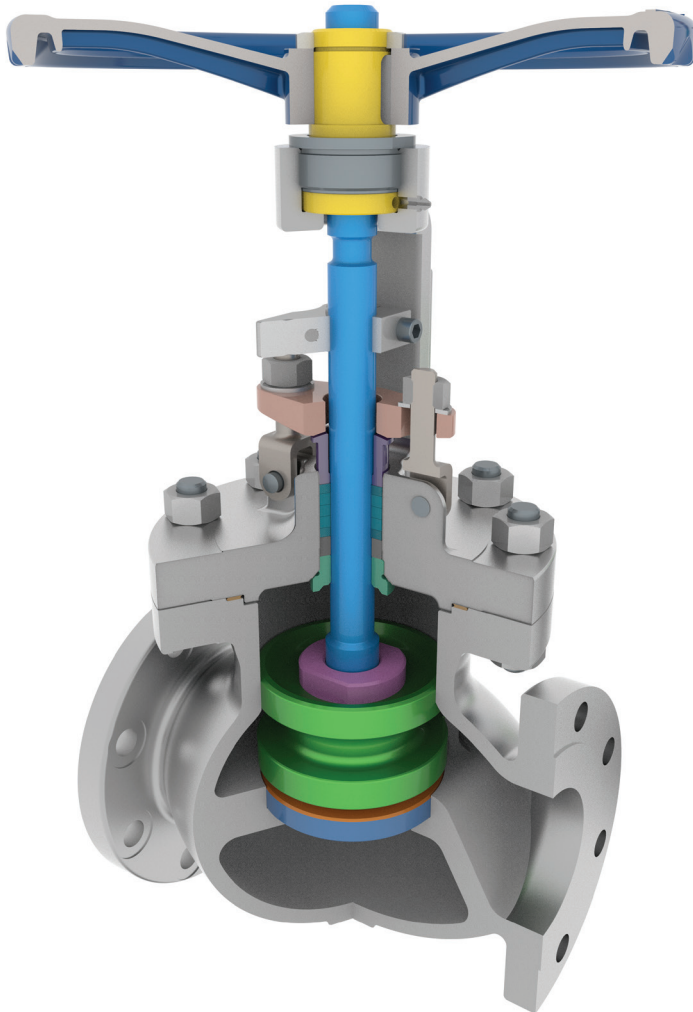


Bolted bonnet cast carbon, stainless or alloy steel

NPS 2–24 (DN 50–600), ASME Classes 150–1500



CONICAL SEAT

All sizes and pressure classes have conical seats.

Figure numbers

ASME Class	Globe	Stop check	Needle
150	0074C	0084C	0094C
300	1074C	1084C	1094C
600	2074C	2084C	2094C
900	7074C	7084C	7094C
1500	3074C	3084C	3094C

Design features

- Unique non-rotating stem design is easily adaptable for actuation—with precision Acme threads and burnished finish. Valve suitable for horizontal installation.
- All graphite packed globe valves are dual qualified to API 624 and ISO-15848-1⁽¹⁾. Stuffing box burnished to fine surface finish.
- Trim: Available in all trim material combinations specified in API 623, as well as custom material combinations.
- All sizes and pressure classes have conical seats to ensure tight shut-off.
- Seat face CoCr alloy hardfaced, ground, and lapped to a mirror finish. Conical seat machined to fine surface finish.
- Body guided disc ensures smooth, robust operation and accurately mates the seating surface of the disc with the surface of the body seat, which is ground and lapped to a mirror finish. When specified by the purchaser, the disc guides are hardfaced to enhance smooth guiding and extend their wear life.
- Body and bonnet castings are precision machined. One-piece bonnet⁽²⁾ for better alignment, fewer parts.
- Body and bonnet joint accurately machined to the required serrated surface finish. Fully enclosed gasket.
- Gland has two-piece construction for easy alignment.
- Torque arm reduces wear on packing rings, enables better sealing and reduces torque.
- Rotating stem nut is austenitic ductile iron Gr. D-2C serviceable in line. When handwheel is used, thrust bearing arrangements vary depending on valve size and class.
- Impactor handwheels
Globe, stop check, and needle valves require higher closing torques than gate valves with the same seat diameter and pressure class. The most economical mechanism for tight shutoff is the impactor handwheel. Two lugs cast under the wheel strike simultaneous blows and give 3–10 times the closing force of standard handwheels. Impactor handwheels are supplied at manufacturer's option unless specified by the purchaser.
- End connection flanges in accordance with ASME B16.5
ASME Classes: 150–300: 1/16" raised face.
ASME Classes: 600–1500: 1/4" raised face.
Finish: 125–250 AARH for all valves.

(1) See Velan's Product update at this link: [PU-API 624-03-18](https://www.velan.com/PU-API-624-03-18). Available to My Velan member's on [velan.com](https://www.velan.com)

(2) One-piece bonnet for: Class 150 and 300 up to NPS 16 (DN 400), for Class 600 and 900 up to NPS 8 (DN 200), and for Class 1500 up to NPS 4 (DN 200).

Quick sheet: API 623 cast steel globe and stop check valves

Standard materials

Part	Materials			
Body ⁽¹⁾	WCB	WC6	WC9	CF8M
Bonnet ⁽¹⁾	WCB	WC6	WC9	CF8M
Seat ⁽¹⁾⁽²⁾	CoCr alloy faced carbon steel	CoCr alloy faced F11	CoCr alloy faced F22	CoCr alloy faced F316
Disc	CA 15 or 13Cr faced A105	CA 15 or 13Cr faced F11	CA 15 or 13Cr faced F22	CoCr Alloy faced CF8M or F316
Disc nut	Carbon steel		SS 304 or 316	
Stem ⁽¹⁾⁽³⁾	SS 410		SS 316	
Backseat ⁽¹⁾⁽³⁾	SS 410		SS 316	
Packing ring ⁽¹⁾	Graphite		SS 316	
Gland stud	Gr. B or B7 ⁽⁴⁾		F316, B8M or 630 ⁽⁵⁾	
Gland nut	Gr. 2H		Gr. 8M	
Packing flange	Carbon steel		SS	
Gland bushing	Carbon steel		SS	
Bonnet stud	B7	B16	B8M or 630	
Bonnet nut	Gr. 2H	Gr. 7	Gr. 8M	
Hinge pin	Steel		Stainless steel	
Gasket ⁽¹⁾	Spiral wound stainless steel/graphite			
Torque arm	Carbon steel			
Yoke bushing	Carbon steel		Stainless steel	
Stem nut	A 439 austenitic ductile iron Gr. D-2C			
Handwheel nut	Malleable iron or steel			
Handwheel ⁽¹⁾	Malleable iron or ductile iron			

(1) Other materials available. (2) Hardfaced. (3) Hardened. (4) For eye bolts Gr.B, for studs B7 is used. (5) For eye bolts F316, for studs B8M or 630 is used.

Dimensions, weights, and Cvs

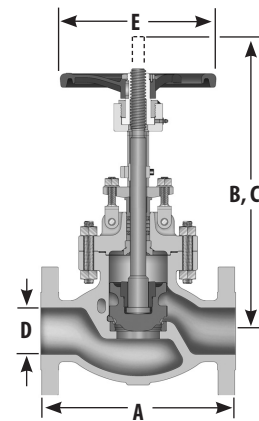
Size NPS DN	ASME Class 150					lb / kg		Cv ⁽⁵⁾
	A	B ⁽¹⁾	C ⁽¹⁾	D	E	BW	FLG	
2	8	16.85	20.88	2	8	49	56	47
50	203	428	530	51	203.2	22	25	
2½	8.5	17.1	21.25	2.5	10	55	65	75
65	216	434	540	64	254	25	30	
3	9.5	18.42	22.75	3	10	86	100	110
80	241	468	578	76	254	39	45	
4	11.5	20.88	26.18	4	14	145	166	203
100	292	530	665	102	356	66	75	
6	16	25.75	32	6	24	240	280	477
150	406	654	813	152	610	109	127	
8	19.5	30.73	38.38	8	24	405	435	873
200	495	780	975	203	610	184	197	
10	24.5	39.25	46.75	8.82	24 ⁽²⁾⁽³⁾	500	550	1396
250	622	997	1187	224	610	227	249	
12	27.5	42.52	53	12	24 ⁽²⁾ or ⁽⁴⁾	856	954	2047
300	699	1080	1346	305	610	388	433	
14	31	54.21	65.44	13.25	⁽⁴⁾	1648	1772	2153
350	787	1377	1662	337	⁽⁴⁾	748	804	
16	36	59.94	72.63	15.25	⁽⁴⁾	2300	2500	2952
400	914	1522	1845	387	⁽⁴⁾	1043	1134	
18	38.5	59.62	75	17.5	⁽⁴⁾	2781	2926	4516
450	978	1514	1905	444	⁽⁴⁾	1262	1327	
24	51	85	119	21.21	⁽⁴⁾	7035	7403	6662
600	1295	2159	3023	539	⁽⁴⁾	3191	3358	

(1) Height does not include actuator. (2) Impactor handwheel. (3) Gear actuator is optional. (4) Gear actuator. (5) Flow coefficients (Cv). Kv is the metric equivalent of Cv. Kv = Cv x 0.85

Design specifications

Item	Applicable specification
General design	API 623
Wall thickness	API 623
Pressure-temperature rating	ASME B16.34
Face-to-face dimensions for butt weld and flanged valves	ASME B16.10
Flange design	ASME B16.5
Butt welding design	ASME B16.25
Materials	ASTM

Forged globe valves
ASME Classes 900–2500 and
Inclined cast globe valves
ASME Classes 900–2500
are also available.



A = Face-to-face (flanged)
End-to-end (butt weld)
B = Center-to-top, open
C = Dismantling height
D = Port
E = Handwheel

Quick sheet: API 623 cast steel globe and stop check valves

Dimensions, weights, and Cvs

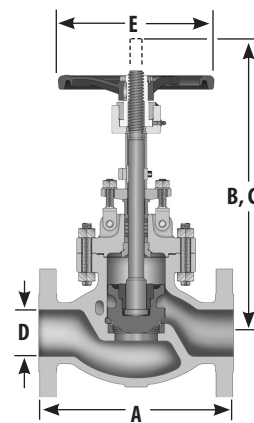
Size NPS DN	ASME Class 300							
	A	B ⁽¹⁾	C ⁽¹⁾	D	E	lb / kg		C _V ⁽⁵⁾
						BW	FLG	
2	10.5	16.85	20.88	2	8	48	63	47
50	267	428	530	51	203	22	28	
2½	11.5	17.1	21.25	2.5	10	62	78	75
65	292	434	540	64	254	28	35	
3	12.5	18.42	22.75	3	10	93	115	110
80	318	468	578	76	254	42	52	
4	14	20.88	26.18	4	14	170	192	203
100	356	530	665	102	356	77	87	
6	17.5	26.38	32.88	5.31	24 ⁽²⁾⁽³⁾	298	361	374
150	445	670	835	135	610	135	164	
8	22	32	38.88	7.17	24 ⁽²⁾ or ⁽⁴⁾	480	563	697
200	559	813	988	182	610	218	255	
10	24.5	42.34	52.18	8.82	24 ⁽²⁾ or ⁽⁴⁾	985	1115	1086
250	622	1075	1325	224	610	447	506	
12	28	46.19	62.75	10.81	⁽⁴⁾	1655	1847	1662
300	711	1173	1594	275		751	838	
14	33	54.21	72	11.93	⁽⁴⁾	1800	2100	2153
350	838	1377	1829	303		816	953	
16	34	59.94	76	13.73	⁽⁴⁾	2300	2700	2952
400	863	1522	1930	349		1043	1225	
18	38.5	59.62	75	15.53	⁽⁴⁾	5460	5905	4516
450	978	1514	1905	394		2477	2678	
24	55	85	119	20.93	⁽⁴⁾	7316	8202	6652
600	1397	2159	3023	532		3318	3720	

Size NPS DN	ASME Class 600							
	A	B ⁽¹⁾	C ⁽¹⁾	D	E	lb / kg		C _V ⁽⁵⁾
						BW	FLG	
2	11.5	17.1	21.13	2	10	63	77	47
50	292	434	537	51	254	29	35	
2½	13	18.67	22.88	2.2	10	94	113	75
65	330	474	581	56	254	43	51	
3	14	20.19	24.13	3	14	144	169	110
80	356	513	613	76	356	65	77	
4	17	23.88	29.25	3.54	24 ⁽²⁾⁽³⁾	280	328	159
100	432	607	743	90	610	127	149	
6	22	31.22	37.88	5.31	24 ⁽²⁾⁽³⁾	459	575	372
150	559	793	962	135	610	208	261	
8	26	41.75	57.88	7.17	⁽⁴⁾	1058	1214	700
200	660	1060	1470	182		480	551	
10	31	47.16	59	8.74	⁽⁴⁾	1807	2087	1064
250	787	1198	1499	222		820	947	
12	33	57.53	72.16	9.84	⁽⁴⁾	2975	3276	1375
300	838	1461	1833	250		1349	1486	

- (1) Height does not include actuator. (2) Impactor handwheel.
 (3) Gear actuator is optional. (4) Gear actuator.
 (5) Flow coefficients (C_V). K_V is the metric equivalent of C_V. K_V = C_V × 0.85

Size NPS DN	ASME Class 900							
	A	B ⁽¹⁾	C ⁽¹⁾	D	E	lb / kg		C _V ⁽⁵⁾
						BW	FLG	
2	14.5	19.75	25	1.65	18	149	187	32
50	368	502	635	42	457	68	85	
2½	—	—	—	—	—	—	—	50
65								
3	15	24.09	30.5	2.71	14 ⁽²⁾⁽³⁾	264	309	90
80	381	612	775	69	356	120	140	
4	18	27.5	35.38	3.54	18	459	531	158
100	457	699	899	90	457	208	241	
6	24	39.13	45.03	5.18	⁽⁴⁾	805	948	399
150	610	939	1143	132		365	430	
8	29	50.13	62.63	6.76	⁽⁴⁾	1603	1829	619
200	737	1273	1590	172		727	830	
10	33	59.38	75.65	8.45	⁽⁴⁾	2556	2960	977
250	838	1508	1922	215		1159	1342	

Size NPS DN	ASME Class 1500							
	A	B ⁽¹⁾	C ⁽¹⁾	D	E	lb / kg		C _V ⁽⁵⁾
						BW	FLG	
2	14.5	19.75	25	1.65	18	149	187	32
50	368	502	635	42	457	68	85	
2½	—	—	—	—	—	—	—	50
65								
3	18.5	24.09	30.5	2.48	14 ⁽²⁾⁽³⁾	288	354	75
80	470	612	775	63	356	131	160	
4	21.5	27.42	35.38	3.26	⁽⁴⁾	549	646	133
100	546	696	899	83		249	293	



- A = Face-to-face (flanged)
 End-to-end (butt weld)
 B = Center-to-top, open
 C = Dismantling height
 D = Port
 E = Handwheel