

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

Sales

- Over \$500 million

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

Quality

All major certifications and approvals

- ASME N stamp and NPT for nuclear valves (since 1970)
- ISO 9001 (since 1991)
Currently certified to ISO 9001:2008
- PED
- GOST (TR and RTN)
- API 6A and API 6D
- TA-Luft
- Quality programs fully compliant with ISO-9001, NCA 4000, ASME NQA-1 and 10 CFR 50 Appendix B, surveyed by ASME and audited by NUPIC, Northrop Grumman Newport News, DCMA, utilities, architect/ engineers, and other organizations from around the world

Headquartered in Montreal, Velan has several international subsidiaries.

For general inquiries:

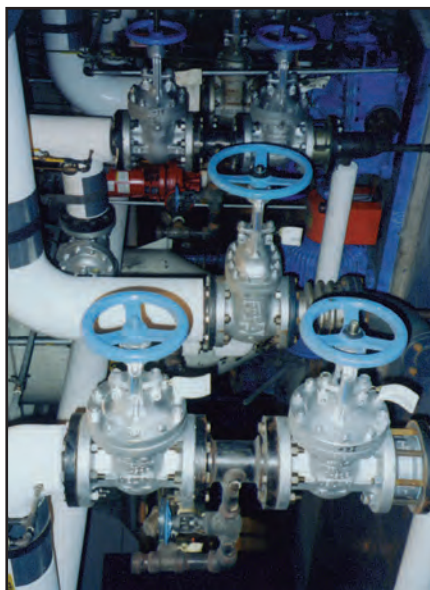
Velan head office:
7007 Côte de Liesse,
Montreal, QC H4T 1G2 Canada

Tel: +1 514 748 7743

Fax: +1 514 748 8635

Check our website for more specific contact information.

www.velan.com



Velan is one of the world's leading manufacturers of industrial steel valves, supplying gate, globe, check, ball, triple-offset butterfly, knife gate, control, and highly engineered severe service valves for critical applications in the chemical, petrochemical, oil and gas, fossil and nuclear power, cogeneration, pulp and paper, mining, marine and cryogenic industries. 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.

Velan concentrates on one business—the design, manufacture and marketing of steel valves in a broad range of types and sizes for high performance service in a wide range of applications. The company's talented people are focused on Velan's core values of quality, reliability, innovation, and integrity and mission to be the world's leading valve brand.

© 2014 Velan Inc., Montreal, QC, Canada. All rights reserved. The contents hereof are confidential and proprietary to Velan. Any unauthorized reproduction or disclosure, in whole or in part, is strictly prohibited. Velan reserves the right to change this information without notice. Velan does not accept any liability or damages arising from the use of information in this catalog. Velan Valves, Velan, Memoryseal, Securaseal, Torqseal, Velflex, Adaxie, and RAMA are trademarks or registered trademarks of Velan Inc. and/or another Velan company. Stellite® is a registered trademark of Kennametal Stellite™, a wholly owned subsidiary of Kennametal Inc. All other trademarks and registered trademarks are owned by their respective companies.

TABLE OF CONTENTS

Manufacturing Plants	3
Cast stainless steel API 603 gate valves, NPS ½–1½ (DN 15 – 40)	4
Cast stainless steel API 603 gate valves, NPS 2–24 (DN 50 – 600)	5
Cast stainless steel globe valves, NPS ½–1½ (DN 15 – 40)	6
Cast stainless steel globe valves, NPS 2–6 (DN 50 – 150)	7
Cast stainless steel swing check valves, NPS ½–1½ (DN 15 – 40)	8
Cast stainless steel swing check valves, NPS 2–12 (DN 50 – 300)	9
Velan special services cast stainless steel cryogenic gate, globe, and check valves, NPS ½–24 (DN 15 – 600)	10
How to order cast stainless steel gate, globe, and check valves	11
B16.34 pressure/temperature table....	11
Flow coefficient Cv table.....	11

VELAN'S GLOBAL NETWORK

Head office



Montreal, Canada
Velan Inc.

- 17 production facilities
- 5 plants in North America
- 6 plants in Europe
- 6 plants in Asia
- 5 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



Montreal, Canada
Velan Inc., Plant 5



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



Europe



Lyon, France
Velan S.A.S.



Mennecey, France
Segault S.A.



Leicester, UK
Velan Valves Ltd.



Lisbon, Portugal
Velan Válvulas Industriais, Lda.



Lucca, Italy
Velan ABV S.p.A., Plant 1



Lucca, Italy
Velan ABV S.p.A., Plant 2

Asia



Ansan City, South Korea
Velan Ltd., Plant 1



Ansan City, South Korea
Velan Ltd., Plant 2



Ansan City, South Korea
Velan Ltd., Plant 3



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



Marietta, GA, U.S.A.
VelEAST



Houston, TX, U.S.A.
VelTEX



Willich, Germany
Velan GmbH

– ASME N-stamp accredited manufacturer

VELAN CAST STAINLESS STEEL API 603 GATE VALVES

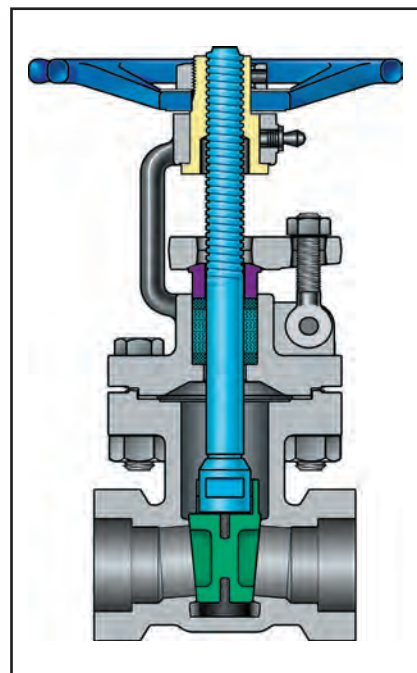
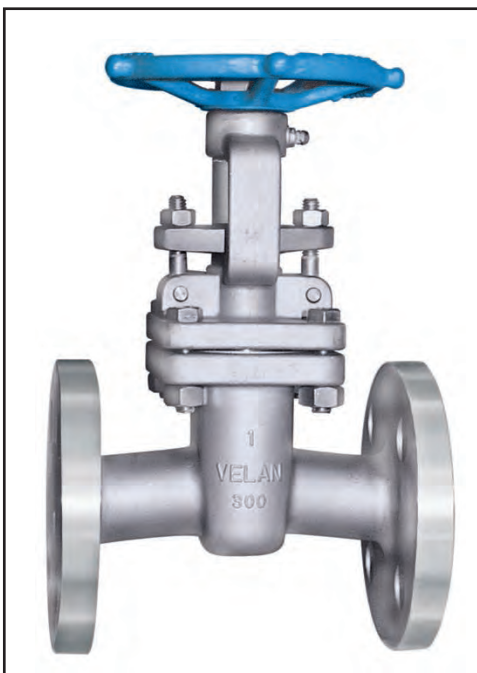
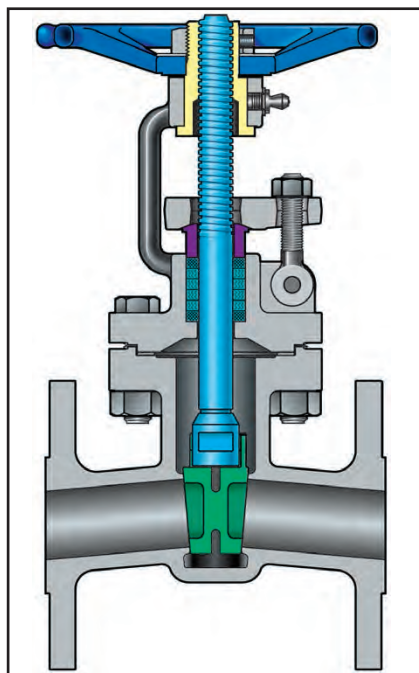
INTEGRAL SEAT, FLANGED, WALL THICKNESS TO ASME B16.34

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

FULL PORT, THREADED, SOCKET WELD OR COMBINATION

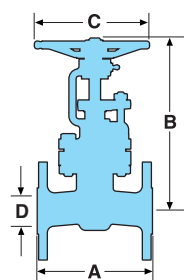
WALL THICKNESS TO ASME B16.34

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

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

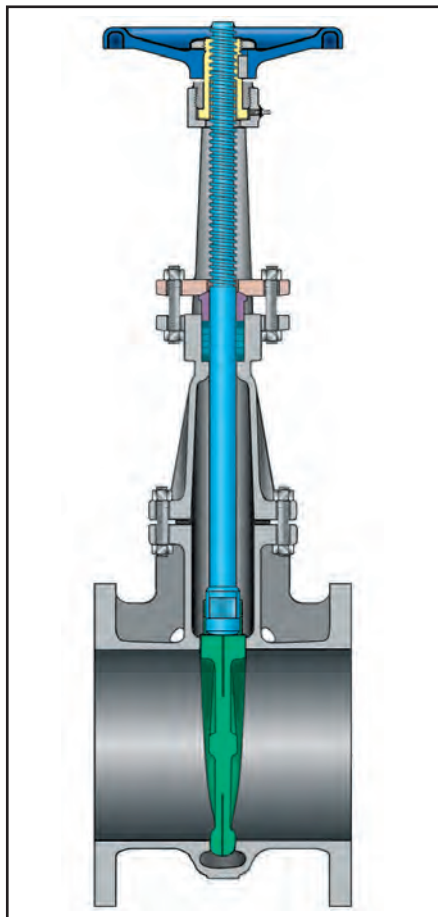
DIMENSIONS AND WEIGHTS

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

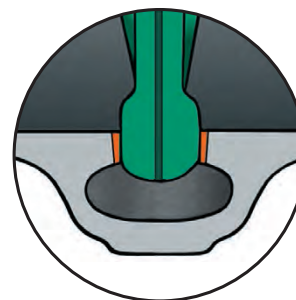
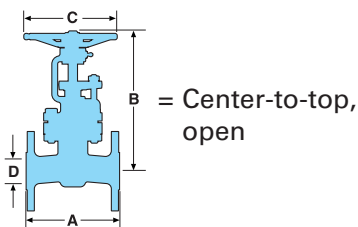
STANDARD MATERIALS

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

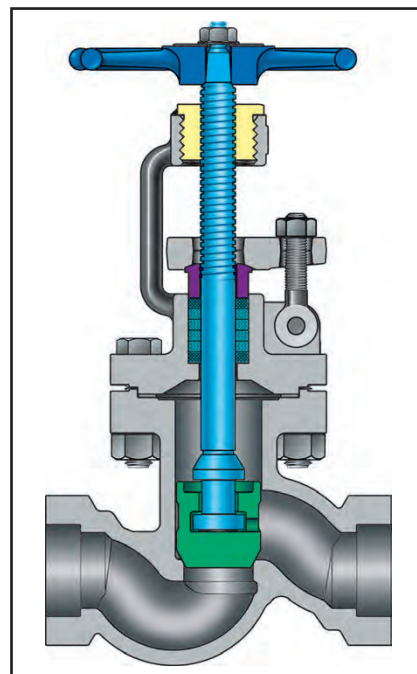
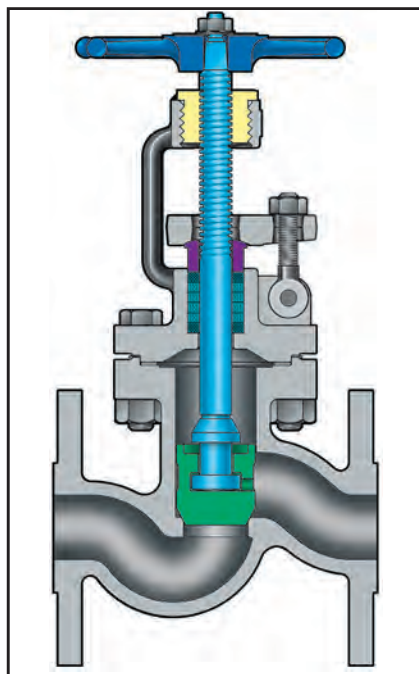
VELAN CAST STAINLESS STEEL GLOBE VALVES

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**

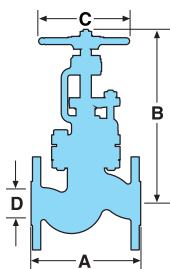
Globe valves with fully guided disc

Flanged

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

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

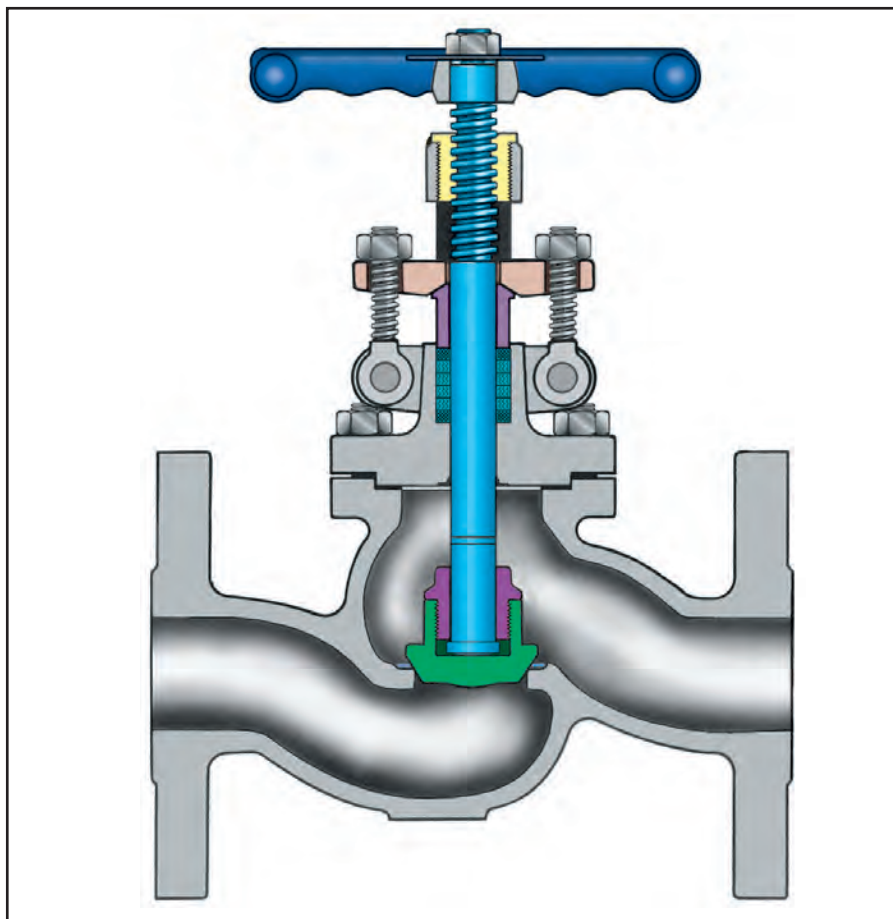
DIMENSIONS AND WEIGHTS

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

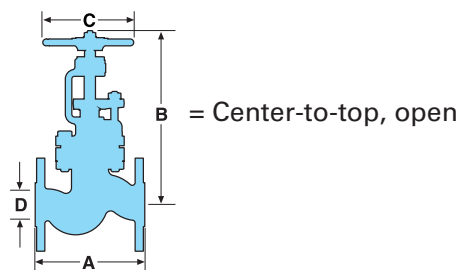
ASME CLASSES 150, 300, NPS 2–6 (DN 50–150)



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
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

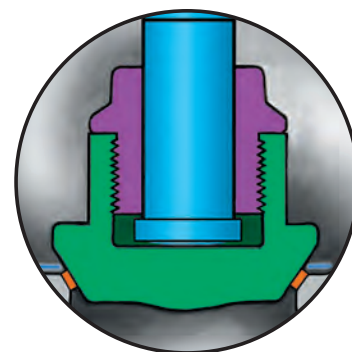


Stainless seat

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

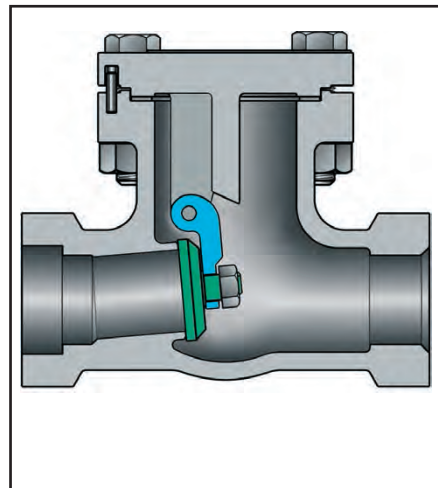
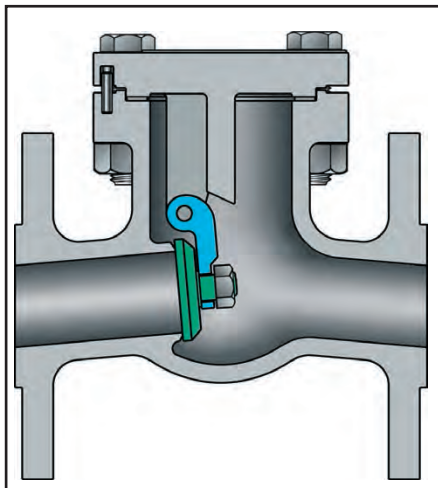
VELAN CAST STAINLESS STEEL SWING CHECK VALVES

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

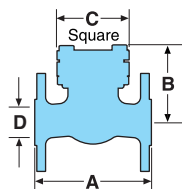
ASME CLASSES 150, 300, NPS ½–1½ (DN 15–40)

**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

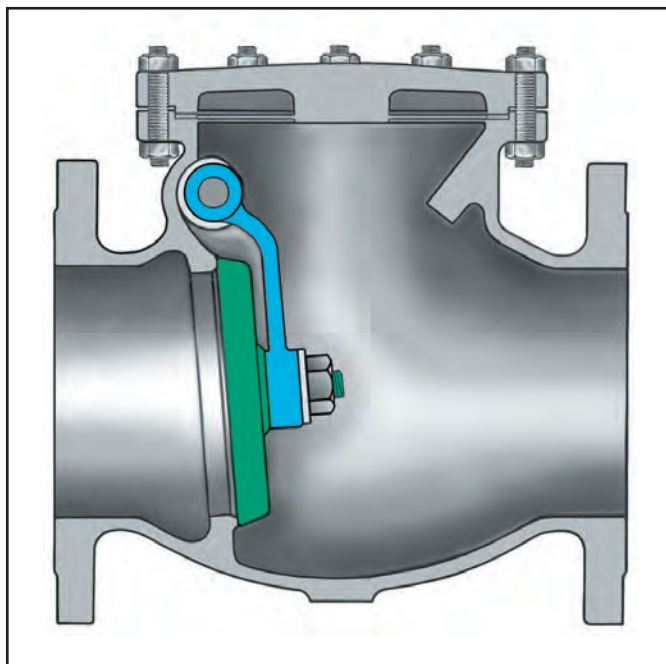
DIMENSIONS AND WEIGHTS

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

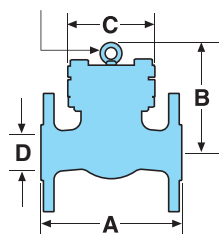
INTEGRAL SEAT, FLANGED, WALL THICKNESS TO B16.34

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

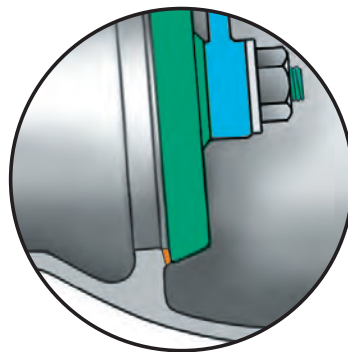
DIMENSIONS AND WEIGHTS

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 ⁽¹⁾	2.00	21	10.50	5.61	4.50 ⁽¹⁾	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

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

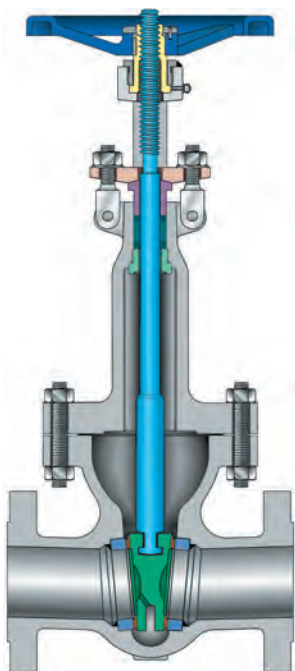


Optional integral CoCr alloy seat face available for longer service life.

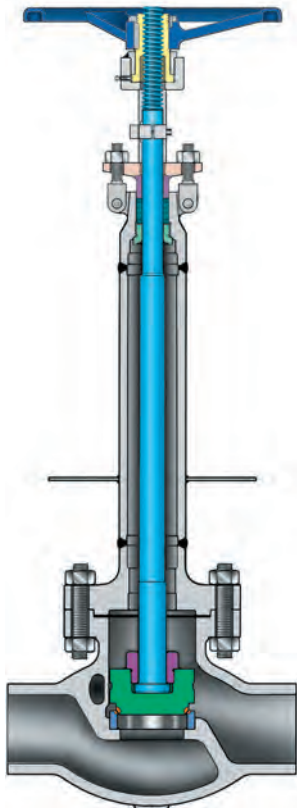
VELAN SPECIAL SERVICES

CAST STEEL CRYOGENIC VALVES

GATE VALVE



GLOBE VALVE



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°F (-254°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.

TABLE OF LIQUEFIED GASES

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

HOW TO ORDER

TYPE OF CONNECTION	SIZE OF CONNECTION	PRESSURE RATING	TYPE	BODY/BONNET STYLE	BODY MATERIAL	TRIM MATERIAL
A	B	C	D	E	F	G
	 		 	 	 	 
F	1 0	0	0 6	4 C	1 3	S X

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.

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

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

C	PRESSURE RATING
0	150
1	300
2	600

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

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

F	BODY MATERIAL
11	S/S F304, CF8
12	S/S F304L, CF3
13	S/S F316, CF8M ⁽¹⁾
14	S/S F316L, CF3M
15	S/S F347, CF8C
28	S/S F317, CG8M

G	TRIM MATERIAL			
	Wedge/Disc surface ⁽²⁾	Seat surface	Stem ⁽²⁾	Packing Gasket
SX	Same as body	Integral	Same as body	PTFE
GX	Same as body	Integral	Same as body	Graphite
SY	Same as body	CoCr alloy ⁽³⁾	316	PTFE
GY	Same as body	CoCr alloy ⁽³⁾	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⁽¹⁾

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 ⁽²⁾	305	610	538	1.4	25.2	50
1,150	20 ⁽²⁾	235	475	550	1.4 ⁽²⁾	25	49.8
1,200	20 ⁽²⁾	185	370	575	1.4 ⁽²⁾	24	47.9
1,250	20 ⁽²⁾	145	295	600	1.4 ⁽²⁾	19.9	39.8
1,300	20 ⁽²⁾	115	235	625	1.4 ⁽²⁾	15.8	31.6
1,350	20 ⁽²⁾	95	190	650	1.4 ⁽²⁾	12.7	25.3
1,400	20 ⁽²⁾	75	150	675	1.4 ⁽²⁾	10.3	20.6
1,450	20 ⁽²⁾	60	115	700	1.4 ⁽²⁾	8.4	16.8
1,500	15 ⁽²⁾	40	85	725	1.4 ⁽²⁾	7	14
				750	1.4 ⁽²⁾	5.9	11.7
				775	1.4 ⁽²⁾	4.6	9
				800	1.2 ⁽²⁾	3.5	7
				816	1.0 ⁽²⁾	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	14	13	3	14	13	3	14
¾	20	22	4	16	22	4	16	22	4	16
1	25	34	7	18	34	7	18	34	7	18
1½	40	110	11	40	110	11	40	110	11	40
2	50	260	35	95	260	35	95	—	—	—
2½	65	420	60	150	420	60	150	—	—	—
3	80	625	92	220	625	60	220	—	—	—
4	100	1,150	180	410	1,150	180	410	—	—	—
6	150	2,650	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	—	—	$K_v = C_v \times 0.85$					
24	600	45,000	—	—						

Class	150	300	600	900	1500
PN	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.

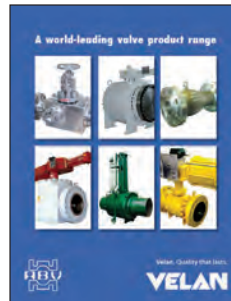
ASME pressure classes 150–4500 in carbon, alloy, and stainless steel



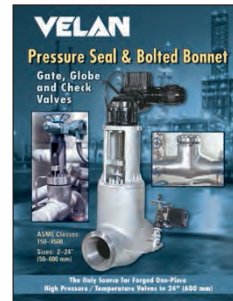
BRO-FLB



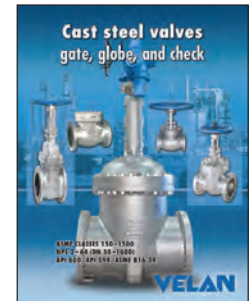
SAS-FLB



ABV-FLB



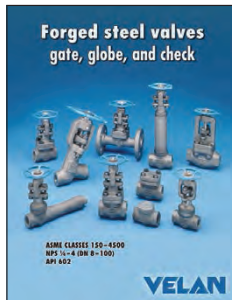
VEL-PS



CAT-CSV



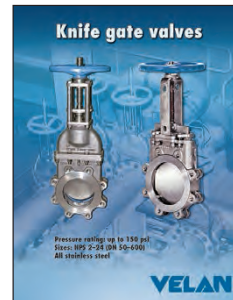
CAT-CSSV



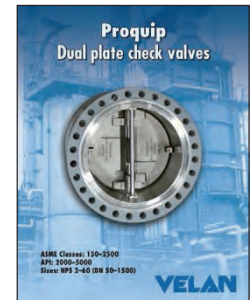
CAT-SFV



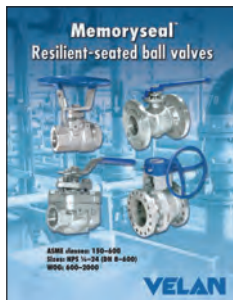
CAT-BG



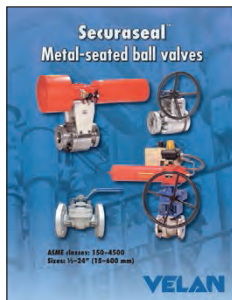
CAT-KGV



CAT-DPCV



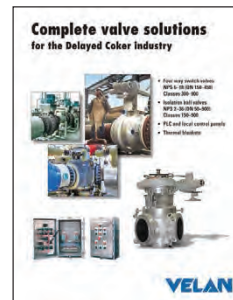
CAT-BV



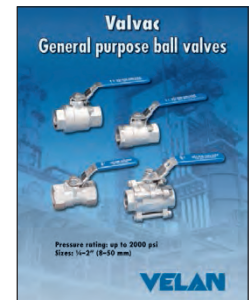
VEL-MS



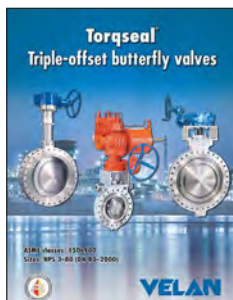
CAT-PBV



BRO-CBV



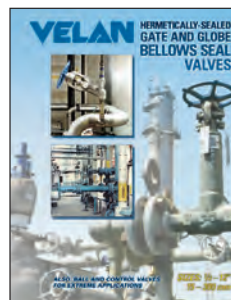
CAT-GPBV



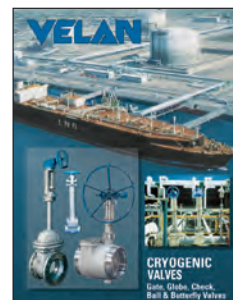
CAT-BF



SAS-CCV



VEL-BS



VEL-CRYO



CAT-ST

Headquartered in Montreal, Canada, Velan has several international subsidiaries. For general inquiries:

Velan head office

7007 Côte de Liesse, Montreal, QC H4T 1G2 Canada

Tel: +1 514 748 7743 Fax: +1 514 748 8635

Check our website for more specific contact information.

www.velan.com

CAT-CSSV-02-14

Printed in Canada

© 2014 Velan Inc., Montreal, QC, Canada. All rights reserved. The contents hereof are confidential and proprietary to Velan. Any unauthorized reproduction or disclosure, in whole or in part, is strictly prohibited. The material in this catalog is for general information only and shall not be used for specific performance data and material selection without first consulting Velan. Velan reserves the right to change this information without notice. Velan does not accept any liability or damages arising from the use of information in this catalog. Velan Valves, Velan, Memoryseal, Torqseal, Velflex, Adaxie, and RAMA are trademarks or registered trademarks of Velan Inc. and/or another Velan company. Stellite® is a registered trademark of Kennametal Stellite™, a wholly owned subsidiary of Kennametal Inc. All other trademarks and registered trademarks are owned by their respective companies.

VELAN