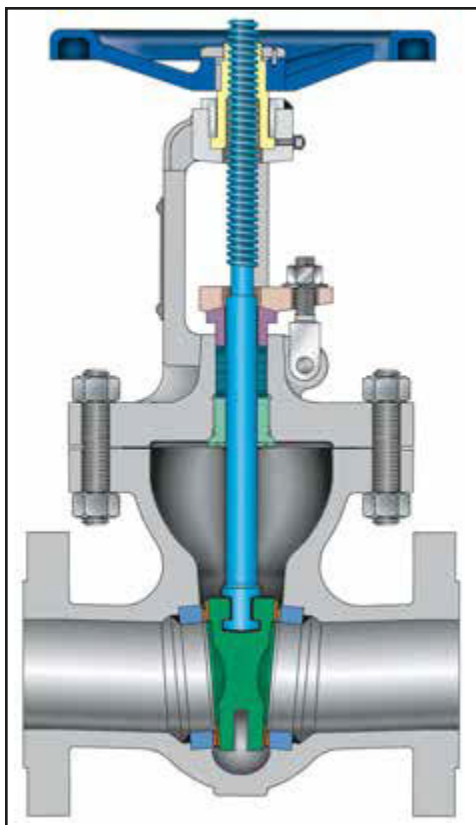


# VELAN CAST STEEL API 600 GATE VALVES

## BOLTED BONNET CAST CARBON, STAINLESS OR ALLOY STEEL

NPS 2–64 (DN 50–1600), ASME CLASSES: 150– 1500



ASME CLASS	FIGURE NUMBER
150	0064C
300	1064C
600	2064C
900	7064C
1500	3064C

### STANDARD MATERIALS

PART	MATERIALS			
Body <sup>(1)</sup>	WCB	WC6	WC9	CF8M
Bonnet <sup>(1)</sup>	WCB	WC6	WC9	CF8M
Stem <sup>(1)(3)</sup>	SS 410			SS 316
Wedge <sup>(1)</sup>	CA 15 or 13Cr faced WCB	CA 15 or 13Cr faced WC6	CA 15 or 13Cr faced WC9	CF8M
Seat <sup>(1)(2)</sup>	CoCr alloy faced carbon steel	CoCr alloy faced F11	CoCr alloy faced F22	CoCr alloy faced F316
Packing flange	Carbon steel			Stainless steel
Gland bushing	Carbon steel			Stainless steel
Packing ring <sup>(1)</sup>	Graphite			Graphite
Gland stud	Gr. B or B7(4)			F316, B8M or 630(5)
Gland nut	Gr. 2H			Gr. 8M
Body/bonnet nut	Gr. 2H	Gr. 4		Gr. 8M
Body/bonnet stud	B7		B16	B8M or 630
Back seat <sup>(1)(3)</sup>		SS 410		SS 316
Gasket <sup>(1)</sup>	Class 150: corrugated steel/graphite Class 300–1500: spiral wound stainless steel/graphite			
Key	Carbon steel			
Yoke bushing	Carbon steel			Stainless steel
Bearing	Steel			
Handwheel nut	Malleable iron or steel			
Handwheel <sup>(1)</sup>	Malleable iron or ductile iron			
Grease fitting	Steel			
Groove pin	Carbon steel			Stainless steel
Bushing	Carbon steel			Stainless steel
Washer	Carbon steel			Stainless steel
Name plate	Stainless steel			
Identification tag	Stainless steel			
Rivet	Stainless steel			
Stem nut	A 439 Austenitic ductile iron Gr. D-2C			

(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.

### Design features

- **Universal trim.** 13Cr stem, wedge in CA 15 or 13Cr faced, and CoCr alloy faced seat API Trim 8 suitable for applications up to 850°F (454°C).
- **Seat face** CoCr alloy hardfaced, ground, and lapped to a mirror finish.
- **Flexible wedge** with low center stem-wedge contact, in solid CA15 (13Cr) or hardfaced with 13Cr, SS 316, Monel or CoCr alloy. Wedge is ground and lapped to a mirror finish and tightly guided to prevent dragging and seat damage. A CoCr alloy hardfaced CF8M wedge is also available.
- **Non-rotating stem** with precision ACME threads and burnished finish. Double ACME for faster operation.
- **Body and bonnet joint** accurately machined. Gasket materials on page 4, details on page 9.
- **Body and bonnet** castings are precision machined. One-piece bonnet<sup>(1)</sup> for better alignment and fewer parts.
- **Gland** has two-piece construction for easy alignment.
- **Flanges:**  
ASME Classes 150–300: 1/16" raised face.  
ASME Classes 600–1500: 1/4" raised face.  
Finish 125–250 AARH for all valves.
- **Rotating stem nut** is Austenitic ductile iron Gr. D-2C renewable in line (as shown). Thrust bearings are supplied as follows:  
ASME Classes 150–300:  
NPS 10–12 (DN 250–300), 1 bearing (top)  
NPS 16 (DN 400) and up, 2 bearings  
ASME Classes 600–1500: NPS 6 (DN 150) and up.

(1) One-piece bonnet for Class 150 up to NPS 16 (DN 400) and Class 1500 up to NPS 6 (DN 150) only.

## DESIGN SPECIFICATIONS

ITEM	APPLICABLE SPECIFICATION
Wall thickness and general design ≤ NPS 42 in Pressure Class 150 and 300 and ≤ NPS 24 in Pressure Class 600 and greater.	API 600
Wall thickness and general design > NPS 42 in Pressure Class 150 and 300 and > NPS 24 in Pressure Class 600 and greater.	ASME B16.34 plus additional allowance
Pressure-temperature rating	ASME B16.34
Face-to-face dimensions	ASME B16.10 for butt weld and flanged valves
Flange design	ASME B16.5
Butt welding design	ASME B16.25
Materials	ASTM

For information on  
**BELLOWS SEAL  
VALVES** see  
**VEL-BS catalog.**

## GATE VALVE DIMENSIONS

SIZE NPS DN	ASME CLASS 150					ASME CLASS 300					ASME CLASS 600					ASME CLASS 900					ASME CLASS 1500						
	A		B <sup>(1)</sup>	C <sup>(1)</sup>	D	E	A	B <sup>(1)</sup>	C <sup>(1)</sup>	D	E	A	B <sup>(1)</sup>	C <sup>(1)</sup>	D	E	A	B <sup>(1)</sup>	C <sup>(1)</sup>	D	E	A	B <sup>(1)</sup>	C <sup>(1)</sup>	D	E	
	BW	FLG																									
2	8.50	7.00	15.63	20.38	2.00	8	8.50	15.63	20.38	2.00	8	11.50	15.66	20.51	2.00	8	14.50	21.25	29.00	1.88	10	14.50	21.25	29.00	1.88	10	
50	216	178	397	518	51	203	216	397	518	51	203	292	398	521	51	203	368	540	737	48	254	368	540	737	48	254	
2½	9.50	7.50	16.88	22.14	2.50	8	9.50	16.94	22.20	2.50	8	13.00	18.59	24.19	2.50	10	-	-	-	-	-	-	-	-	-	-	-
65	241	191	429	562	64	203	241	430	564	64	203	330	472	614	64	254	-	-	-	-	-	-	-	-	-	-	
3	11.13	8.00	18.56	24.26	3.00	10	11.13	20.22	26.38	3.00	10	14.00	21.63	27.78	3.00	10	15.00	25.75	34.50	2.88	14	15.00	25.75	34.50	2.75	14	
80	282	203	471	616	76	254	283	514	670	76	254	356	549	706	76	254	381	654	876	73	356	470	654	876	70	356	
4	12.00	9.00	22.25	28.32	4.00	10	12.00	23.90	30.95	4.00	10	17.00	25.75	32.76	4.00	14	18.00	28.75	37.50	3.88	18	18.00	28.75	37.50	3.63	18	
100	305	229	565	719	102	254	305	607	786	102	254	432	654	832	102	356	457	730	953	99	457	546	730	953	92	457	
6	15.88	10.50	31.19	38.00	6.00	14	15.87	32.31	40.38	6.00	14	22.00	36.28	44.18	6.00	20	24.00	39.00	49.00	5.75	20	24.00	39.00	49.00	5.38	20	
150	403	267	792	965	152	356	403	821	1026	152	356	559	922	1122	152	508	610	991	1245	146	508	705	991	1245	137	(2)	
8	16.50	11.50	38.19	46.13	8.00	18	16.50	40.94	50.16	8.00	18	26.00	43.72	53.25	7.88	24	29.00	51.75	62.75	7.50	24	29.00	51.75	62.75	7.00	24	
200	419	292	970	1172	203	457	419	1040	1274	203	457	660	1110	1353	200	610	737	1315	1594	191	(2)	832	1149	1524	178	(2)	
10	18.00	13.00	47.16	56.28	10.00	20	18.00	49.19	59.87	10.00	20	31.00	49.06	59.87	9.75	30	33.00	57.75	67.25	9.38	30	33.00	57.75	67.25	8.75	30	
250	457	330	1198	1430	254	508	457	1249	1521	254	508	787	1246	1521	248	762	838	1467	1708	238	(2)	991	1467	1803	222	(2)	
12	19.75	14.00	55.91	66.75	12.00	20	19.75	59.00	70.61	12.00	20	33.00	61.13	72.74	11.75	30	38.00	66.57	83.00	11.13	30	38.00	66.57	83.00	10.38	30	
300	502	356	1420	1695	305	508	502	1499	1763	305	508	838	1553	1848	298	762	965	1691	2108	283	(2)	1130	1868	2327	264	(2)	
14	22.50	15.00	61.50	75.50	13.25	24	22.50	61.38	77.75	13.25	24	35.00	72.50	83.50	12.88	40	40.50	73.88	90.00	12.25	40	40.50	73.88	90.00	11.30	40	
350	572	381	1562	1918	337	610	572	1559	1975	337	610	889	1842	2121	327	(2)	1029	1877	2286	311	(2)	-	-	-	-	-	
16	24.00	16.00	68.75	85.00	15.25	24	24.00	68.75	85.50	15.25	24	39.00	82.25	91.00	14.75	44	44.50	80.44	100.00	14.00	44	44.50	80.44	100.00	13.00	44	
400	610	406	1746	2159	387	610	610	1746	2172	387	610	991	2089	2311	375	(2)	1130	2043	2540	356	(2)	-	-	-	-	-	
18	26.00	17.00	73.25	90.00	17.25	24	26.00	77.88	94.00	17.00	24	43.00	87.06	116.00	16.50	50	-	-	-	-	-	-	-	-	-	-	-
450	660	432	1861	2286	438	610	660	1978	2388	432	(2)	1092	2211	2946	419	(2)	-	-	-	-	-	-	-	-	-	-	-
20	28.00	18.00	83.00	100.00	19.25	30	28.00	86.50	100.00	19.00	30	47.00	103.00	123.00	18.25	50	-	-	-	-	-	-	-	-	-	-	-
500	711	457	2108	2540	489	762	711	2197	2540	483	(2)	1194	2616	3124	464	(2)	-	-	-	-	-	-	-	-	-	-	-
24	32.00	20.00	97.00	115.00	23.25	30	32.00	101.25	125.00	23.00	30	55.00	115.00	132.00	22.00	50	-	-	-	-	-	-	-	-	-	-	-
600	813	508	2464	2921	591	762	813	2572	3175	584	(2)	1397	2921	3353	559	(2)	-	-	-	-	-	-	-	-	-	-	-
26	34.00	22.00	114.50	125.00	25.00	30	34.00	114.50	125.00	25.00	30	57.00	103.86	125.00	21.38	50	-	-	-	-	-	-	-	-	-	-	-
650	864	559	2908	3175	635	(2)	864	2908	3175	635	(2)	1448	2638	3175	543	(2)	-	-	-	-	-	-	-	-	-	-	-
28	36.00	24.00	118.63	130.00	27.00	30	36.00	118.63	130.00	27.00	30	61.00	108.25	135.00	23.00	50	-	-	-	-	-	-	-	-	-	-	-
700	914	610	3013	3302	686	(2)	914	3013	3302	686	(2)	1549	2750	3429	584	(2)	-	-	-	-	-	-	-	-	-	-	-
30	36.00	24.00	124.13	140.00	29.25	30	36.00	124.13	145.00	29.25	30	65.00	122.50	150.00	24.75	50	-	-	-	-	-	-	-	-	-	-	-
750	914	610	3153	3556	743	(2)	914	3153	3683	743	(2)	1651	3112	3810	629	(2)	-	-	-	-	-	-	-	-	-	-	-
32	38.00	26.00	129.63	150.00	30.75	30	38.00	129.63	150.00	30.75	30	70.00	145.06	170.00	29.25	50	-	-	-	-	-	-	-	-	-	-	-
800	965	660	3293	3810	781	(2)	965	3293	3810	781	(2)	1778	3684	4318	743	(2)	-	-	-	-	-	-	-	-	-	-	-
34	40.00	28.00	143.00	163.00	32.75	30	40.00	147.63	168.00	32.75	30	76.00	138.00	187.00	31.00	50	-	-	-	-	-	-	-	-	-	-	-
850	1000	700	3632	4140	832	(2)	1000	3750	4267	832	(2)	1930	3505	4750	787	(2)	-	-	-	-	-	-	-	-	-	-	-
36	40.00	28.00	146.68	170.00	35.25	30	40.00	147.81	185.00	35.25	30	76.00	145.13	170.00	29.00	50	-	-	-	-	-	-	-	-	-	-	-
900	1016	711	3726	4318	895	(2)	1016	3754	4699	895	(2)	1727	3686	4318	737	(2)	-	-	-	-	-	-	-	-	-	-	-
38	41.00	29.00	155.91	175.00	36.50	30	41.00	155.91	175.00	36.50	30	86.00	121.00	162.00	34.50	50	-	-	-	-	-	-	-	-	-	-	-
950	1041	736	3960	4445	927	(2)	1041	3960	4445	927	(2)	1844	4115	5030	876	(2)	-	-	-	-	-	-	-	-	-	-	-
40	42.00	30.00	158.66	188.00	38.50	30	42.00	167.00	190.00	38.50	30	90.00	175.00	198.00	36.38	50	-	-	-	-	-	-	-	-	-	-	-
1000	1067	762	4030	4775	978	(2)	1067	4242	4826	978	(2)	2286	4445	5030	924	(2)	-	-	-	-	-	-	-	-	-	-	-
42	44.00	31.00	166.50	195.00	40.25	30	44.00	167.00	190.00	38.50	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1050	1118	787	4229	4953	1022	(2)	1118	4242	4826	978	(2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	80.00	186.75	286.00	42.25	30	98.00	185.00	211.00	40.50	50	-	-	-	-	-	-	-	-	-	-	-
1100	-	-	-	-	-	-	2032	4743	7264	1073	(2)	2490	4700	5360	1028	(2)	-	-									