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Bi-Directional Knife Gate Valve SAV-B

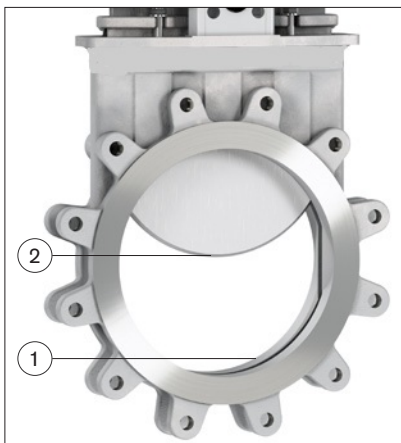


Bi-Directional Knife Gate Valve SAV-B

SAV-B knife gate valve is a high performance shut-off valve with superior flow characteristics, offering bi-directional zero leakage shut-off up to 150 psi/10 bar. It is suitable for media such as pulp, stock, chemicals, sludge, bio mass, manure, slurry and water. The fully lugged body design is suitable for dead-end services.

The SAV-B is an all stainless steel full lugged valve body, highly polished gate & gland. A smooth cycling & a tight shut-off independent of valve position is achieved by the high strength top works that provide an essential alignment for the gate. It utilizes stainless steel tie rod ends encapsulated inside the structural beams.

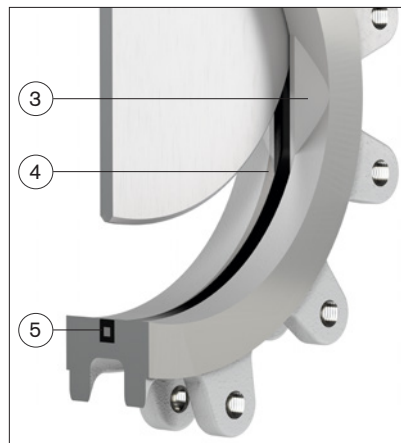
The SAV-B meets the requirements of MSS SP-81, and is designed, manufactured, inspected and tested according to pressure equipment directives.



Full bore with superior flow characteristics

The cavity free bore (1) prevent any build up of media during operation.

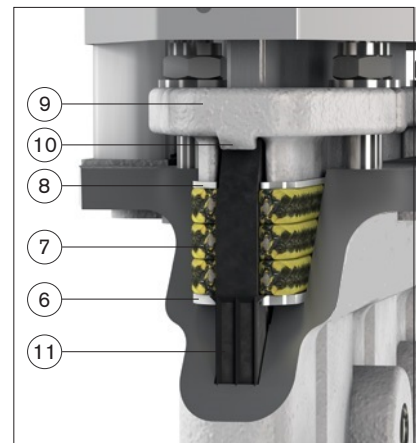
The highly polished gate (2) with the dual bevel edge and reduced gate profile make it easy for the gate to cut through the media. The design also prevents media from wedging between the gate and body as the valve closes.



Bi-directional zero leakage shut-off

Gate guides (3) support the gate through the entire range of travel. In bottom of the guides, the relief areas (4) promote a self-cleaning, flushing action as the gate moves into the final stage of closure.

The perimeter resilient seat provides tight shut-off in both directions. The seat is also reinforced with a stainless steel core (5) to enhance durability.



A first rate external sealing

The box bottom scraper (6) scrapes the gate clean. An optional top scraper (8) fully encapsulate the gland box system and the gland (9) ensure an even distribution. The gland also features linear locks (10) that securely hold the seat in position as the gate strokes.

The flexible profile (11) on the outside surface of the seat energizes sealing while reducing friction and providing longer cycle life.

Design data

Sizes	Flange drilling	Face-to-face-dimension	ATEX design
3" - 24"	ASME/ANSI B 16.5 Class 150 EN 1092 PN10 AS 2129 Table D and E	MSS-SP81	ATEX directive 94/9/EC Group II category 3 G/D (zone 2 or 22) and 2 G/D (zone 1 or 21).

Other sizes and flange drillings on request.

Leakage rate	Pressure tests
EN 12266-1:2009 rate A: No visually detectable leakage is allowed for duration of the test.	Pressure tests are performed with water at 70° F according to EN 12266-1:2009. Pressure shell test: 1,5 times maximum allowable working pressure for open valve. Pressure seat tightness test: 1,1 times maximum allowable differential pressure for closed valve.

Maximum working pressure body at 70°F		Maximum differential pressure at 70°F	
Sizes	PSI/bar	Sizes	PSI/bar
3" - 24"	150/10	3" - 12"	150/10
		14" - 18"	87 or 150/6 or 10
		20" - 24"	58 or 150/4 or 10

Basic equipment

A. Valve Body			
Material	Code	Type	Maximum temperature °F
Stainless steel	E	EN 1.4408	752

B. Gate	
Material	Type
Stainless steel	EN 1.4404 (AISI 316L)
Duplex stainless steel ¹⁾	EN 1.4462 (S32205)

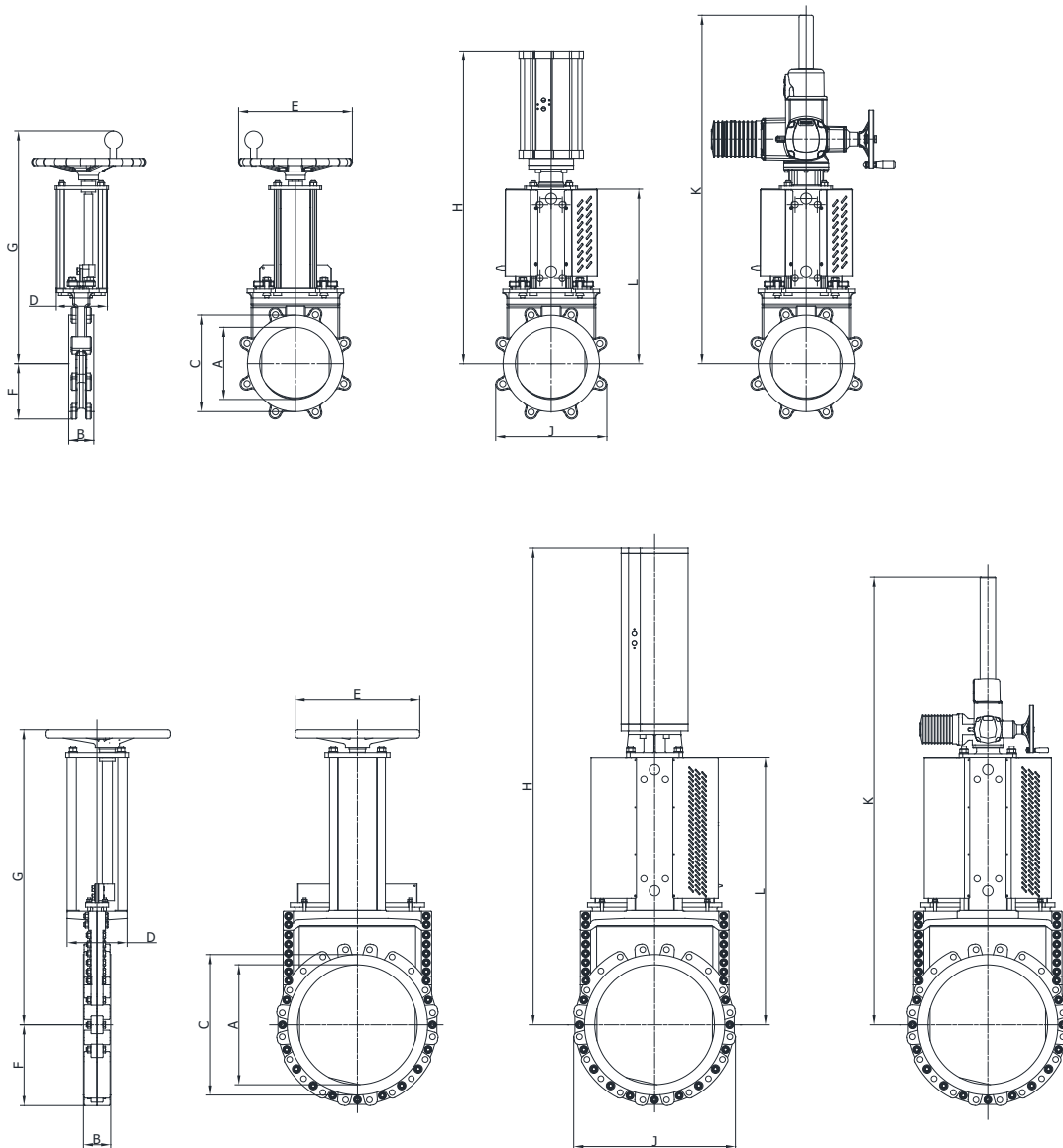
¹⁾ Standard ≥ DN 350 for 10 bar version

C. Seat		
Material	Code	Maximum temperature °F
EPDM	E	248
Nitrile	N	212

D. Box packing system		
Material	Code	Maximum temperature °F
TwinPack™ with bottom scraper in PTFE	TY	500
<i>Option:</i>		
Top scraper in PTFE	TS	500

Actuators

Manual	Code	Automatic	Code
Hand wheel ¹⁾	HW	Pneumatic cylinder	EC
Chain wheel ²⁾	CW	Electric motor	EM
Ratchet wrench ²⁾	RW	Hydraulic cylinder ²⁾	MH
Bevel gear ²⁾	BG		



Main dimensions

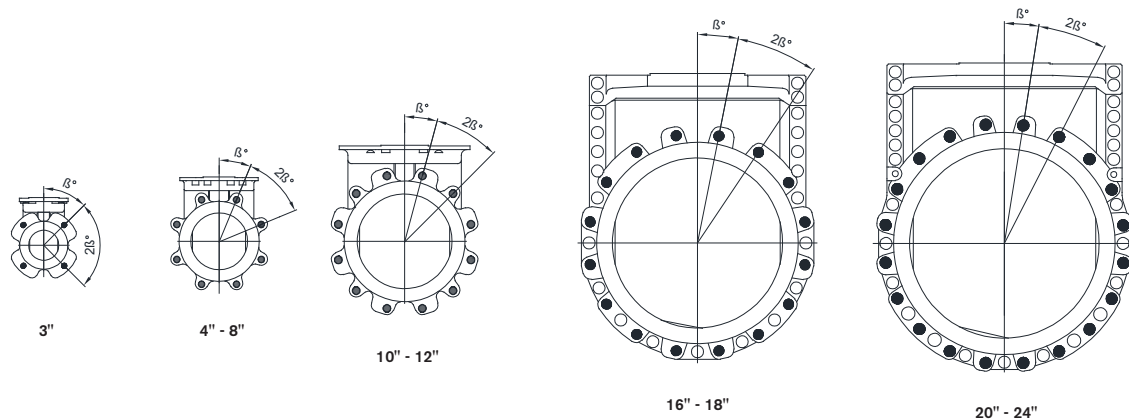
Dimensions (inch)													
Size	A	B	C	D	E	F	G	H ⁷⁾	H ⁸⁾	J	K	L	Weight ⁹⁾
3	3.15	2.01	5.00	3.15	9.84	2.72	13.62	-	20.16	5.39	26.65	10.83	26
4	3.94	2.05	6.02	3.15	9.84	4.02	15.00	-	21.54	8.03	28.03	12.20	33
5	4.92	2.20	6.65	3.39	9.84	4.41	16.57	-	26.97	9.29	29.61	13.78	40
6	5.91	2.20	8.35	3.15	9.84	5.04	18.27	-	28.74	10.08	31.26	15.43	49
8	7.87	2.76	10.55	5.71	12.40	6.10	22.09	-	34.09	12.20	32.20	19.25	82
10	9.84	2.72	12.60	5.71	12.40	7.64	25.87	-	41.34	15.28	35.98	22.80	121
12	11.81	3.07	14.65	5.83	12.40	9.09	29.65	-	45.12	18.19	41.69	26.57	157
14	13.78	3.07	16.93	7.09	15.75	9.88	34.65	57.87	57.87	19.72	48.35	30.83	254
16	15.75	3.50	18.98	7.09	15.75	11.22	38.46	61.61	63.86	22.44	54.13	34.65	342
18	17.72	3.50	20.94	9.84	20.47	12.13	45.39	71.69	70.00	24.21	64.41	40.71	507
20	19.69	4.49	23.07	9.84	20.47	13.31	48.23	76.06	76.06	26.57	67.17	43.82	595
24	23.62	4.49	27.01	9.84	20.47	15.75	56.54	86.26	88.82	31.50	79.45	51.85	882

⁷⁾ Dimensions SAV-B 14" - 18" 87 psi/6 bar version and 20" - 24" 58 psi/4 bar version.

⁸⁾

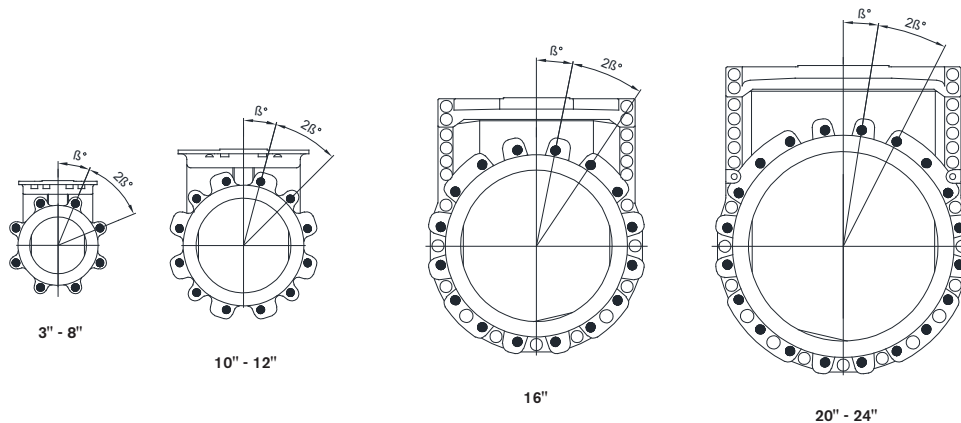
⁹⁾ Dimensions SAV-B 150 psi/10 bar version 3" - 24".

Weight in lbs for valve equipped with hand wheel.



Flange drilling according to ASME/ANSI B 16.5 Class 150

Flange drilling information												
Size	3	4	5	6	8	10	12	14	16	18	20	24
Outside flange diameter (inch)	7.50	9.00	10.00	11.02	13.50	16.02	19.00	21.00	23.50	25.00	27.50	32.00
Bolt circle diameter (inch)	6.00	7.50	8.50	9.50	11.75	14.25	17.00	18.75	21.25	22.75	25.00	29.50
Number of throughgoing bolts (○)	-	-	-	-	-	-	-	-	-	-	-	-
Number of tapped hole on each side (●)	4	8	8	8	8	12	12	12	16	16	20	20
Boltsize (UNC)	5/8-11	5/8-11	3/4-10	3/4-10	3/4-10	7/8-9	7/8-9	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7
β°	45	22,5	22,5	22,5	22,5	15	15	15	11,25	11,25	9	9
Screw lengths ⁹⁾ (inch)	0.55	0.59	0.59	0.59	0.91	0.79	0.83	0.83	1.06	1.06	1.26	1.26



Flange drilling according to EN 1092 PN10

Flange drilling information												
Size	3	4	5	6	8	10	12	14	16	18	20	24
Outside flange diameter (inch)	7.87	8.66	9.84	11.22	13.39	15.55	17.52	OR	22.24	OR	26.38	30.71
Bolt circle diameter (inch)	6.30	7.09	8.27	9.45	11.61	13.78	15.75	OR	20.28	OR	24.41	28.54
Number of throughgoing bolts (○)	-	-	-	-	-	-	-	-	-	-	-	-
Number of tapped hole on each side (●)	8	8	8	8	8	12	12	OR	16	OR	20	20
Boltsize	M16	M16	M16	M20	M20	M20	M20	OR	M24	OR	M24	M27
β°	22.5	22.5	22.5	22.5	22.5	15	15	OR	11.25	OR	9	9
Screw lengths ⁹⁾ (inch)	0.43	0.59	0.59	0.59	0.71	0.79	0.83	OR	1.06	OR	1.26	1.26

⁹⁾ Add the values with the thickness of flanges, washers and gaskets.

○ Throughgoing holes

● Tapped holes