

# Cast stainless steel valves gate, globe, and check

**Corrosion resistant**



**ASME CLASSES 150 – 600  
NPS ½ – 24 (DN 15 – 600)  
API 603/ASME B16.34**

**VELAN**

# VELAN'S PROFILE

## VELAN AT A GLANCE

### History

- Founded in 1950

### People

- Over 2,000 employees

### Product line

A world-leading range of valves across all major industrial applications:

- Cast steel gate, globe, check, and ball valves
- Forged steel gate, globe, check, and ball valves
- Triple-offset butterfly valves
- Knife gate valves
- Severe service valves
- Bellows seal valves
- Steam traps

### Primary industries served

- Fossil, nuclear, and cogeneration power
- Oil and gas
- Refining and petrochemicals
- Chemicals and pharmaceutical
- LNG and cryogenics
- Marine
- HVAC
- Mining
- Water and wastewater
- Pulp and paper
- Subsea

### Velan holds major applicable approvals:

- ASME Section III N and NPT for nuclear valves (since 1970)
- ISO 9001 (since 1991) and ISO 14001
- OHSAS 18001
- PED
- SIL
- GOST
- API 6A and API 6D
- TA-Luft
- Comprehensive quality programs that are compliant with the most stringent industry standards such as ISO 9001, API Q1, NCA 4000, ASME NQA-1 and 10 CFR 50 Appendix B.
- Velan has been surveyed and audited by leading organizations around the world such as Bureau Veritas, API, ASME, NUPIC, Newport News Shipbuilding, and DCMA.
- Total Process Improvement Program, including Lean Manufacturing and Six Sigma



Velan is one of the world's leading manufacturers of cast and forged steel gate, globe, check, ball, triple-offset, knife gate, highly engineered severe service valves, and steam traps offering superior performance across all major industrial applications including: fossil, nuclear, and cogeneration power; oil and gas; refining and petrochemicals; chemicals and pharmaceutical; LNG and cryogenics; marine; HVAC; mining; water and wastewater; pulp and paper; and subsea. The company also supplies actuators and integrated control packages.

Founded in 1950, Velan has earned a reputation for product excellence and innovation by bringing to the market superior products with special emphasis on quality, safety, ease of operation, and long service life. Velan valves have an extremely broad installation base and are approved by major companies worldwide.

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# VELAN'S GLOBAL NETWORK

## Head office



Montreal, Canada  
Velan Inc.

- 14 production facilities
- 4 plants in North America
- 5 plants in Europe
- 5 plants in Asia
- 4 stocking and distribution centers
- Hundreds of distributors worldwide
- Over 60 service shops worldwide

## Manufacturing plants

### North America



Montreal, Canada  
Velan Inc., Plant 1



Montreal, Canada  
Velan Inc., Plant 2 and 7



Granby, Canada  
Velan Inc., Plant 4 and 6



Williston, VT, U.S.A.  
Velan Valve Corp., Plant 3



### Europe



Lyon, France  
Velan S.A.S.



Mennecy, France  
Segault S.A.



Lisbon, Portugal  
Velan Válvulas Industriais, Lda.



Lucca, Italy  
Velan ABV S.r.l., Plant 1



Lucca, Italy  
Velan ABV S.r.l., Plant 2

### Asia



Ansan City, South Korea  
Velan Ltd., Plant 1



Ansan City, South Korea  
Velan Ltd., Plant 2



Taichung, Taiwan  
Velan Valvac Mfg. Co., Ltd.



Suzhou, China  
Velan Valve (Suzhou) Co., Ltd.



Coimbatore, India  
Velan Valves India Pvt. Ltd.

## Distribution centers



Granby, Canada  
VelCAN



Benicia, CA, U.S.A.  
VelCAL



Missouri City, TX, U.S.A.  
VelTEX



Willich, Germany  
Velan GmbH

 – ASME N-stamp accredited manufacturer

# VELAN CAST STAINLESS STEEL API 603 GATE VALVES

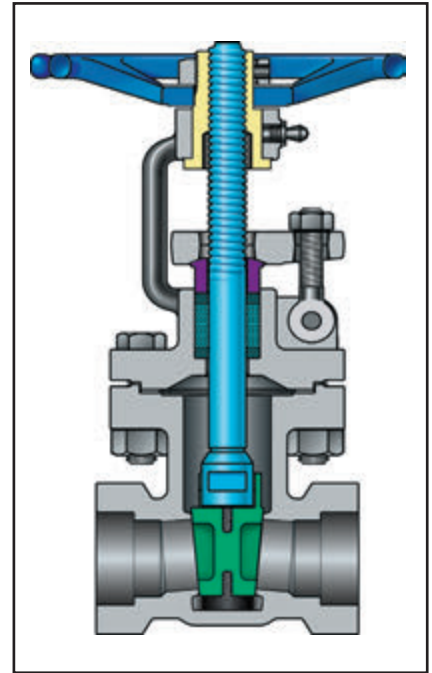
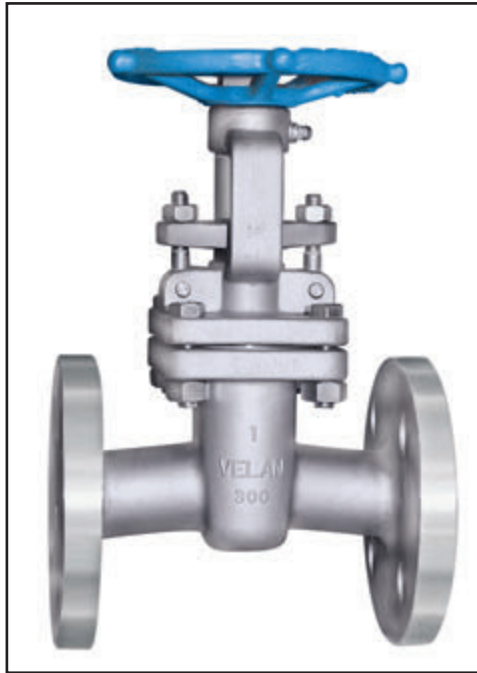
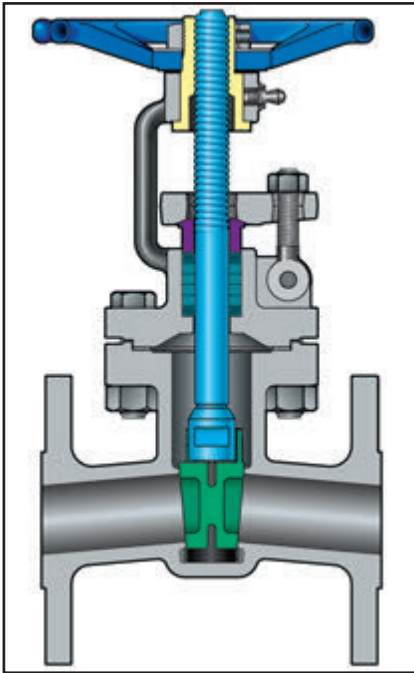
**INTEGRAL SEAT, FLANGED, WALL THICKNESS TO ASME B16.34**

ASME CLASSES 150, 300, NPS ½–1½ (DN 15–40)

**FULL PORT, THREADED, SOCKET WELD OR COMBINATION**

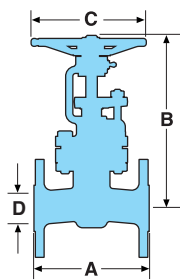
**WALL THICKNESS TO ASME B16.34**

ASME CLASS 600, NPS ½–1½ (DN 15–40)



**Precision high quality investment castings**

**Gate valves with unique flexible wedge**



**Flanged**

ASME CLASS	FIGURE NUMBER
150	0064C–13SX or GX
300	1064C–13SX or GX

B = Center-to-top, open

**Threaded/socket weld**

ASME CLASS	FIGURE NUMBER
600	2064C–14SX or GX

## STANDARD MATERIALS

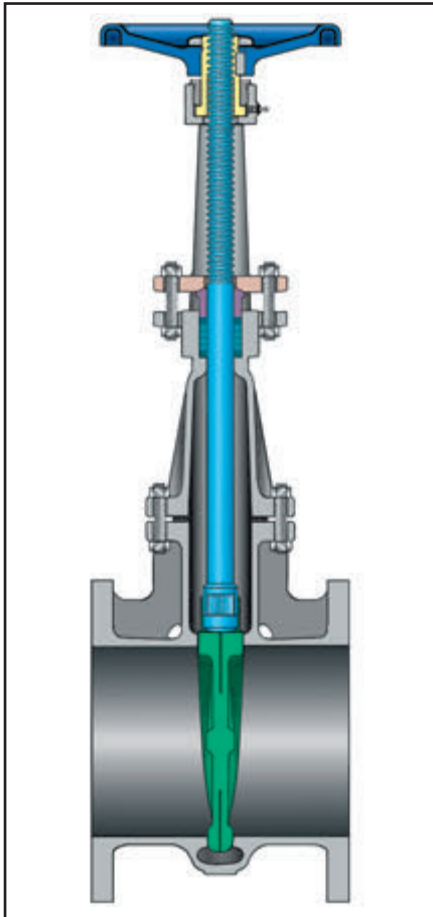
PART	MATERIAL	
Body	A351 Gr. CF8M	
Bonnet	A351 Gr. CF8M	
Wedge	A351 Gr. CF8M	
Stem	Gr. 316	
Gland	Gr. 316	
Gland flange	A351 Gr. CF8M	
Handwheel	Malleable iron (painted)	
Handwheel nut	Stainless steel	
Body/bonnet cap screw	Gr. B8M	
Body/bonnet nut	Gr. 8M	
Gland stud	Gr. 304	
Gland nut	Gr. 8M	
Gland packing	SX	PTFE
	GX	Graphite
Gasket	SX	PTFE with stainless
	GX	Graphite with stainless
Name plate	Stainless steel	
Stem nut	Gr. 416	

## DIMENSIONS AND WEIGHTS

SIZE NPS DN	FLANGED, ASME 150					FLANGED, ASME 300					THREADED - SOCKET WELD, ASME 600				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
½ 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
¾ 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	8.67 303	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
1½ 40	6.50 165	11.91 220	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

# VELAN CAST STAINLESS STEEL API 603 GATE VALVES

**INTEGRAL SEAT, FLANGED, WALL THICKNESS TO ASME B16.34**  
**ASME CLASSES 150, 300, NPS 2–24 (DN 50–600)**



*Gate valves with unique flexible wedge*

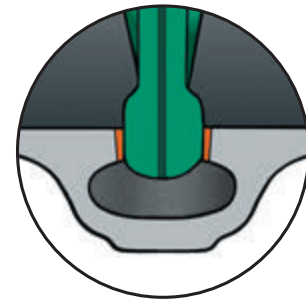
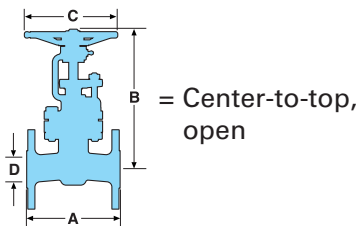
## STANDARD MATERIALS

PART	MATERIAL
Body	A351 Gr. CF8M
Bonnet	A351 Gr. CF8M
Wedge	A351 Gr. CF8M
Stem	Gr. 316
Gland	Gr. 316
Gland flange	A351 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 PTFE
	GX or GY Graphite
Gasket	SX or SY PTFE with stainless wire mesh
	GX or GY Graphite with stainless steel foil
Name plate	Stainless steel
Stem nut	Ni-resist type D-2C

*Precision high quality investment castings*

## DIMENSIONS AND WEIGHTS

SIZE NPS DN	FLANGED, ASME 150					FLANGED, ASME 300				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
2	7.00	13.89	8.00	2.00	32	8.50	14.66	8.00	2.00	46
50	178	353	203	51	14.5	216	372	203	51	21.9
2½	7.50	16.53	8.00	2.50	48	9.50	16.22	8.00	2.50	60
65	191	420	203	64	21.8	241	412	203	64	27.2
3	8.00	18.50	8.00	3.00	52	11.12	18.70	10.00	3.00	86
80	203	470	203	76	23.6	282.45	475	254	76	39.0
4	9.00	21.76	10.00	4.00	80	12.00	23.18	10.00	4.00	134
100	229	553	254	102	36.4	305	589	254	102	60.8
6	10.50	29.06	10.00	6.00	135	15.87	29.52	18.00	6.00	247
150	267	738	254	152	61.2	403	750	457	152	112.07
8	11.50	36.88	14.00	8.00	222	16.50	38.81	18.00	8.00	401
200	292	937	356	203	100.9	419	986	457	203	181.9
10	13.00	45.00	18.00	10.00	324	18.00	47.08	20.00	10.00	630
250	330	1143	457	254	147.3	457	1196	508	254	285.8
12	14.00	53.00	18.00	12.00	472	19.75	55.15	20.00	12.00	880
300	356	1346	457	305	214.1	502	1401	508	305	400.0
14	15.00	61.31	24.00	13.25	800					
350	381	1557	610	337	362.9					
16	16.00	69.25	24.00	15.25	1000					
400	406	1759	610	387	453.6					
18	17.00	73.96	24.00	17.25	1300					
450	432	1879	610	438	589.6					
20	18.00	83.81	30.00	19.25	1500					
500	457	2129	762	489	680.3					
24	—	—	—	—	—					
600	—	—	—	—	—					



**Optional integral CoCr alloy seat face available for longer service life.**

## Stainless seat

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

## CoCr alloy seat

ASME CLASS	FIGURE NUMBER
150	0064C-13SY or GY
300	1064C-13SY or GY

# VELAN CAST STAINLESS STEEL GLOBE VALVES

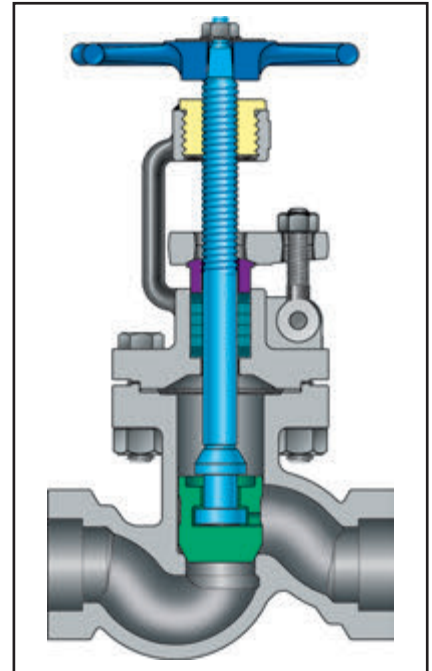
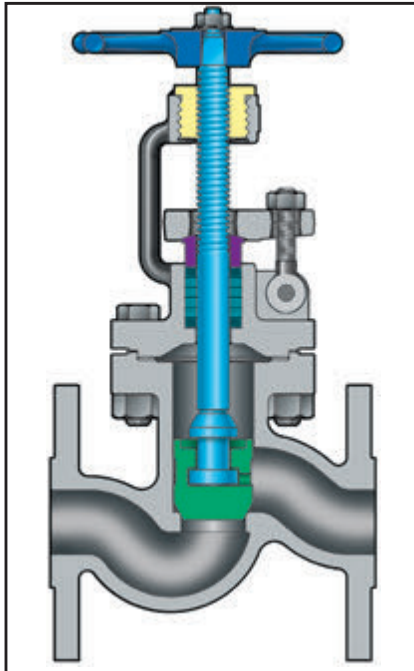
**INTEGRAL SEAT, FLANGED, WALL THICKNESS TO ASME B16.34**

ASME CLASSES 150, 300, NPS ½–1½ (DN 15–40)

**FULL PORT, THREADED, SOCKET WELD OR COMBINATION**

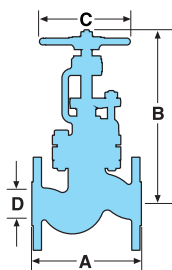
**WALL THICKNESS TO ASME B16.34**

ASME CLASS 600, NPS ½–1½ (DN 15–40)



**Precision high quality investment castings**

**Globe valves with fully guided disc**



**Flanged**

ASME CLASS	FIGURE NUMBER
150	0074C–13SX or GX
300	1074C–13SX or GX

B = Center-to-top, open

**Threaded/socket weld**

ASME CLASS	FIGURE NUMBER
600	2074C–14SX or GX

## STANDARD MATERIALS

PART	MATERIAL
Body	A351 Gr. CF8M
Bonnet	A351 Gr. CF8M
Disc	A351 Gr. CF8M
Stem	Gr. 316
Gland	Gr. 316
Gland flange	A351 Gr. CF8M
Yoke bushing	Gr. 416
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 PTFE
	GX Graphite
Gasket	SX PTFE with stainless
	GX Graphite with stainless
Name plate	Stainless steel
Stem nut	Gr. 416

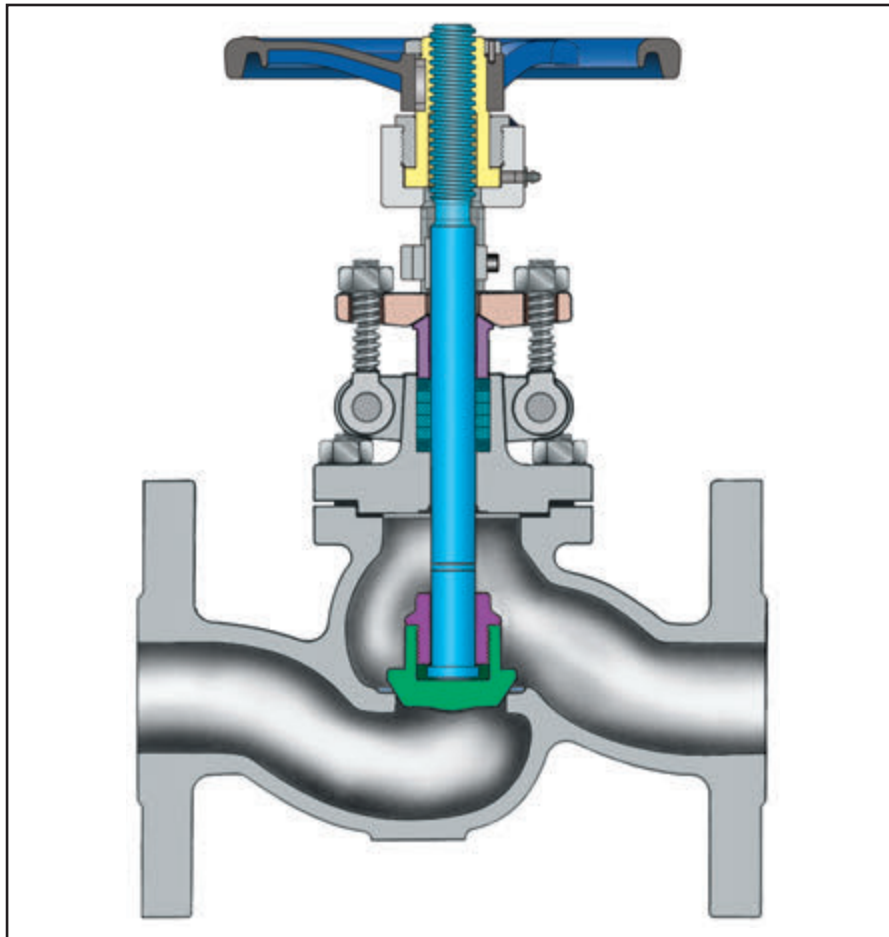
## DIMENSIONS AND WEIGHTS

SIZE NPS DN	FLANGED, ASME 150					FLANGED, ASME 300					THREADED - SOCKET WELD, ASME 600				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
½ 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
¾ 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 25.4	12 5.4	5.00 127	9.08 230	4.00 102	1.00 25.4	8 3.6
1½ 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 38.1	29 13.2	6.00 152	11.28 286	8.00 203	1.50 38.1	18 8.2

# VELAN CAST STAINLESS STEEL GLOBE VALVES

INTEGRAL SEAT, FLANGED, WALL THICKNESS TO ASME B16.34

ASME CLASSES 150, 300, NPS 2-6 (DN 50-150)

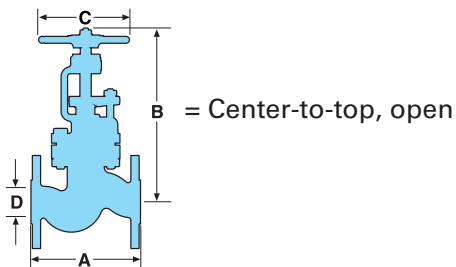


*The only globe valve with a non-rotating stem*

## STANDARD MATERIALS

PART	MATERIAL
Body	A351 Gr. CF8M
Bonnet	A351 Gr. CF8M
Disc	A351 Gr. CF8M
Stem	Gr. 316
Disc nut	A351 Gr. CF8M
Gland pin	Gr. 316
Gland	Gr. 316
Gland flange	A351 Gr. CF8M
Yoke bushing	Austenitic ductile iron Gr. D-2C
Torque arm	CF8M
Handwheel	Malleable iron (painted)
Handwheel nut	Carbon steel
Bonnet stud	Gr. B8M
Bonnet nut	Gr. 8M
Gland stud	Gr. 304
Gland nut	Gr. 8M
Gland packing	SX or SY PTFE
	GX or GY Graphite
Gasket	SX or SY PTFE
	GX or GY Graphite
Name plate	Stainless steel

*Precision high quality investment castings*

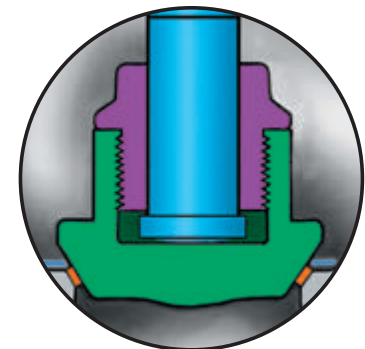


### Stainless seat

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

### CoCr alloy seat

ASME CLASS	FIGURE NUMBER
150	0074C-13SY or GY
300	1074C-13SY or GY



**Optional integral CoCr alloy seat face available for longer service life.**

## DIMENSIONS AND WEIGHTS

SIZE NPS DN	FLANGED, ASME 150					FLANGED, ASME 300				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
2	8.00	10.25	8.00	2.00	27	10.50	11.27	8.00	2.00	45
50	203	260	203	51	12.3	267	286	203	51	20.4
2½	8.50	10.44	10.00	2.50	37	11.50	12.31	10.00	2.50	70
65	216	265	254	64	16.8	292	313	254	64	31.8
3	9.50	12.62	10.00	3.00	53	12.50	13.85	10.00	3.00	87
80	241	321	254	76	24.0	318	352	254	76	39.5
4	11.50	14.92	10.00	4.00	83	14.00	16.29	10.00	4.00	130
100	292	379	254	102	37.6	356	414	254	102	59.0
6	16.00	17.48	10.00	6.00	154	17.50	21.62	14.00	6.00	252
150	406	457	254	152	69.9	445	549	356	152	114.3

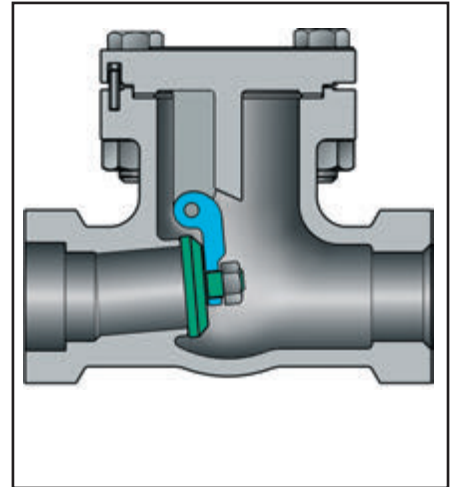
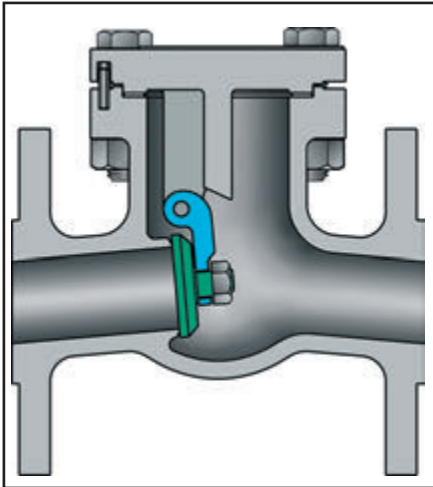
# VELAN CAST STAINLESS STEEL SWING CHECK VALVES

**INTEGRAL SEAT, FLANGED, WALL THICKNESS TO ASME B16.34**

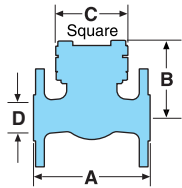
ASME CLASSES 150, 300, NPS ½–1½ (DN 15–40)

**FULL PORT, THREADED, SOCKET WELD OR COMBINATION  
WALL THICKNESS TO ASME B16.34**

ASME CLASS 600, NPS ½–1½ (DN 15–40)



**Precision high quality  
investment castings**



### FLANGED

ASME CLASS	FIGURE NUMBER
150	0114C-13SX or GX
300	1114C-13SX or GX

### THREADED/SOCKET WELD

ASME CLASS	FIGURE NUMBER
600	2114C-14SX or GX

### STANDARD MATERIALS

PART		MATERIAL
Body		A351 Gr. CF8M
Cover		A351 Gr. CF8M
Disc		A351 Gr. CF8M
Hinge		A351 Gr. CF8M
Pin		Gr. 316
Disc nut		Gr. 8M
Cap screw		Gr. B8M
Cover nut		Gr. 8M
Gasket	SX	PTFE with stainless
	GX	Graphite with stainless
Name plate		Stainless steel

### DIMENSIONS AND WEIGHTS

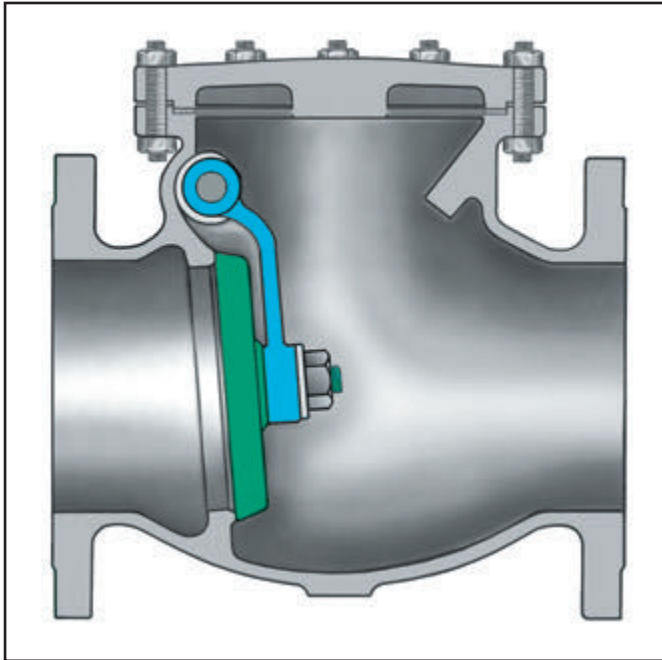
SIZE NPS DN	FLANGED, ASME 150					FLANGED, ASME 300					THREADED - SOCKET WELD, ASME 600				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
½ 15	4.25 108	3.08 78	2.87 73	0.62 15.7	5 2.3	6.00 152	3.16 80	2.87 73	0.62 15.7	7 3.2	3.75 95	3.03 77	3.03 77	0.62 15.7	4 1.8
¾ 20	4.62 117	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	3.01 76	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	3.26 83	1.00 25.4	7 3.2
1½ 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	4.48 114	1.50 38.1	12 15.4



# VELAN CAST STAINLESS STEEL SWING CHECK VALVES

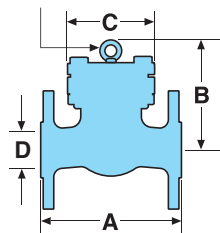
INTEGRAL SEAT, FLANGED, WALL THICKNESS TO B16.34

ASME CLASSES 150, 300, NPS 2–12 (DN 50–300)



**Precision high quality investment castings**

NPS 6-12  
(DN 150-300)



**Stainless seat**

ASME CLASS	FIGURE NUMBER
150	0114C-13SX or GX
300	1114C-13SX or GX

**CoCr alloy seat**

ASME CLASS	FIGURE NUMBER
150	0114C-13SY or GY
300	1114C-13SY or GY

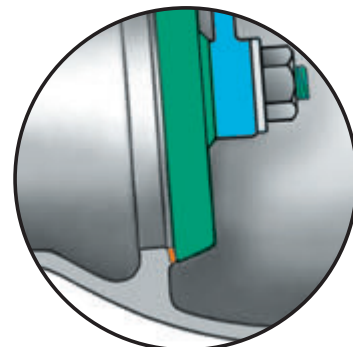
## STANDARD MATERIALS

PART	MATERIAL	
Body	A351 Gr. CF8M	
Cover	A351 Gr. CF8M	
Disc	A351 Gr. CF8M	
Hinge	A351 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	PTFE with stainless wire mesh
	GX or GY	Graphite with stainless foil
Name plate	Stainless steel	

## DIMENSIONS AND WEIGHTS

SIZE NPS DN	FLANGED, ASME 150					FLANGED, ASME 300				
	A	B	C	D	WEIGHT lb (kg)	A	B	C	D	WEIGHT lb (kg)
2	8.00	4.00	4.00 <sup>(1)</sup>	2.00	21	10.50	5.61	4.50 <sup>(1)</sup>	2.00	42
50	203	102	102	51	9.5	267	143	116	51	19.1
2½	8.50	5.50	5.50	2.50	30	11.50	5.76	6.50	2.50	55
65	216	140	140	64	13.6	292	146	165	64	24.9
3	9.50	5.88	6.75	3.00	43	12.50	7.00	8.06	3.00	80
80	241	150	172	76	19.5	318	178	205	76	36.4
4	11.50	6.69	8.00	4.00	68	14.00	7.81	9.00	4.00	118
100	292	170	203	102	30.9	356	199	229	102	53.6
6	14.00	10.35	10.00	6.00	128	17.50	11.41	11.19	6.00	212
150	356	203	254	152	58.2	445	290	284	152	96.4
8	19.50	12.19	13.25	8.00	226	21.00	13.70	13.25	8.00	330
200	495	310	337	203	102.7	533	348	337	203	150.0
10	24.50	14.38	16.00	10.00	317	24.50	15.93	17.12	10.00	528
250	622	366	406	254	143.8	622	405	435	254	240.0
12	27.50	16.13	19.00	12.00	530	28.00	18.40	20.34	12.00	802
300	699	410	482	305	240.9	711	468	517	305	364

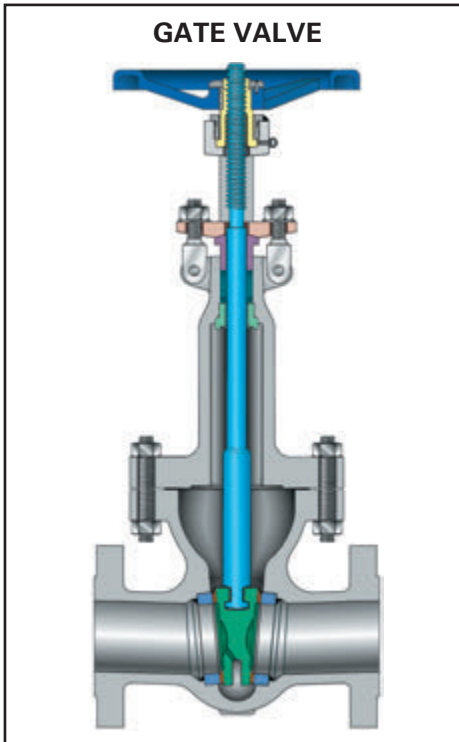
(1) Square



**Optional integral CoCr alloy seat face available for longer service life.**

# VELAN SPECIAL SERVICES

## CAST STEEL CRYOGENIC VALVES



### CAST AUSTENITIC STAINLESS STEEL CRYOGENIC GATE, GLOBE, AND CHECK VALVES, NPS ½–24 (DN 15–600)

ASME PRESSURE CLASSES 150, 300, AND 600

The production, transport, and storage of liquefied gases such as oxygen, nitrogen, argon, natural gas, hydrogen, or helium down to  $-425^{\circ}\text{F}$  ( $-254^{\circ}\text{C}$ ) presents several technical problems. Velan specially-adapted extended bonnet cast valves offer safe and efficient service.

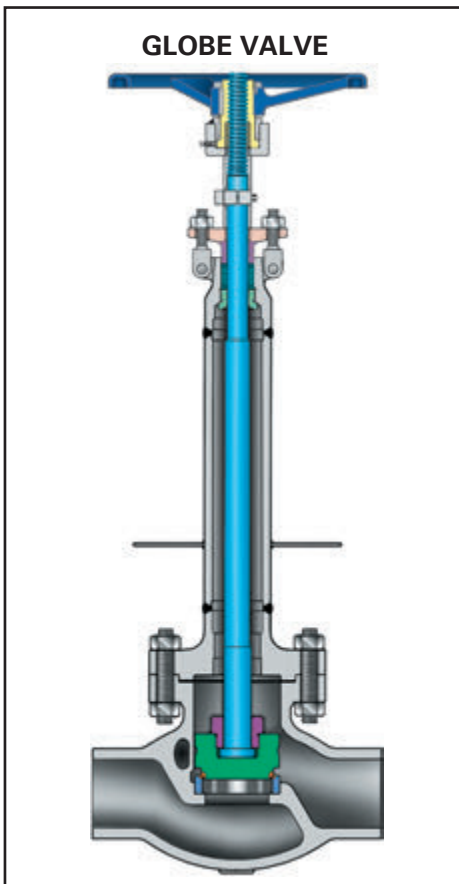
#### MATERIALS

- **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 A479 grade XM-19 with high toughness even at extreme low temperatures, excellent low friction, and galling-free movement at points of stem contact.
- **Wetted parts:** all Austenitic stainless steel and CoCr alloy.
- **Stem nut/yoke bushing:** Austenitic ductile iron Gr. D-2C.
- **Packing:** PTFE or graphite packing protected from freezing by a column of insulating gas.
- **Seating faces:** CoCr alloy is used to prevent seizing and galling. When extremely tight shutoff is required, globe and check valves are supplied with Neoflon, PTFE, or other soft inserts.
- **Bolting:** Strain-hardened Austenitic stainless steel.
- **Lubrication of stem nut:** Exxon Nebula Lubriplate No. 930-AA or 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 the stem packing at sufficient distance away from the cold fluid to remain functional.
- **Flexible wedges** with CoCr alloy seating faces for cryogenic service.
- **Neoflon inserts** are available for gate, globe, and API 594 swing check valves.
- **Cleaning:** All cryogenic valves are thoroughly degreased and cleaned and pipe ends are sealed to prevent contamination.

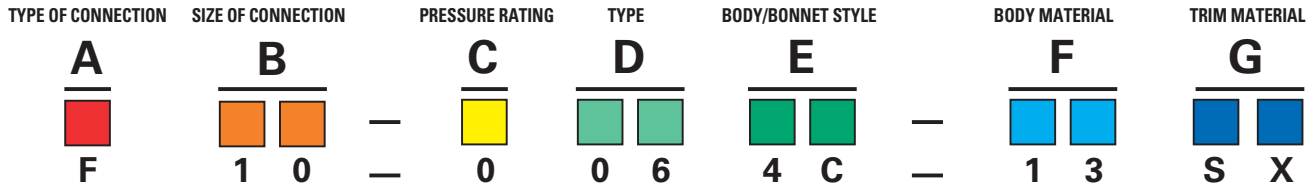
*NOTE: For more information, see our Cryogenic Valves catalog (VEL-CRYO) at [www.velan.com](http://www.velan.com).*



#### TABLE OF LIQUEFIED GASES

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

# HOW TO ORDER



**Example:** Flanged NPS 3 (DN 80) Class 150 cast carbon steel full port gate valve with SX trim.

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.

<b>A TYPE OF CONNECTION</b>	
<b>C</b> Combination (socket weld/threaded)	<b>U</b> Undrilled flanges
<b>F</b> Flanged B16.5 (B16.47 series A)	<b>W</b> Socket weld
<b>S</b> Threaded NPT	

<b>B SIZE OF CONNECTION</b>	
Customers have the choice of specifying valve size as part of the valve figure number ( <b>B</b> ) using the numbers below, or indicating valve size separately. Sizes shown in NPS (DN)	
<b>EXAMPLES:</b>	
B16-3054P-02TS (valve size is part of figure number)	
NPS 10 B-3054P-02TS (valve size is shown separately)	
<b>03</b> ½ (15)	<b>09</b> 2½ (65)
<b>04</b> ¾ (20)	<b>10</b> 3 (80)
<b>05</b> 1 (25)	<b>11</b> 3½ (90)
<b>07</b> 1½ (40)	<b>12</b> 4 (100)
<b>08</b> 2 (50)	<b>13</b> 5 (125)
<b>14</b> 6 (150)	<b>20</b> 16 (400)
<b>15</b> 8 (200)	<b>21</b> 18 (450)
<b>16</b> 10 (250)	<b>22</b> 20 (500)
<b>18</b> 12 (300)	<b>23</b> 22 (550)
<b>19</b> 14 (350)	<b>24</b> 24 (600)

<b>C PRESSURE RATING</b>	
<b>0</b> 150	<b>1</b> 300
<b>2</b> 600	

<b>D VALVE TYPE</b>	
<b>06</b> Full port gate	<b>08</b> Stop check
<b>07</b> Stop globe	<b>09</b> Needle
<b>11</b> Swing check	

<b>E BODY / BONNET STYLE</b>	
<b>4</b> Vertical	<b>C</b> Bolted bonnet (cast)
	<b>E</b> Extended bonnet (cryogenic) cast valve

<b>F BODY MATERIAL</b>		
<b>11</b> S/S F304, CF8	<b>14</b> S/S F316L, CF3M	<b>28</b> S/S F317, CG8M
<b>12</b> S/S F304L, CF3	<b>15</b> S/S F347, CF8C	
<b>13</b> S/S F316, CF8M <sup>(1)</sup>	<b>23</b> Alloy 20 (CN7M)	

<b>G TRIM MATERIAL</b>			
	Wedge/Disc surface <sup>(2)</sup>	Seat surface	Stem <sup>(2)</sup>
<b>SX</b> Same as body	Integral	Same as body	PTFE
<b>GX</b> Same as body	Integral	Same as body	Graphite
<b>SY</b> Same as body	CoCr alloy <sup>(3)</sup>	316	PTFE
<b>GY</b> Same as body	CoCr alloy <sup>(3)</sup>	316	Graphite

- (1) Not suitable for temperatures above 1000°F (538°C).  
 (2) Base material is either the same as the body or solid trim at manufacturer's option.  
 (3) CoCr alloy refers to cobalt-chrome alloys in Grade 6 (e.g. AWS CoCr-A, UNS 30006 & 30106) or Grade 21 (e.g. AWS CoCr-E, UNS 30021). Use of Grade 6 or 21 is at Velan's option.

## B16.34 PRESSURE-TEMPERATURE

### A351 Gr. CF8M<sup>(1)</sup>

#### WORKING PRESSURES BY CLASS

Temp. °F	psig			Temp. °C	bar		
	150	300	600		150	300	600
-20 to 100	275	720	1,440	-29 to 38	19	49.6	99.3
200	235	620	1,240	50	18.4	48.1	96.2
300	215	560	1,120	100	16.2	42.2	84.4
400	195	515	1,025	150	14.8	38.5	77
500	170	480	955	200	13.7	35.7	71.3
600	140	450	900	250	12.1	33.4	66.8
650	125	440	885	300	10.2	31.6	63.2
700	110	435	870	325	9.3	30.9	61.8
750	95	425	855	350	8.4	30.3	60.7
800	80	420	845	375	7.4	29.9	59.8
850	65	420	835	400	6.5	29.4	58.9
900	50	415	830	425	5.5	29.1	58.3
950	35	385	775	450	4.6	28.8	57.7
1,000	20	365	725	475	3.7	28.7	57.3
1,050	20	360	720	500	2.8	28.2	56.5
1,100	20 <sup>(2)</sup>	305	610	538	1.4	25.2	50
1,150	20 <sup>(2)</sup>	235	475	550	1.4 <sup>(2)</sup>	25	49.8
1,200	20 <sup>(2)</sup>	185	370	575	1.4 <sup>(2)</sup>	24	47.9
1,250	20 <sup>(2)</sup>	145	295	600	1.4 <sup>(2)</sup>	19.9	39.8
1,300	20 <sup>(2)</sup>	115	235	625	1.4 <sup>(2)</sup>	15.8	31.6
1,350	20 <sup>(2)</sup>	95	190	650	1.4 <sup>(2)</sup>	12.7	25.3
1,400	20 <sup>(2)</sup>	75	150	675	1.4 <sup>(2)</sup>	10.3	20.6
1,450	20 <sup>(2)</sup>	60	115	700	1.4 <sup>(2)</sup>	8.4	16.8
1,500	15 <sup>(2)</sup>	40	85	725	1.4 <sup>(2)</sup>	7	14
				750	1.4 <sup>(2)</sup>	5.9	11.7
				775	1.4 <sup>(2)</sup>	4.6	9
				800	1.2 <sup>(2)</sup>	3.5	7
				816	1.0 <sup>(2)</sup>	2.8	5.9

(1) At temperatures over 538°C, use only when the carbon content is 0.04% or higher.

(2) Flanged-end valve ratings terminate at 1,000°F (538°C).

## FLOW COEFFICIENTS CV

Size	Class 150			Class 300			Class 600				
	NPS	DN	Gate	Globe	Check	Gate	Globe	Check	Gate	Globe	Check
½	15	13	3	3	14	13	3	14	13	3	14
¾	20	22	4	4	16	22	4	16	22	4	16
1	25	34	7	7	18	34	7	18	34	7	18
1½	40	110	11	11	40	110	11	40	110	11	40
2	50	260	35	35	95	260	35	95	—	—	—
2½	65	420	60	60	150	420	60	150	—	—	—
3	80	625	92	92	220	625	92	220	—	—	—
4	100	1,150	180	180	410	1,150	180	410	—	—	—
6	150	2,650	430	430	950	2,650	430	950	—	—	—
8	200	4,850	—	—	1,750	4,850	—	1,750	—	—	—
10	250	7,750	—	—	2,800	7,750	—	2,800	—	—	—
12	300	11,500	—	—	4,100	11,500	—	4,100	—	—	—
14	350	14,000	—	—	—	—	—	—	—	—	—
16	400	19,000	—	—	—	—	—	—	—	—	—
18	450	24,000	—	—	—	—	—	—	—	—	—
20	500	31,000	—	—	—	—	—	—	—	—	—
24	600	45,000	—	—	—	—	—	—	—	—	—

$$K_v = C_v \times 0.85$$

Class	150	300	600	900	1500
<b>PN</b>	20	50	110	150	260

PN and Class designations are not exact equivalents and are provided for comparison purposes only, based on API 600/ISO 10434 2006 edition.

**Note:** CoCr alloy as used throughout this catalog refers to cobalt chrome hardfacing alloys as supplied by Kennametal Stellite™, and other approved manufacturers.

*The most comprehensive line of industrial forged and cast steel gate, globe, check, ball, butterfly, and knife gate valves and steam traps.*

**ASME pressure classes 150–4500 in carbon, alloy, and stainless steel**



**BRO-FLB**



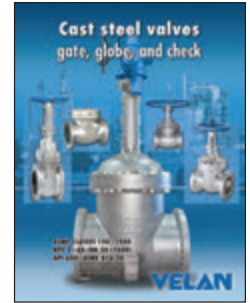
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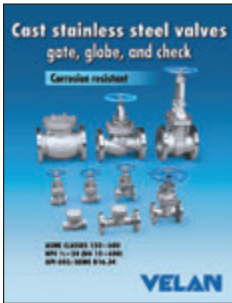
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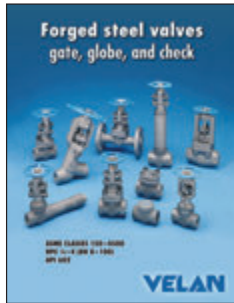
**VEL-PS**



**CAT-CSV**



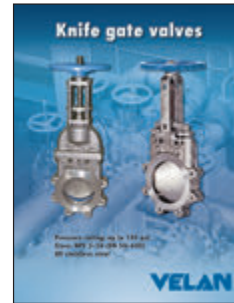
**CAT-CSSV**



**CAT-SFV**



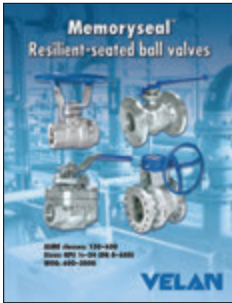
**CAT-BG**



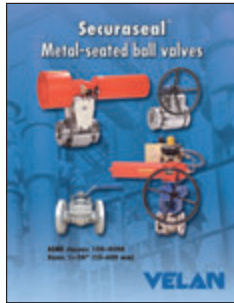
**CAT-KGV**



**CAT-DPCV**



**CAT-BV**



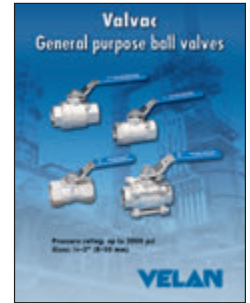
**VEL-MS**



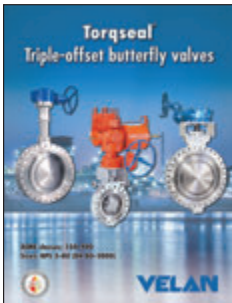
**CAT-PBV**



**BRO-CBV**



**CAT-GPBV**



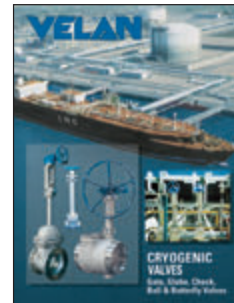
**CAT-BF**



**SAS-CCV**



**VEL-BS**



**VEL-CRYO**



**CAT-ST**

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