

VELAN

API 603 CAST STAINLESS STEEL GATE, GLOBE & CHECK VALVES

ASME Classes 150–300
1/2–24" (15–600 mm)

Class 800
1/2–1 1/2" (15–40 mm)



PROFILE

Velan is one of the world's leading manufacturers of industrial valves, supplying forged and cast steel gate, globe, check, ball and knife gate valves for critical applications in the chemical, petrochemical, oil and gas, fossil and nuclear power, cogeneration, pulp and paper and cryogenic industries.

Founded in 1950, Velan earned a reputation for excellence as a major supplier of forged valves for nuclear power plants and the U.S. Navy. Velan Inc., pioneered many designs which became industry standards, including bellows seal valves, all stainless steel knife gate valves and forged valves up to 24".

Velan valves are manufactured in 11 specialized plants, including four in Canada, two in the U.S., and one each in the U.K., France, Portugal, Germany, Korea and Taiwan. We have a total of 1,116 employees in North America and 360 overseas.

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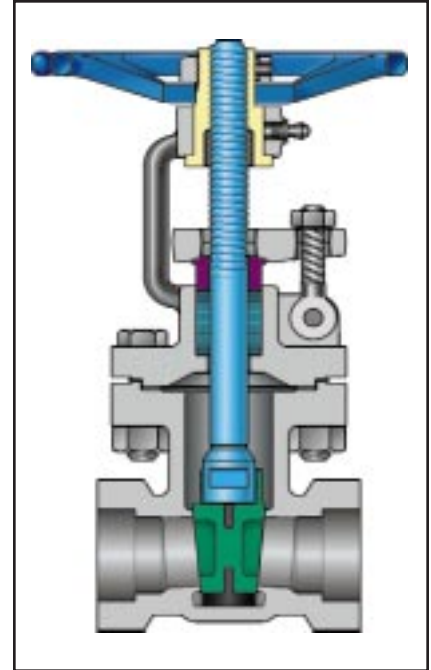
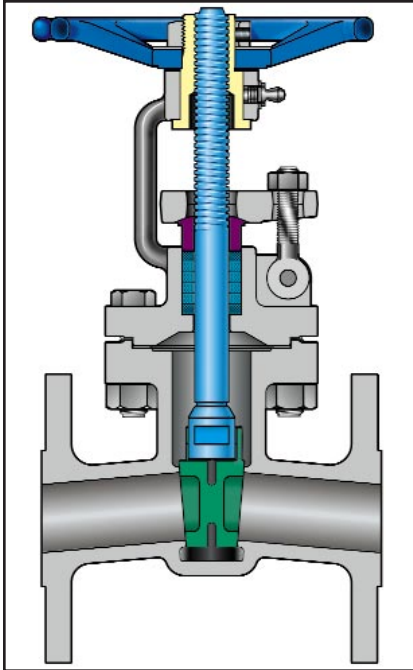
NOTE: The material in this catalog is for general information. For specific performance data and proper material selection, consult your Velan representative. Although every attempt has been made to ensure that the information contained in this catalog is correct, Velan reserves the right to change designs, materials or specifications without notice.



**CAST STAINLESS STEEL GATE VALVES API 603
INTEGRAL SEAT, 1/2–1 1/2", (15–40 mm)**

FLANGED, ASME CLASSES 150, 300, WALL THICKNESS TO B16.34

CLASS 800 GATE VALVES FULL PORT 1/2–1 1/2", (15–40 mm)
THREADED OR SOCKET WELD, ASME CLASS 800



**Precision High Quality
Investment Castings**

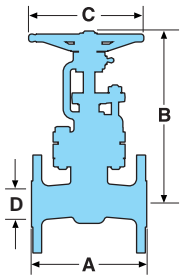
Gate Valves with unique flexible wedge

FLANGED

CLASS	FIGURE NUMBERS
150	0064C-13SX or GX
300	1064C-13SX or GX

THREADED-SOCKET WELD

CLASS	FIGURE NUMBERS
800	2064C-13SX or GX



STANDARD MATERIALS

PART		MATERIAL
Body		A 351 Gr. CF8M
Bonnet		A 351 Gr. CF8M
Wedge		A 351 Gr. CF8M
Stem		Gr. 316
Gland		Gr. 316
Gland flange		A 351 Gr. CF8M
Handwheel		Malleable iron (painted)
Handwheel nut		Stainless steel
Body/Bonnet cap screw		Gr. B8M
Body/Bonnet nut		Gr. 8M
Gland stud		Gr. 304
Gland nut		Gr. 8M
Gland packing	SX	Teflon
	GX	Graphite
Gasket	SX	Teflon with stainless
	GX	Graphite with stainless
Name plate		Stainless steel
Stem nut		Gr. 416 nickel plated

DIMENSIONS AND WEIGHTS

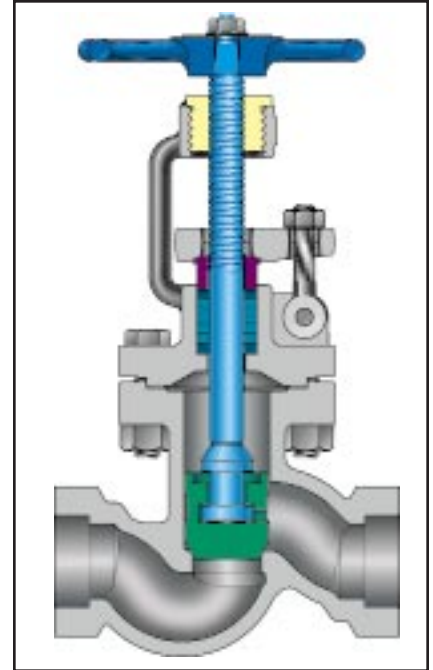
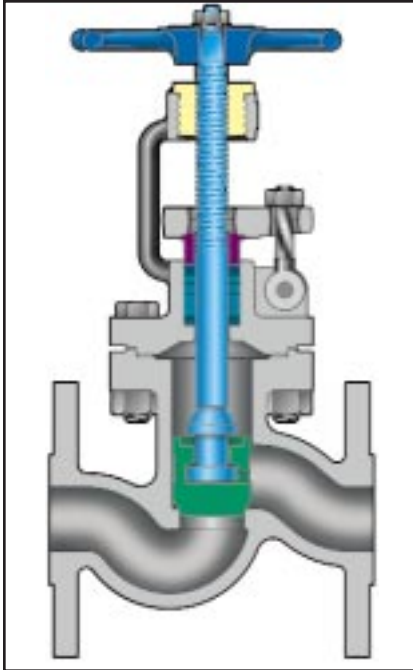
SIZE in mm	FLANGED, ASME 150 (PN 20)					FLANGED, ASME 300 (PN 50)					THREADED - SOCKET WELD, ASME 800				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
1/2 15	4.25 108	8.06 205	4.75 121	0.62 15.7	8 3.6	5.50 140	8.11 206	4.75 121	0.62 15.7	10 4.5	2.88 73	7.97 202	4.75 121	0.62 15.7	6 2.7
3/4 20	4.63 118	8.07 205	4.75 121	0.75 19	9 4.1	6.00 152	8.14 207	4.75 121	0.75 19	11 5.0	3.25 83	7.95 202	4.75 121	0.75 19	7 3.2
1 25	5.00 127	8.67 220	4.75 121	1.00 25.4	10 4.5	6.50 165	8.73 222	4.75 121	1.00 25.4	14 6.4	3.50 89	8.55 217	4.75 121	1.00 25.4	8 3.6
1 1/2 40	6.50 165	11.91 303	8.00 203	1.50 38.1	23 10.4	7.50 191	11.95 304	8.00 203	1.50 38.1	25 11.3	5.00 127	11.79 300	8.00 203	1.50 38.1	20 9.1



**CAST STAINLESS STEEL GLOBE VALVES API 603
INTEGRAL SEAT, 1/2–1 1/2", (15–40 mm)**

FLANGED, ASME CLASSES 150, 300, WALL THICKNESS TO B16.34

CLASS 800 GLOBE VALVES FULL PORT 1/2–1 1/2", (15–40 mm)
THREADED OR SOCKET WELD, ASME CLASS 800



**Precision High Quality
Investment Castings**

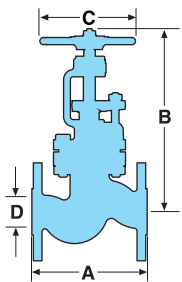
Globe Valves with fully guided disc

FLANGED

CLASS	FIGURE NUMBERS
150	0074C-13SX or GX
300	1074C-13SX or GX

THREADED-SOCKET WELD

CLASS	FIGURE NUMBERS
800	2074C-13SX or GX



STANDARD MATERIALS

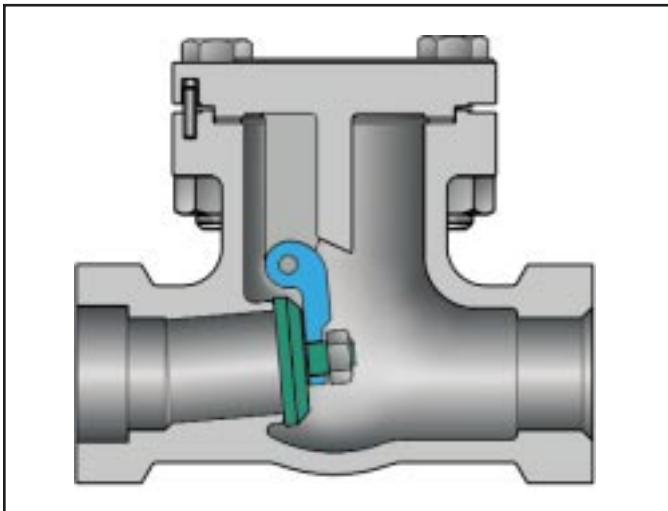
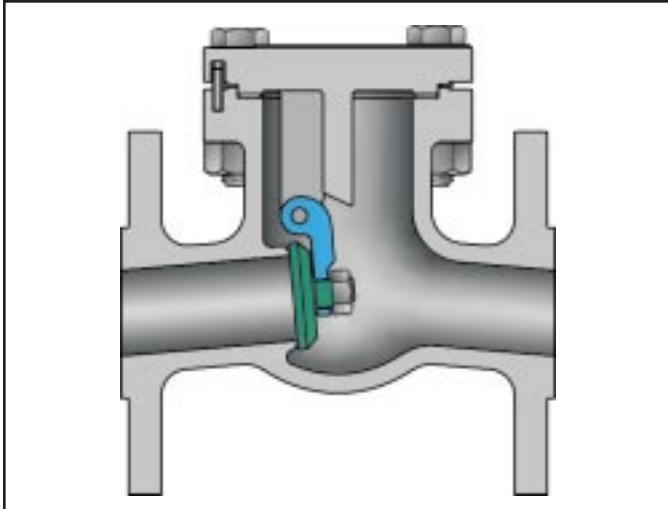
PART	MATERIAL
Body	A 351 Gr. CF8M
Bonnet	A 351 Gr. CF8M
Disc	A 351 Gr. CF8M
Stem	Gr. 316
Gland	Gr. 316
Gland flange	A 351 Gr. CF8M
Yoke bushing	Gr. 416 nickel plated
Handwheel	Malleable iron (painted)
Handwheel nut	Stainless steel
Body/Bonnet cap screw	Gr. B8M
Body/Bonnet nut	Gr. 8M
Gland stud	Gr. 304
Gland nut	Gr. 8M
Gland packing	SX GX Teflon Graphite
Gasket	SX GX Teflon with stainless Graphite with stainless
Name plate	Stainless steel

DIMENSIONS AND WEIGHTS

SIZE in mm	FLANGED, ASME 150 (PN 20)					FLANGED, ASME 300 (PN 50)					THREADED - SOCKET WELD, ASME 800				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
1/2 15	4.25 108	8.31 211	4.00 102	0.50 13	7 3.2	6.00 152	8.31 211	4.00 102	0.50 13	9 4.1	3.75 95	8.31 211	4.00 102	0.50 13	6 2.7
3/4 20	4.63 118	8.31 211	4.00 102	0.75 19	8 3.6	7.00 178	8.31 211	4.00 102	0.75 19	10 4.5	4.25 108	8.31 211	4.00 102	0.75 19	7 3.2
1 25	5.00 127	9.08 230	4.00 102	1.00 25.4	10 4.5	8.00 203	9.08 230	4.00 102	1.00 25	12 5.4	5.00 127	9.08 230	4.00 102	1.00 25	8 3.6
1 1/2 40	6.50 165	11.28 286	8.00 203	1.50 38.1	22 10.0	9.00 229	11.28 286	8.00 203	1.50 38	29 13.2	6.00 152	11.28 286	8.00 203	1.50 38	18 8.2



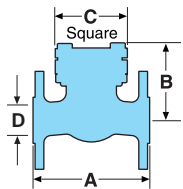
**CAST STAINLESS STEEL SWING CHECK VALVES API 603
INTEGRAL SEAT, 1/2–1 1/2", (15–40 mm)
FLANGED, ASME CLASSES 150, 300, WALL THICKNESS TO B16.34
CLASS 800 VALVES FULL PORT 1/2–1 1/2", (15–40 mm)
THREADED OR SOCKET WELD, ASME CLASS 800**



**Precision High Quality
Investment Castings**

STANDARD MATERIALS

PART		MATERIAL
Body		A 351 Gr. CF8M
Cover		A 351 Gr. CF8M
Disc		A 351 Gr. CF8M
Hinge		A 351 Gr. CF8M
Pin		Gr. 316
Disc nut		Gr. 8M
Cap screw		Gr. B8M
Cover nut		Gr. 8M
Gasket	SX	Teflon with stainless
	GX	Graphite with stainless
Name plate		Stainless steel



FLANGED

CLASS	FIGURE NUMBERS
150	0114C–13SX or GX
300	1114C–13SX or GX

THREADED-SOCKET WELD

CLASS	FIGURE NUMBERS
800	2114C–13SX or GX

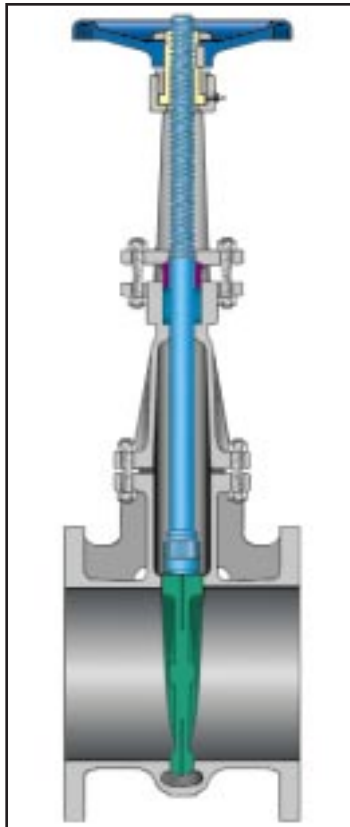
DIMENSIONS AND WEIGHTS

SIZE in mm	FLANGED, ASME 150 (PN 20)					FLANGED, ASME 300 (PN 50)					THREADED - SOCKET WELD, ASME 800				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
1/2 15	4.25 108	3.08 78	2.87 73	0.62 15.7	5 2.3	6.00 152	3.16 80	2.87 73	0.62 15.7	7 3.2	3.75 95	3.03 77	2.87 73	0.62 15.7	4 1.8
3/4 20	4.62 117	3.10 79	2.87 73	0.75 19	6 2.7	7.00 178	3.20 81	2.87 73	0.75 19	8 3.6	3.75 95	3.01 76	2.87 73	0.75 19	5 2.3
1 25	5.00 127	3.31 84	3.12 79	1.00 25.4	8 3.6	8.50 216	3.47 88	3.12 79	1.00 25.4	12 5.4	5.00 127	3.26 83	3.12 79	1.00 25.4	7 3.2
1 1/2 40	6.00 152	4.56 116	4.00 102	1.50 38.1	16 7.3	9.50 241	4.69 119	4.00 102	1.50 38.1	24 10.9	6.00 152	4.48 114	4.00 102	1.50 38.1	12 5.4



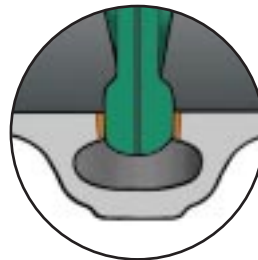
CAST STAINLESS STEEL GATE VALVES API 603 INTEGRAL SEAT, 2–24", (50–600 mm)

FLANGED, ASME CLASSES 150, 300, WALL THICKNESS TO B16.34
WITH FLEXIBLE WEDGE



STANDARD MATERIALS

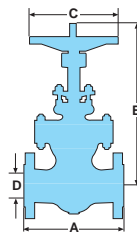
PART		MATERIAL
Body		A 351 Gr. CF8M
Bonnet		A 351 Gr. CF8M
Wedge		A 351 Gr. CF8M
Stem		Gr. 316
Gland		Gr. 316
Gland flange		A 351 Gr. CF8M
Yoke bushing		Gr. 316
Handwheel		Malleable iron (painted)
Handwheel nut		Carbon steel
Body/bonnet stud		Gr. B8M
Body/Bonnet nut		Gr. 8M
Gland stud		Gr. 304
Gland nut		Gr. 8M
Spring pin		Stainless steel
Gland packing	SX or SY	Teflon
	GX or GY	Graphite
Gasket	SX or SY	Teflon with stainless wire mesh
	GX or GY	Graphite with stainless steel foil
Name plate		Stainless steel
Stem nut		Ni-resist type D-2C



**Optional integral
Stellited seat face
available for longer
service life.**

DIMENSIONS AND WEIGHTS

SIZE in mm	FLANGED, ASME 150 (PN 20)					FLANGED, ASME 300 (PN 50)				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
2 50	7.00 178	13.00 330	8.00 203	2.00 51	30 13.6	8.50 216	14.00 356	8.00 203	2.00 51	44 20.0
2½ 65	7.50 191	15.75 400	8.00 203	2.50 64	46 20.9	9.50 241	16.75 425	8.00 203	2.50 64	60 27.2
3 80	8.00 203	17.75 451	8.00 203	3.00 76	52 23.6	11.13 283	18.50 470	8.00 203	3.00 76	86 39.0
4 100	9.00 229	21.50 546	10.00 254	4.00 102	80 36.4	12.00 305	22.63 575	10.00 254	4.00 102	134 60.8
6 150	10.50 267	28.25 718	10.00 254	6.00 152	135 61.2	15.88 403	29.75 756	10.00 254	6.00 152	247 112.07
8 200	11.50 292	36.50 927	14.00 356	8.00 203	222 100.9	16.50 419	39.19 995	14.00 356	8.00 203	390 177.3
10 250	13.00 330	45.00 1143	18.00 457	10.00 254	324 147.3	18.00 457	45.50 1150	18.00 457	10.00 254	630 285.8
12 300	14.00 356	60.25 1530	18.00 457	12.00 305	472 214.1	19.75 502	65.38 1661	18.00 457	12.00 305	880 400.0
14 350	15.00 381	65.00 1651	21.63 549	13.25 337	685 310.7					
16 400	16.00 406	75.00 1905	23.63 600	15.25 387	1000 453.5					
18 450	17.00 432	81.00 2057	29.50 749	17.25 438	1300 589.6					
20 500	18.00 457	93.00 2362	29.50 749	19.25 489	1500 680.3					
24 600	20.00 508	107.00 2718	31.50 800	23.25 591	2000 907.0					



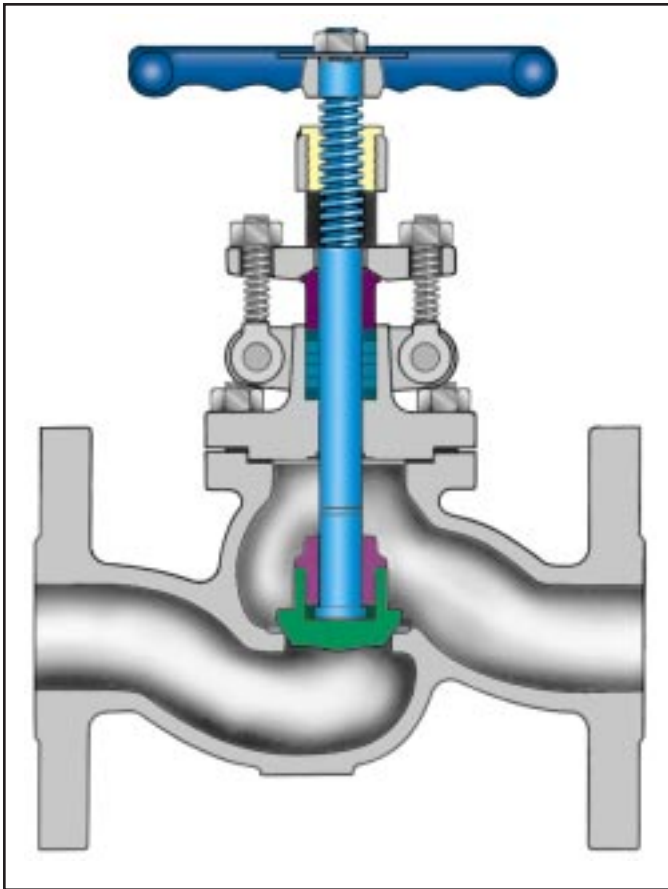
B = Center to Top, Open

CLASS	FIGURE NUMBERS	
	STAINLESS SEAT	STELLITE SEAT
150	0064C-13SX or GX	0064C-13SY or GY
300	1064C-13SX or GX	1064C-13SY or GY



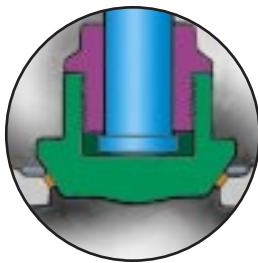
CAST STAINLESS STEEL GLOBE VALVES API 603 INTEGRAL SEAT, 2–6" (50–150 mm)

FLANGED, ASME CLASSES 150, 300, WALL THICKNESS TO B16.34

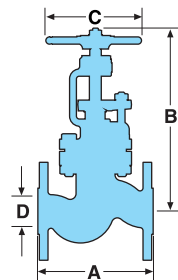


STANDARD MATERIALS

PART		MATERIAL
Body		A 351 Gr. CF8M
Bonnet		A 351 Gr. CF8M
Disc		A 351 Gr. CF8M
Stem		Gr. 316
Disc nut		A 351 Gr. CF8M
Gland pin		Gr. 316
Gland		Gr. 316
Gland flange		A 351 Gr. CF8M
Yoke bushing		Austenitic ductile iron Gr. D-2C
Handwheel		Malleable iron
Handwheel nut		Carbon steel
Name plate		Stainless steel
Bonnet stud		Gr. B8M
Bonnet nut		Gr. 8M
Gland stud		Gr. 304
Gland nut		Gr. 8M
Gland packing	SX or SY	Teflon
	GX or GY	Graphite
Gasket	SX or SY	Teflon with stainless wire mesh
	GX or GY	Graphite with stainless steel foil



**Optional integral
Stellited seat face
available for longer
service life.**



B = Center to Top, Open

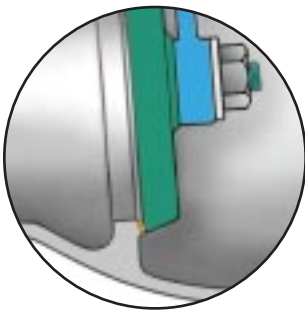
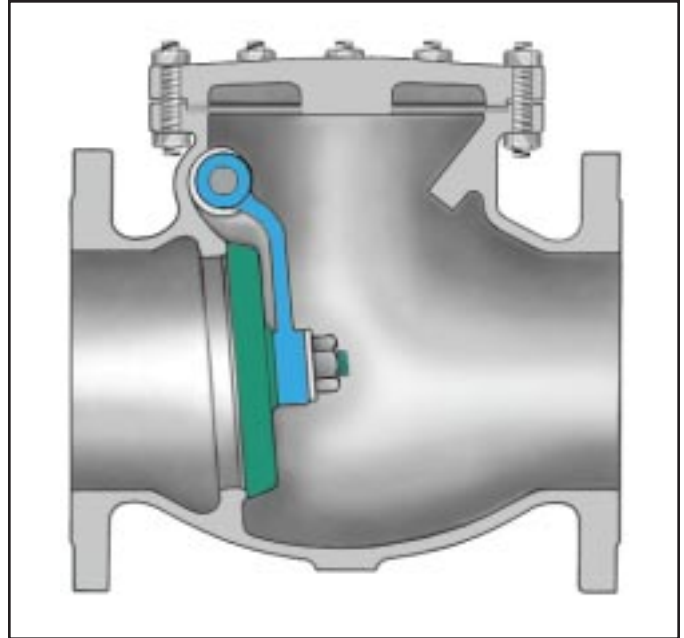
CLASS	FIGURE NUMBERS	
	STAINLESS SEAT	STELLITE SEAT
150	0074C-13SX or GX	0074C-13SY or GY
300	1074C-13SX or GX	1074C-13SY or GY

DIMENSIONS AND WEIGHTS

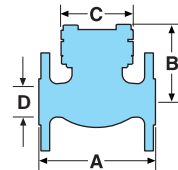
SIZE	FLANGED, ASME 150 (PN 20)					FLANGED, 0ASME 300 (PN 50)				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
2	8.00	9.50	8.00	2.00	27	10.50	11.06	8.00	2.00	45
50	203	241	203	51	12.3	267	281	203	51	20.4
2½	8.50	10.44	10.00	2.50	40	11.50	12.25	10.00	2.50	70
65	216	265	254	64	18.2	292	311	254	64	31.7
3	9.50	12.19	10.00	3.00	50	12.50	13.75	10.00	3.00	87
80	241	310	254	76	22.7	318	349	254	76	39.5
4	11.50	14.81	10.00	4.00	83	14.00	16.44	10.00	4.00	130
100	292	376	254	102	37.6	356	418	254	102	59.0
6	16.00	19.19	10.00	6.00	154	17.50	21.38	14.00	6.00	252
150	406	487	254	152	69.9	445	543	356	152	114.3



**CAST STAINLESS STEEL SWING CHECK VALVES API 603
INTEGRAL SEAT, 2–12" (50–300 mm)
FLANGED, ASME CLASSES 150, 300, WALL THICKNESS TO B16.34**



**Optional integral
Stellited seat face
available for longer
service life.**



CLASS	FIGURE NUMBERS	
	STAINLESS SEAT	STELLITE SEAT
150	0114C-13SX or GX	0114C-13SY or GY
300	1114C-13SX or GX	1114C-13SY or GY

DIMENSIONS AND WEIGHTS

SIZE	FLANGED, ASME 150 (PN 20)					FLANGED, ASME 300 (PN 50)				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
2 50	8.00 203	4.00 102	4.00 ⁽¹⁾ 102	2.00 51	21 9.5	10.50 267	4.75 121	5.00 ⁽¹⁾ 127	2.00 51	42 19.1
2½ 65	8.50 216	4.50 114	5.50 140	2.50 64	30 13.6	11.50 292	5.50 140	6.50 165	2.50 64	62 28.2
3 80	9.50 241	5.00 127	6.75 172	3.00 76	43 19.5	12.50 318	6.25 159	8.00 203	3.00 76	80 36.4
4 100	11.50 292	5.75 146	8.00 203	4.00 102	68 30.9	14.00 356	7.00 178	9.00 229	4.00 102	118 53.6
6 150	14.00 356	7.56 192	10.00 254	6.00 152	128 58.2	17.50 445	8.63 219	11.00 279	6.00 152	212 96.4
8 200	19.50 495	9.50 241	13.25 337	8.00 203	226 102.7	21.00 533	10.63 270	13.00 330	8.00 203	330 150.0
10 250	24.50 622	10.75 273	16.00 406	10.00 254	317 143.8	24.50 622	12.00 305	17.00 432	10.00 254	528 240.0
12 300	27.50 699	13.00 330	19.00 482	12.00 305	530 240.9	28.00 711	15.00 381	20.00 508	12.00 305	802 364

(1) Square

STANDARD MATERIALS

PART	MATERIAL
Body	A 351 Gr. CF8M
Cover	A 351 Gr. CF8M
Disc	A 351 Gr. CF8M
Hinge	A 351 Gr. CF8M
Pin	Gr. 316
Plug	Gr. 316
Disc nut	Gr. 8M
Washer	Gr. 316
Cotter pin	Gr. 316
Cover stud	Gr. B8M
Cover nut	Gr. 8M
Gasket	SX or SY GX or GY Teflon with stainless wire mesh Graphite with stainless steel foil
Nameplate	Stainless steel

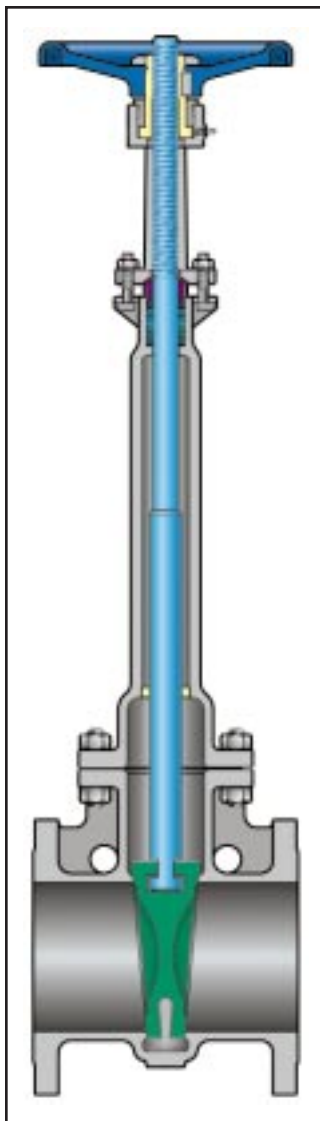


CAST STAINLESS STEEL CRYOGENIC GATE, GLOBE & CHECK VALVES API 603, INTEGRAL SEAT 1/2–24" (15–600 mm) ASME CLASSES 150, 300

The production, transport and storage of liquified gases such as oxygen, nitrogen, argon, natural gas, hydrogen or helium (down to -425°F), presents several technical problems. Velan specially-adapted extended bonnet cast valves offer safe and efficient service.

MATERIALS:

- **Body and bonnet:** Austenitic stainless steel castings used for bodies and bonnets offer excellent impact strength, minimal heat loss and protection against corrosion.
- **Stem:** Austenitic stainless steel. To reduce galling, stems are also offered in Nitronic 50 (A479 grade XM-19).



- **Wetted parts:** All Austenitic stainless steel and/or Stellite 6. Bronze wedges available.
- **Stem nut/yoke bushing:** Austenitic ductile iron Gr. D-2C (2" and up), Gr. 416 Nickel plated (1/2 to 1 1/2").
- **Packing:** Teflon or graphite packing protected from low temperatures by a column of insulating gas.
- **Seating faces:** Stellite 6 seats are available, 2" and larger. When 0-tight shutoff is required, globe and check valves can be supplied with soft inserts (Teflon or Neoflon).
- **Bolting:** Strain-hardened Austenitic stainless steel.
- **Lubrication of stem nut:** Exxon Nebula Lubriplate No. 930-AA, Shell Darina EPI or equivalent.

DESIGN FEATURES:

- **Extended bonnets** with sufficient gas column length, usually specified by customer, are supplied for all valves to keep stem packing at sufficient distance away from the cold fluid to remain functional.
- **Flexible wedges.**
- **Resilient inserts** are available for globe, piston and swing check discs.
- **Cleaning:** All cryogenic valves are thoroughly degreased and cleaned and pipe ends are sealed to prevent contamination.

TABLE OF LIQUIFIED GASES

Type	Boiling Point		Liquid Density lb/ft. ³
	°C	°F	
Natural gas (LNG)	-168	-270	26
Methane (CH ₄)	-161.5	-258	26.20
Oxygen (O ₂)	-182.9	-296	71.20
Argon (A)	-185.9	-303	87.40
Carbon Dioxide (CO ₂)	-78.5	-109	50.60
Air	-194.4	-318	57.87
Nitrogen (N ₂)	-195.8	-320	50.45
Hydrogen(H ₂)	-252.7	-423	4.43
Helium (He)	-268.9	-452	7.82
Absolute zero	-273.16	-460	-

MANUFACTURING PROGRAM

API 603 CLASS 150 & 300 CAST STAINLESS STEEL GATE, GLOBE & CHECK VALVES⁽¹⁾

FLANGED

VALVE TYPE & CLASS	FIGURE NUMBER	SIZE (in, mm)																
		½ 15	¾ 20	1 25	1½ 40	2 50	2½ 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600
GATE	150	0064C-13SX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	300	1064C-13SX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
GLOBE	150	0074C-13SX	✓	✓	✓	✓	✓	✓	✓	✓								
	300	1074C-13SX	✓	✓	✓	✓	✓	✓	✓	✓								
CHECK	150	0114C-13SX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
	300	1114C-13SX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					

(1) Also available in 13GX, SY and GY.








API 603 CLASS 800 CAST STAINLESS STEEL GATE, GLOBE & CHECK VALVES⁽²⁾

THREADED & SOCKET WELD

Gate	2064C-13GX	✓	✓	✓	✓													
Globe	2074C-13GX	✓	✓	✓	✓													
Swing	2114C-13GX	✓	✓	✓	✓													

(2) Threaded end and socket weld end Class 800 valves are supplied with CF3M body to ASTM A 351. Please verify pressure-temperature rating.

HOW TO ORDER

Type of Connection	Size of Connection	Class	Type	Body/Bonnet Style	Body Material	Trim Material
A	B	C	D	E	F	G
						
e.g.: F	1 0	— 0	0 6	4 C	— 1 3	S X

(Flanged 3" 150 class cast stainless steel full bore gate valve.)

The figure numbers shown on this key are designed to cover essential features of Velan valves. Please use figure numbers to ensure prompt and accurate processing of your order. A detailed description must accompany any special orders.

You may specify valve size of connection separately or as part (B) of the figure number.

Examples:

F10-0064C-13SX (valve size is part of figure number)
3"F-0064C-13SX (valve size is shown separately)

A TYPE OF CONNECTION

A Special F Flanged, B16.5 U Undrilled flanged
C Combination S Threaded W Socket weld

B SIZE OF CONNECTION (SEE EXPLANATION ABOVE)

03 ½"	08 2"	12 4"	16 10"	21 18"
04 ¾"	09 2½"	13 5"	18 12"	22 20"
05 1"	10 3"	14 6"	19 14"	23 22"
07 1½"	11 3½"	15 8"	20 16"	24 24"

C CLASS

0 150 1 300 2 800

D VALVE TYPE

06 Full port gate 08 Stop check 11 Swing check
07 Stop (globe) 09 Needle 99 Special

E BODY/BONNET STYLE

4C Vertical bolted bonnet
4E Extended bonnet for cryogenic service

F BODY MATERIAL

01 Special	14 Stainless steel, CF3M
11 Stainless steel, CF8	15 Stainless steel, CF8C
12 Stainless steel, CF3	23 Alloy 20
13 Stainless steel, CF8M	28 Stainless steel, CG8M

G TRIM MATERIAL

Code	Wedge/Disc Seating Surface	Seat Surface	Stem ⁽³⁾	Packing Gasket
SX	Same as body	Integral	SS 316	Teflon
GX	Same as body	Integral	SS 316	Graphite
SY	Same as body	Stellite	SS 316	Teflon
GY	Same as body	Stellite	SS 316	Graphite
AA	Special	Special	Special	Special

3) Stem material is SS 316 or other material equivalent to body at manufacturers option.