

# Cast Steel Gate Valve

VA-114  
VA-115  
VA-116

## Designs Features:

- Seal Welded Seat Rings
- Integral/Weld deposit Seating material on wedge
- Ground and lapped Seating Surface for bubble tight sealing and longer life
- Flexible wedge as standard
- Back-seat arrangement as standard
- Live loading of Gland/Leak-off available on request
- Hard facing/Stellite 6 seating surface available on request

## Conformity to Standards and Codes:

**Design:** API 600

**Face to Face:** ASME B16.10

**Flange Ends:** ASME B16.5

**Butt Weld Ends:** ASME B16.25

**Valve Testing:** API 598

## Applications:

### Energy

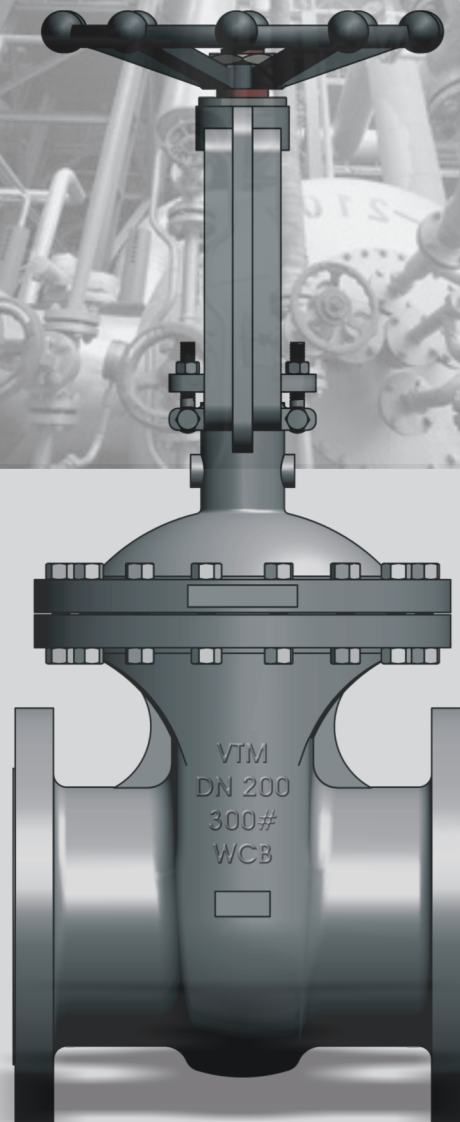
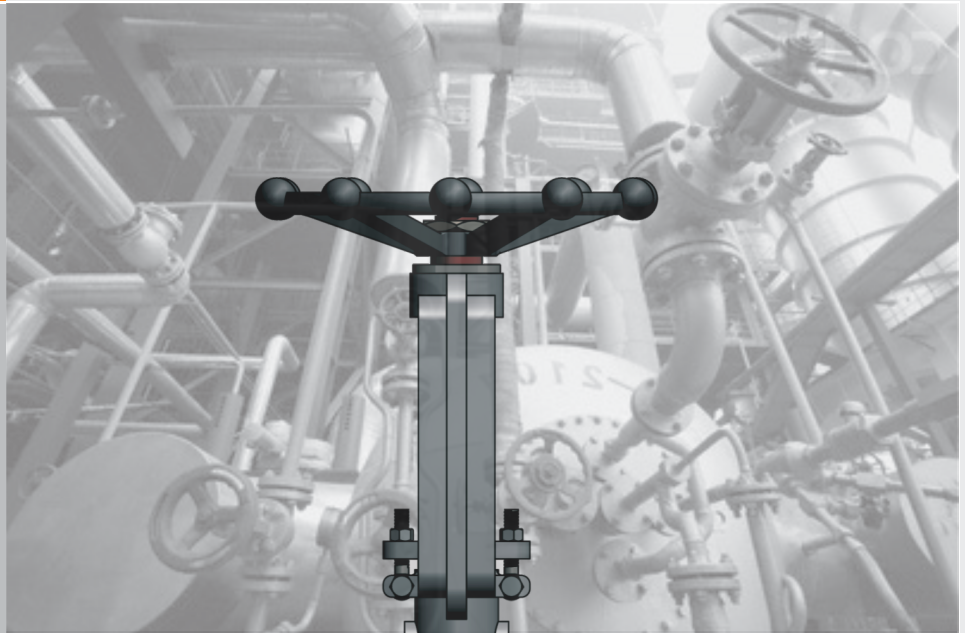
- Power Generation,  
Oil and Gas, Refining etc

### Processing

- Chemical Processing,  
Pulp and Water, Food and Beverages,  
Petro Chemicals etc

### Other Industries

- Marine, Effluent Treatment,  
Mining, OEM etc



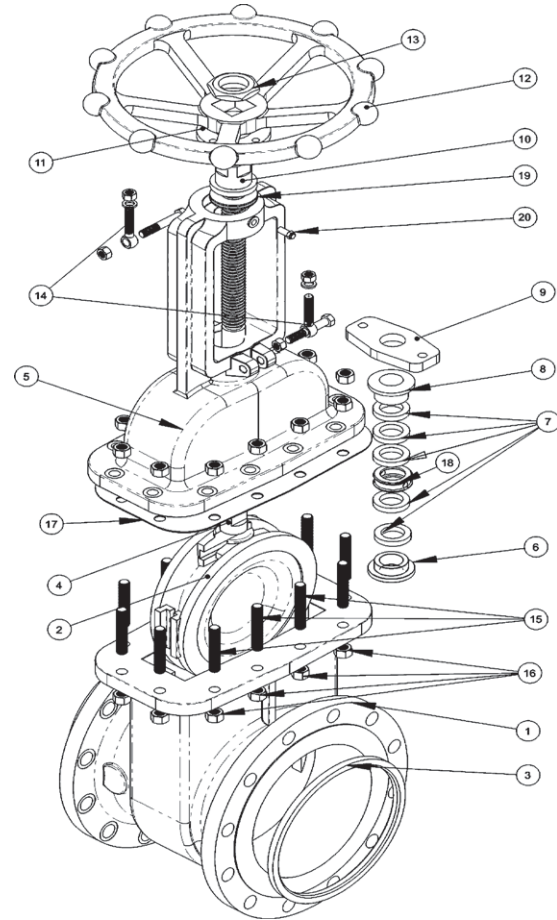
DOC.NO.:VAV-C-1014; REV. NO.:01; REV. DATE: 30-07-2016



[www.vtm-valves.com](http://www.vtm-valves.com)

## TYPICAL VTM BOLTED BONNET CAST STEEL GATE VALVE PARTS

S.NO.	PART NAME	SPECIFICATIONS
1.	BODY	ASTM A 216 Gr. WCB
2.	WEDGE	ASTM A217 Gr. CA-15 / ASTM A216 Gr. WCB + 13% Cr.
3.	BODY SEAT RING	ASTM A217 Gr. CA-15(13% Cr.)
4.	STEM	ASTM A276 Gr. 410(13% Cr.)
5.	BONNET	ASTM A 216 Gr. WCB
6.	BACK SEAT	ASTM A276 Gr. 410(13% Cr.)
7.	GLAND PACKING	PURE GRAPHITE (WITH INCONEL WIRE & CORROSION INHIBITOR)
8.	GLAND FOLLOWER	STEEL
9.	GLAND FLANGE	STEEL
10.	YOKE SLEEVE	BS: 1400 AB1C / AISI 416
11.	YOKE RETAINING NUT	MID STEEL
12.	HAND WHEEL	DUCTILE IRON
13.	WHEEL RETAINING NUT	DUCTILE IRON
14.	GLAND EYE BOLTS & NUTS	CARBON STEEL
15.	BONNET STUDS	ASTM A193 Gr. B7
16.	BONNET NUTS	ASTM A194 Gr. 2H
17.	BODY BONNET GASKET	CLASS 150#- CORRUGATED STEEL/GRAPHITE CLASS 300-600#- SPIRAL WOUND STAINLESS STEEL GRAPHITE
18.	LANTERN RING	CARBON STEEL/STAINLESS STEEL
19.	THRUST BEARING	SKF/EQUIVALENT IN SPECIFICATION
20.	LUBRICATOR	MID STEEL



## OTHER GRADED MATERIAL

Designation	ASTM Classification	Material Classification	Service Conditions
NONE	A216 WCB	CARBON STEEL	For Service up to 1000° F (538°C) where corrosion and oxidation are not a factor. (1)(4)(5)
WC6	A217 WC6	1 ¼ CR, ½ MO	For service up to 1000° F (538°C) (2)(3)(4)(5)
WC9	A217 WC9	2 ¼ CR, 1 MO	For service up to 1000° F (538°C) where good creep strength is required (2)(3)(4)(5)
C5	A217 C5	5% CR, ½MO	For service up to 1200° F. Best corrosion and oxidation resistance plus high creep strength are required. (2)
C12	A217C12	9% CR, 1 MO	For service up to 1200° F. Best corrosion and oxidation resistance than other grades.
LCC	A351 LCC	LOW CARBON STEEL	For service from -50° F to 650° F. This material must be quenched and tempered to obtain tensile and impact properties needed at sub - zero temperatures.

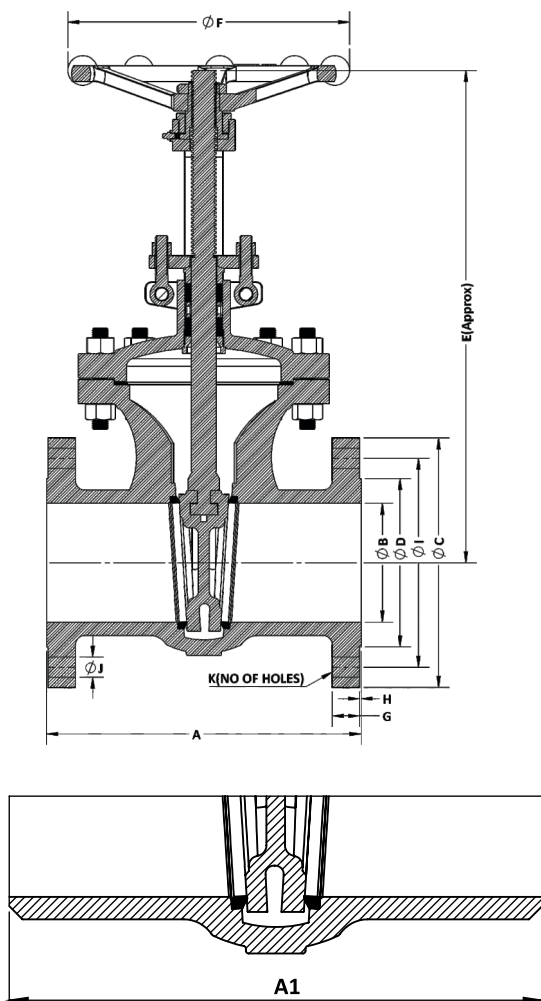
- (1) Upon prolonged exposure to temperatures above 800° F, the carbide phase of carbon steel may be converted to graphite. Permissible, but not recommended for prolonged usage above 800° F.  
 (2) Valve regularly rated to 1000° F.  
 (3) Considerations should be given to possibility of excessive oxidation (scaling) when used above 1050° F.  
 (4) Product used within the jurisdiction of Section 1 Power Boilers of the ASME Boiler and Pressure Vessel code is subject to the same temperature limitations as specified in that document.  
 (5) Product used within the jurisdiction of power Piping, ASME Code for Pressure Piping B31.1, is subject to the same maximum temperature limitations placed upon the material in paragraph 124.2.

## NOMINAL TRIM MATERIAL

API Trim No.	Nominal Trim	Seating Surface	Stem Material	Temperature
1	F6 (1)	13% Cr ASTM A217(CA-15)	S.S. 410. 13%Cr	1100°F
5	HARD FACE (2)	Cobalt base alloy/Stellite 6	S.S. 410. 13%Cr	1200°F
9	MONEL (4)	Ni-Cu Alloy	Ni-Cu Alloy	450°F
10	316 (3)	S.S. 316	S.S. 316	850°F
8	F6 (1) & HARD FACED (2)	13% Cr ASTM A217(CA-15) Hard Faced	S.S. 410. 13%Cr	1100°F
11	MONEL (4) & HARD FACED (2)	Ni-Cu Alloy Hard Faced	Ni-Cu Alloy	450°F

- (1) 13% Chromium AISI Type 410 Stainless Steel category.  
 (2) Hard Facing is weld deposited Cobalt base alloy.  
 (3) Austenitic Stainless Steel is a Ni-Cr-Mo stainless steel in the AISI Type 316  
 (4) Ni-Cu Alloy.

## VTM CAST STEEL GATE VALVE CL 150#, 300#, 600# TECHNICAL SPECIFICATIONS



APPLICABLE STANDARD	
DESIGN STANDARD	API 600
PRESSURE TEMPERATURE RATING	ASME B 16.34
FLANGE DIMENSIONS	ASME B 16.5
FACE TO FACE DIMENSIONS	ASME B 16.10
TESTING STANDARD	API 598
BUTT WELD ENDS	ASME B 16.25

### DIMENSIONS #150

	A	A1	B	C	D	E	F	G	H	I	J	K
40	165	165	38.1	125	73.0	271	220	12.7	2	98.4	15.87	4
50	178	216	50.8	150	92.1	325	220	14.3	2	120.7	19.05	4
65	190	241	63.5	180	104.8	347	220	15.9	2	139.7	19.05	4
80	203	282	76.2	190	127.0	401	250	17.5	2	152.4	19.05	4
100	229	305	101.6	230	157.2	459	250	22.3	2	190.5	19.05	8
125	254	381	127.0	255	185.7	511	250	22.3	2	215.9	22.22	8
150	267	403	152.4	280	215.9	618	332	23.9	2	241.3	22.22	8
200	292	419	203.2	345	269.9	772	380	27.0	2	298.5	22.22	8
250	330	457	254.0	405	323.8	888	460	28.6	2	362.0	25.40	12
300	356	502	304.8	485	381.0	1027	460	30.2	2	431.8	25.40	12
350	381	572	336.0	535	412.7	1262	590	33.4	2	476.3	28.57	12
400	406	610	387.0	595	470.0	1346	590	35.0	2	539.8	28.57	16
450	432	660	438.0	635	533.4	1561	590	38.1	2	577.9	31.75	16
500	457	711	488.0	700	584.2	1708	670	41.3	2	635.0	31.75	20
600	508	813	590.0	815	692.2	2164	670	46.1	2	749.3	34.92	20

NOTE: All dimensions are in mm unless and otherwise specified.

### DIMENSIONS #300

SIZE (MM)	A	A1	B	C	D	E	F	G	H	I	J	K
40	190	190	38.1	155	73.0	271	220	19.1	2	114.3	22.22	4
50	216	216	50.8	165	92.1	327	220	20.7	2	127.0	19.05	8
65	241	241	63.5	190	104.8	350	220	23.9	2	149.2	22.22	8
80	282	282	76.2	210	127.0	402	250	27.0	2	168.3	22.22	8
100	305	305	101.6	255	157.2	465	250	30.2	2	200.0	22.22	8
125	381	457	127.0	280	185.7	525	250	33.4	2	235.0	22.22	8
150	403	521	152.4	320	215.9	627	332	35.0	2	269.9	22.22	12
200	419	559	203.2	380	269.9	790	380	39.7	2	330.2	25.4	12
250	457	635	254.0	445	323.8	900	460	46.1	2	387.4	28.57	16
300	502	762	304.8	520	381.0	1030	460	49.3	2	450.8	31.75	16

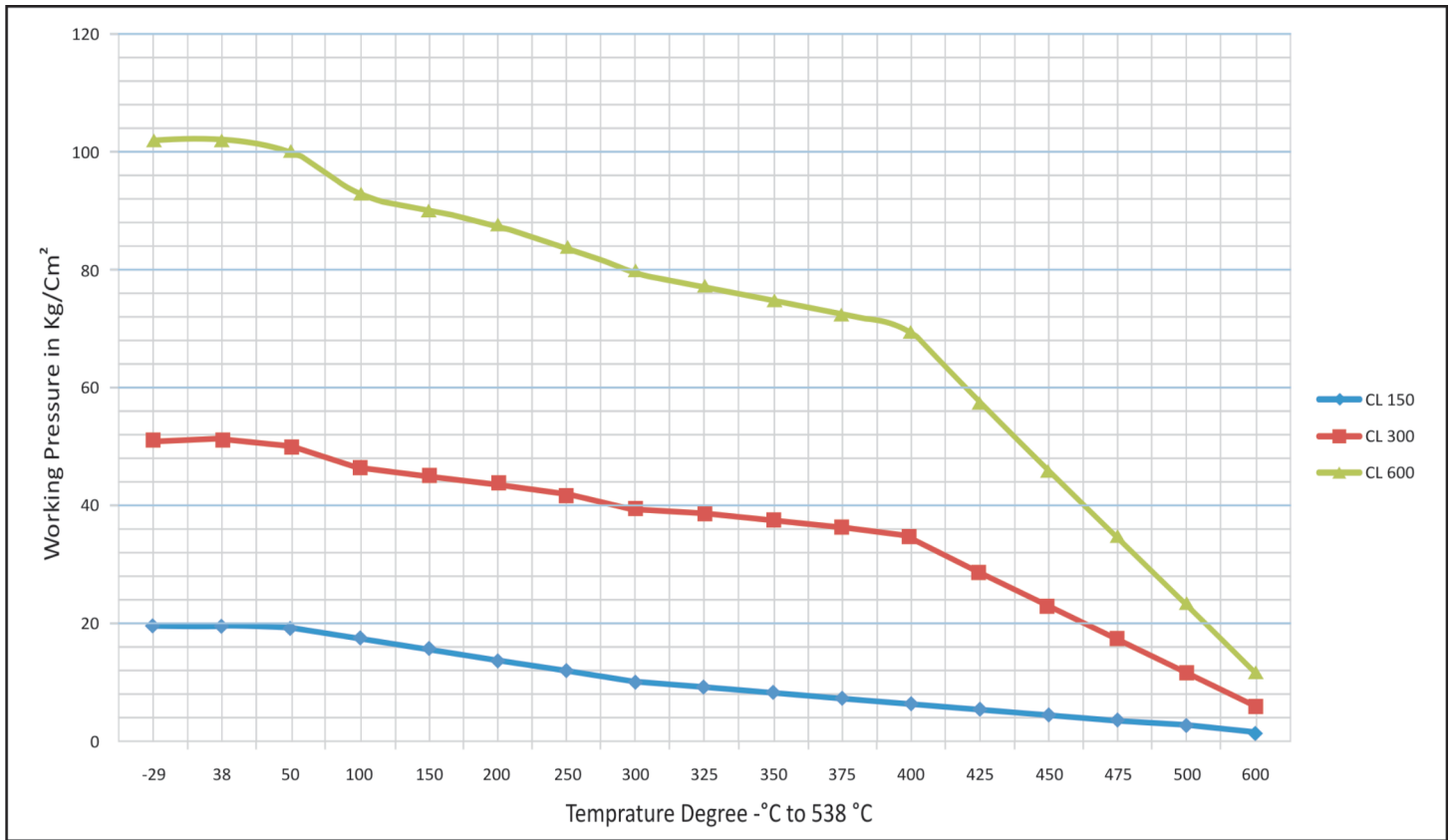
### DIMENSIONS #600

SIZE (MM)	A	A1	B	C	D	E	F	G	H	I	J	K
40	241	241	38.1	155	73.0	273	220	26.3	7	114.3	22.22	4
50	292	292	50.8	165	92.1	330	250	25.4	7	127.0	19.05	8
65	330	330	63.5	190	104.8	355	250	28.6	7	149.2	22.22	8
80	356	356	76.2	210	127.0	410	332	31.8	7	168.3	22.22	8
100	432	432	101.6	275	157.2	480	380	38.1	7	215.9	25.40	8
125	508	508	127.0	330	185.7	530	460	44.5	7	266.7	28.57	8
150	559	559	152.4	355	215.9	640	460	47.7	7	292.1	28.57	12
200	660	660	203.2	420	269.9	799	600	55.6	7	349.2	31.75	12
250	787	787	254.0	510	323.8	850	600	63.5	7	431.8	34.92	16
300	838	838	304.8	560	381.0	1090	710	66.7	7	489.0	34.92	20

### TEST PRESSURE

CLASS	SHELL TEST PRESSURE (HYDROSTATIC)	SEAT TEST PRESSURE	
		HYDROSTATIC	PNEUMATIC
#150	30 (Kg/cm <sup>2</sup> )	22 (Kg/cm <sup>2</sup> )	4-7 (Kg/cm <sup>2</sup> )
#300	78 (Kg/cm <sup>2</sup> )	57 (Kg/cm <sup>2</sup> )	4-7 (Kg/cm <sup>2</sup> )
#600	156 (Kg/cm <sup>2</sup> )	114 (Kg/cm <sup>2</sup> )	4-7 (Kg/cm <sup>2</sup> )

## PRESSURE TEMPERATURE RATING TO ASME/ANSI B 16.34 FOR ASTM A 216 GR. WCB



NOTES:- · The Above Chart is Based on Standard Values only. · The Curve shown above is related to valves provided with standard sizes & Class.

### GUARANTEE

All valves are guaranteed against any manufacturing defects for a period of 12 months from date of supply, provided the valves have not been misused, damaged or installed for services they are not recommended. The company shall be liable to furnish part / parts thereof or full valve as the company may deem fit.

Authorized Stockist

## PRESSURE-TEMPERATURE RATING TO ASME/ANSI B 16.34 FOR ASTM A 216 GR. WCB

TEMPERATURE °C	Working Pressure, in Bar		
	CL-150	CL-300	CL-600
-29	19.6	51.1	102.1
38	19.6	51.1	102.1
50	19.2	50.1	100.2
100	17.7	46.6	93.2
150	15.8	45.1	90.2
200	13.8	43.8	87.6
250	12.1	41.9	83.9
300	10.2	39.8	79.6
325	9.3	38.7	77.4
350	8.4	37.6	75.1
375	7.4	36.4	72.7
400	6.5	34.7	69.4
425	5.5	28.8	57.5
450	4.6	23.0	46.0
475	3.7	17.4	34.9
500	2.8	11.8	23.5
538	1.4	5.9	11.8

## V.A. VALVES

ISO 9001-2008 Certified

Regd. Office & Works: Udyog Nagar, Gadaipur, Jalandhar City -144 004

Phone: +91-181-2601540, 2601541 Fax: +91-181-2601741

E-mail : vavalves@vtm-utam.com

Website : [www.vtm-utam.com](http://www.vtm-utam.com), [www.vtm-valves.com](http://www.vtm-valves.com)

Due to continuous development program, design and data in this leaflet are subject to change without prior notice.

Our associates:



PIONEERING FLUID CONTROLS