
2 50	1.5 38	9 229	11 279	12.3 312	12 305	2.406 61.1	0.63 15.9	64 29	25

Bolted bonnet and welded bonnet flanged face-to-face dimensions

Size NPS DN	ASME Class 150	ASME Class 300	ASME Class 600	ASME Class 1500
¼ (1) 8	4 (2) 102	6 (2) 152	6.5 (2) 165	8.5 216
⅜ (1) 10	4 (2) 102	6 (2) 152	6.5 (2) 165	8.5 216
½ (1) 15	4.25 (2) 108	6 (2) 152	6.5 (2) 165	8.5 216
¾ 20	4.62 117	7 178	7.5 190	9 229
1 25	5 127	8 203	8.5 216	10 254
1¼ 32	5.5 140	8.5 216	9 229	11 279
1½ 40	6.5 165	9 229	9.5 241	12 305
2 50	8 203	10.5 266	11.5 292	14.5 368



A = Port
B = End-to-end
C = Center-to-top, closed
D = Center-to-top, open
H = Handwheel
K = Socket weld bore
L = Socket weld depth

Welded bonnet dimensions, weights, and C_Vs

Size NPS DN	ASME Class 800								
	A	B	C	D	H	K	L	lb / kg	C_V
¼ (3) 8	0.36 9.2	2.88 73	4.57 116	4.84 123	3 76	0.555 14.1	0.38 9.5	2.5 1.14	1
⅜ (3) 10	0.36 9.2	2.88 73	4.57 116	4.84 123	3 76	0.69 17.5	0.38 9.5	2.5 1.14	2
½ (3) 15	0.36 9.2	2.88 73	4.57 116	4.84 123	3 76	0.855 21.7	0.38 9.5	2.5 1.14	2
¾ 20	0.5 13	3.25 83	6.6 168	6.9 175	4 102	1.065 27.1	0.5 12.7	4.8 2.2	3
1 25	0.75 19	3.5 89	6.7 170	7.2 183	4 102	1.33 33.8	0.5 12.7	5.7 2.6	6
1¼ 32	1.25 32	5 127	8.05 204	8.93 227	6 152	1.675 42.5	0.5 12.7	12 5.4	14
1½ 40	1.25 32	5 127	8.05 204	8.93 227	6 152	1.915 48.6	0.5 12.7	12 5.4	14
2 50	1.44 37	5.25 133	9.3 236	10 254	6 152	2.406 61.1	0.63 15.9	17 7.7	17

Size NPS DN	ASME Class 1500								
	A	B	C	D	H	K	L	lb / kg	C_V
¼ (3) 8	0.5 13	3.5 89	6.8 173	7.3 185	6 152	0.555 14.1	0.38 9.5	7.5 3.4	1
⅜ (3) 10	0.5 13	3.5 89	6.8 173	7.3 185	6 152	0.69 17.5	0.38 9.5	7.5 3.4	2
½ (3) 15	0.5 13	3.5 89	6.8 173	7.3 185	6 152	0.855 21.7	0.38 9.5	7.5 3.4	2
¾ 20	0.5 13	3.5 89	6.8 173	7.3 185	6 152	1.065 27.1	0.5 12.7	7.5 3.4	3
1 25	0.75 19	5 127	8.3 211	9 229	6 152	1.33 33.8	0.5 12.7	15 6.9	6
1¼ 32	1.25 32	5.25 133	10 254	10.76 273	8 203	1.675 42.5	0.5 12.7	23 10.4	14
1½ 40	1.25 32	5.25 133	10 254	10.76 273	8 203	1.915 48.6	0.5 12.7	23 10.4	14
2 50	1.5 38	10 254	12.8 325	14 356	12 305	2.406 61.1	0.63 15.9	57 26	25

(1) Only for A105 (carbon) and A182 (stainless F316/F316L) body material in socket weld, threaded, butt weld or combination weld ends and 800 pressure class.

All other materials in 800 pressure class, refer to the NPS ¾ (DN 20) design.

(2) Only for A105 (carbon) and A182 (stainless F316/F316L) body material in RF end connections, bolted bonnet design and pressure classes 150, 300, and 600.

All other materials in pressure classes 150, 300, and 600, refer to the NPS ¾ (DN 20) design.

(3) Only for A105 (carbon) body material in socket weld, threaded, butt weld or combination weld ends and 800 pressure class.

All other materials in 800 pressure class, refer to the NPS ¾ (DN 20) design.

Note: C_V refers to low coefficients. K_V is the metric equivalent of C_V. $K_V = C_V \times 0.85$.