

Model 'SG' Series, Slide Knife Gate Valves

Valution's Model SG Series knife gate valve is a type of valve used to isolate or shut off flow in pipelines. It has a sharp blade that can cut solid particles in flow. Knife gate valves are often used in applications where clogging can be an issue, such as wastewater treatment, mining, and paper.

Knife gate valves are not suitable for high pressure applications, should only be used for applications that require a fully open or fully closed position.

Valuation's Model SG series basically applies the requirements of MSS-SP81 and applies separate codes according to usage conditions.

- General Applications
 - Waste Water
 - Pulp and Paper
 - Mining and Mineral Processing
 - Sand and Gravel Plants
 - Woodchip Power Plants
 - Abrasive Slurry Material

This model can apply the Spring-diaphragm, Cylinder, and Electric motor types of actuators.

SOV and Limit S/Ws are applicable.



1. Numbering System



Actuator Type	Model	Body Type	Flow Direction	Trim Type	Bonnet Type
V10. Pneumatic Spring Diaphragm (4" or Less Size) V20. Pneumatic Spring Cylinder (6" or Less Size) V30. Pneumatic Double Cylinder V90. Electric Motor V01. Other Type	SG	1. Wafer (Flangeless) 2. RF Flanged 3. Lug 4. Other	0. Undefined 1. Uni-Direction 2. Bi-Direction	0. Undefined 1. Conventional 2. Metal Seat 3. Soft Seat 4. Other	0. Undefined 1. Standard (Open) 2. Close(Optional) 3. Other (Stem Protector : Option)

2. Features

- Full Bore : The valve has a full and smooth bore for maintenance of cleaning pigs
- Low Pressure Drop : Valve minimizes pressure drop in fully open position
- Easy to Actuated : Valve is easy to operate
- Low Weight : Valve is relatively light weight

3. Technical Specifications

■ Product Specifications

1) Size Range

- DN50(2") ~ DN1300(52")
- Above DN1350(54") : Available on request

2) Pressure Range

- DN50(2") ~ DN600(24") : 150 psig(10.5 barg), water
- DN650(26") ~ DN900(36") : 100 psig(7.0 barg), water

3) Temperature Range

- Conventional & Metal Seat : As per ASME B16.34 ratings of the material group
- Viton Seat : -20°C ~ 200°C
- PTFE Seat : -196°C ~ 250°C
- EPDM Seat : -50°C ~ 120°C
- NBR Seat : -40°C ~ 80°C

4) End Connection

- ASME B16.5 Lug or RF
- EN 1092
- JIS B2220
- Available others

5) Face to Face

- DN50(2") ~ DN900(36") : Meet to MSS SP-81
- Other Size : Maker standard

6) Pressure Test

- Shell Test : MSS SP-81(Class 150LB), MSS SP-135(Class 150/300LB)
- Seat(Metal) Test : 40ml/Min./NPS(1.6ml/Min./DN) at 40psi



■ Design Concept

1) Body

- One piece, Integral stainless steel cast body
- The integral metal seat provides shut-off condition for MSS SP-81
- Excellent corrosion resistance and chemical resistance
- Heavy duty structures of erosion and corrosion-resistant stainless steel applicable to wastewater, pulp and paper, mining and mineral processing, sand and gravel plants, woodchip power plants, and abrasive slurry services
- Full port design minimizes pressure drop and maximize flow capacity

2) Knife Gate

- Beveled knife gate edge provides strong cutting stress and tight sealing
- Gate surface is well polished at both sides for tight seal and less jamming
- Applied stainless steel material sufficiently resistant to erosion and corrosion

3) Seat

- Optimal solution such as metal seat, PTFE, EPDM, etc. can be applied depending on the type of fluid used, pressure, and temperature

4) Packing

- Excellent chemical resistance and durability
- Applied braided PTFE fiber packing
- Corrosion resistant packing gland applied
- Easy adjustable packing gland bolts

4. Dimensions

1) Standard V20 Pneumatic Actuator (Double acting) Application

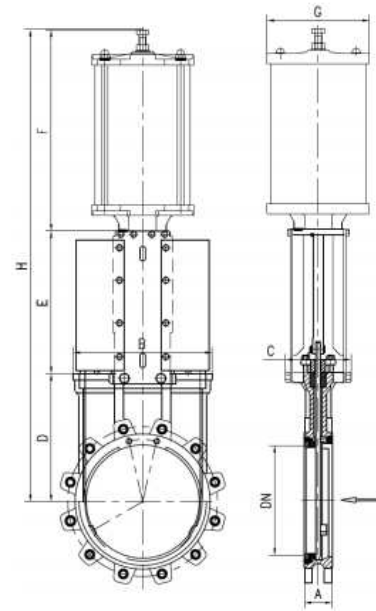
- Valve Size, below DN200 : Aluminum Cylinder
- Valve Size, above DN250 : Carbon steel,
Epoxy coated

2) Air Supply Pressure Range

- 4 barg ~ 7 barg

3) Options

- Stem protector
- Closed bonnet
- Manual override
- Gate cover for safe operation
- Locking device
- Volume tank for fail safe operation
- Limit switches
- Positioner
- Solenoid valve



■ Dimensions for SG Series ASME 150#

(unit : mm)

No.	Size		A	B	C	D	E	F	G	H	Actuator Size	Weight (kg)
	DN	IN										
1	50	2	48	135	106	100	129	230	100	460	80/60	17
2	65	2.5	51	155	106	115	147	245	100	510	80/75	19
3	80	3	51	175	106	121	168	270	120	560	100/85	20
4	100	4	51	183	106	138	192	300	120	630	100/100	23
5	125	5	57	192	120	160	215	330	150	705	125/135	31
6	150	6	57	216	130	185	245	350	150	780	125/160	36
7	200	8	70	271	130	235	302	440	195	980	160/210	72
8	250	10	70	335	140	300	355	505	240	1160	200/260	105
9	300	12	76	381	160	350	401	550	280	1300	250/310	143
10	350	14	76	436	180	400	465	620	380	1485	250/360	218
11	400	16	89	505	180	455	511	670	395	1640	300/410	262
12	450	18	89	550	240	510	580	710	395	1800	300/460	322
13	500	20	114	600	270	560	640	800	425	2000	320/510	352
14	600	24	114	695	270	650	740	910	425	2300	320/610	398

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1. All data shown in this product specification are currently standard specifications of Valution and can be customized by order specification.
2. All data shown above are subject to change without notice.

5. Actuator Selection Guide

No.	Size		Thrust(N)	Torque(N ^m)	No. of turns	Stem size
	DN	IN				
1	50	2	2,000	24	15	TR20 ⁴
2	65	2.5	2,300	32	18	TR20 ⁴
3	80	3	2,800	35	23	TR20 ⁴
4	100	4	3,900	42	28	TR20 ⁴
5	125	5	5,600	59	28	TR22 ⁵
6	150	6	6,750	78	33	TR22 ⁵
7	200	8	10,000	108	37	TR28 ⁶
8	250	10	16,000	180	45	TR28 ⁶
9	300	12	25,000	220	52	TR28 ⁶
10	350	14	31,800	272	60	TR32 ⁶
11	400	16	37,500	345	69	TR32 ⁶
12	450	18	40,000	488	76	TR35 ⁶
13	500	20	47,000	578	83	TR40 ⁷
14	600	24	54,000	735	95	TR40 ⁷

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2. All data shown above are subject to change without notice.
3. The standard warranty period for all Valution products is one year after shipment, and we are not responsible for defects caused by arbitrary modification or customer error.

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