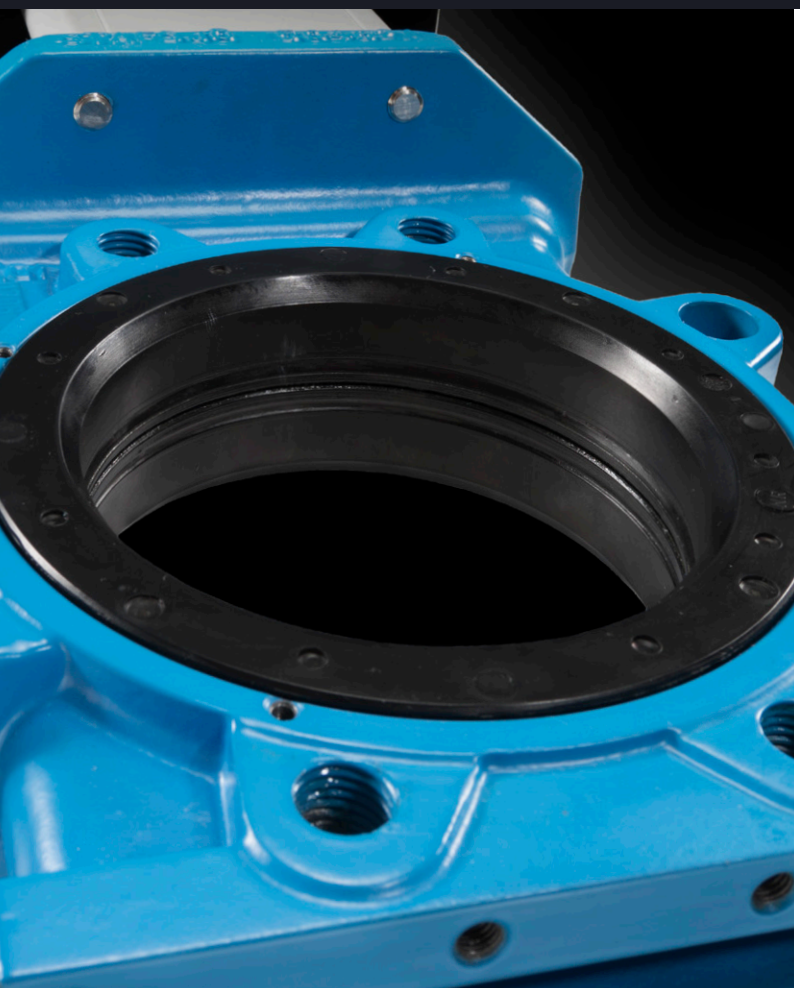
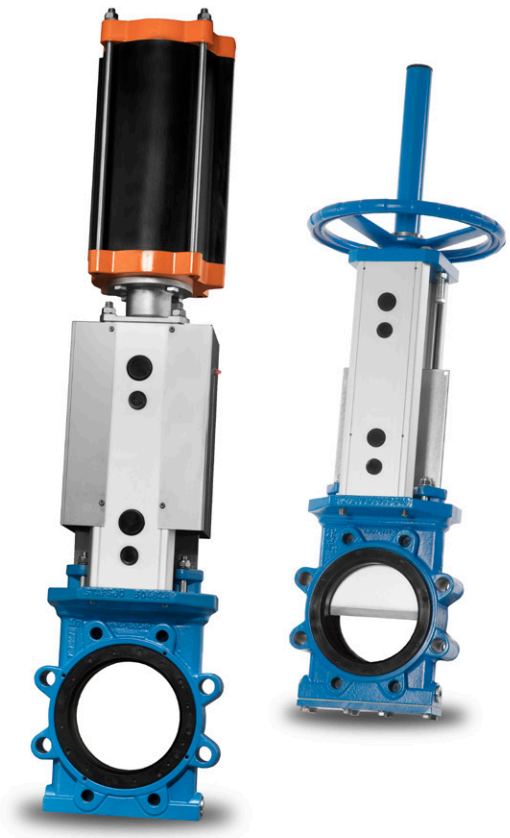
Stafsjö
SINCE 1666

Knife gate valve SLV

Compact push through slurry knife gate valve for abrasive and demanding mineral processing applications

Size range:
2" - 36" (DN 50 - DN 900)



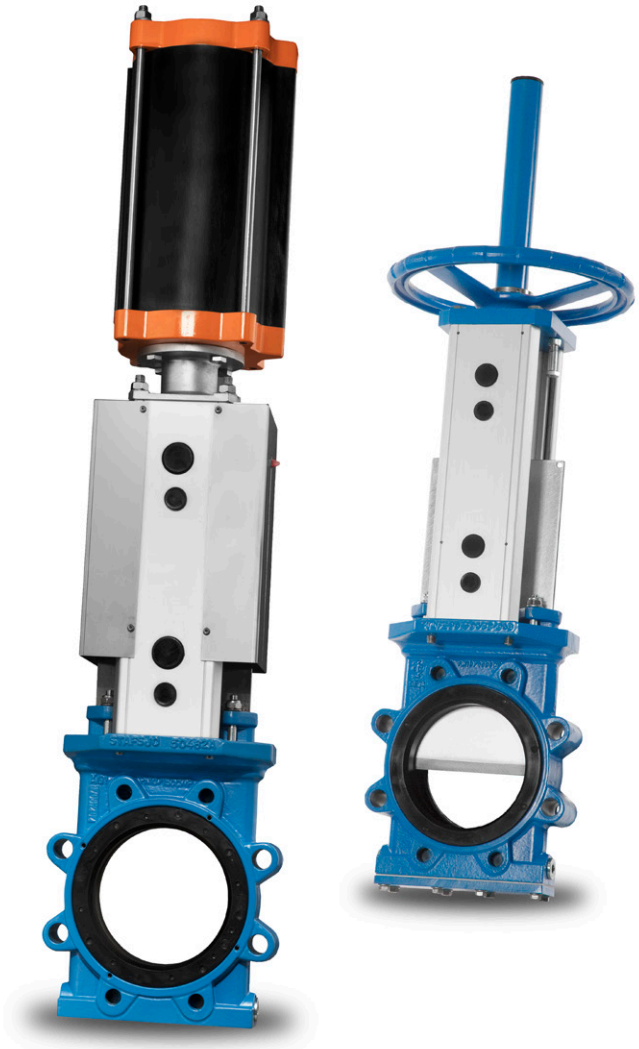


About SLV

This is a compact push through slurry knife gate valve with superior flow characteristics, offering reliable and bi-directional shut-off performance in abrasive and demanding mineral processing applications.

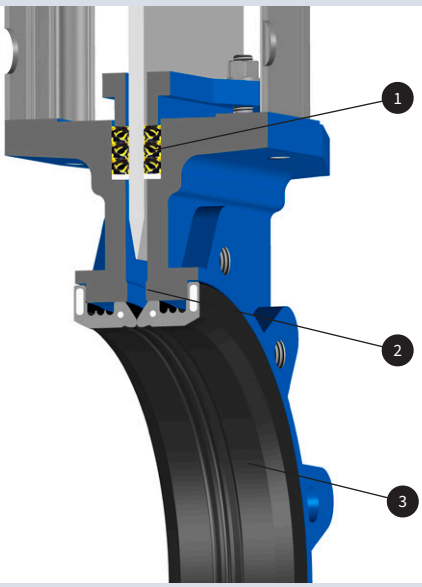
The SLV valve is modular designed and it can easily be customized with actuators and related automation accessories to different process conditions. The valve is also available with mechanical lock out. As standard, the SLV is supplied with a robust and precision machined ductile iron valve body and a strong duplex stainless steel gate, which is special ground for reduction of friction when it cycles through the valve's rubber seats.

In addition to this slurry valve, Stafsjö also offers heavy duty SLF and two high pressure versions, the SLH and SLX, available in pressure class up to 725 psi (50 bar).



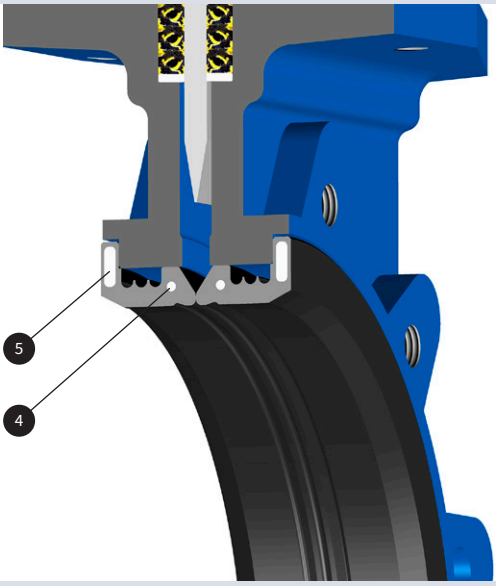
A precise gate alignment extend the service life

A solid top works, a robust gland box system (1) and precision machined gate supports (2) ensure accurate gate alignment throughout the full stroke, thus reducing stress and wear on the valve seats (3).



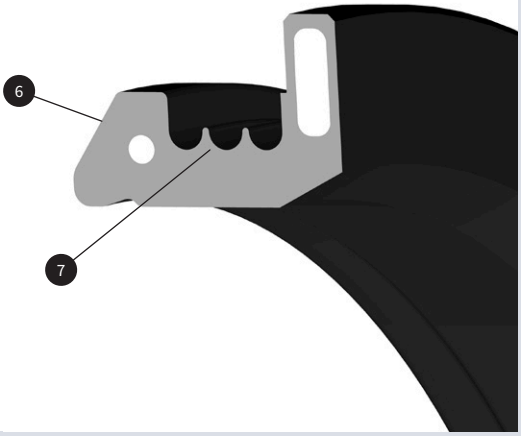
Reinforcements rings ensure stability and performance

The front reinforcement rings (4) ensure the seats shape, position and strength remain during operation while the flange sealing reinforcements (5) secure a tight and exact position of the seats towards the gate and connecting flanges.



Expansion areas reduce stress and actuation force

The seat entrance area (6) is designed to give a smooth gate entry and the expansion areas (7) allows the seat to be axially flexible with minimal actuator force.



Pressure class

Max working pressure at 68 °F		Max differential pressure at 68 °F	
Size	psi/bar	Size	psi/bar
2” - 24”	150/10	2” - 16”	150/10
28” - 36”	75/5	18” - 24”	90/6
		28” - 36”	75/5

Configurations

Standard

Size: 2” - 36”
Valve body: Ductile (Nodular) iron EN 5.3105
Gate: Duplex stainless steel EN 1.4462
Box packing: TwinPack with UHMW-PE scraper
Top works: Stainless steel tie rods encapsulated in aluminum beams up to DN 300 and coated steel beams on larger sizes including stainless steel gate guards on automated valves.

Options

Valve body[1)]
Ductile (Nodular) iron EN 5.3105

Gate
Duplex stainless steel EN 1.4462

Seats
EPDM
Natural rubber

Box packings
TwinPack with scraper in UHMW-PE

Top works
Stainless steel tie rods encapsulated in aluminum beams
Coated carbon steel beams on 14” and larger
Stainless steel beams

Actuators
Hand wheel with rising stem
Bevel gear
Double-acting pneumatic cylinders
Single-acting pneumatic cylinders
Electric actuators
Hydraulic actuator

Flange drillings
EN 1092 PN 10
ASME/ANSI B16.5 and B16.47 Class 150
AS 2129 Table D and E

Accessories
See p. 9 and our accessory data sheet for further information.

Design standards

Face-to-face dimensions
Stafsjö manufacturing standard.

Design, manufacturing, inspection and test
According to pressure equipment directive 2014/68/EU category I and II module A2. The valves are CE marked when it is applicable.

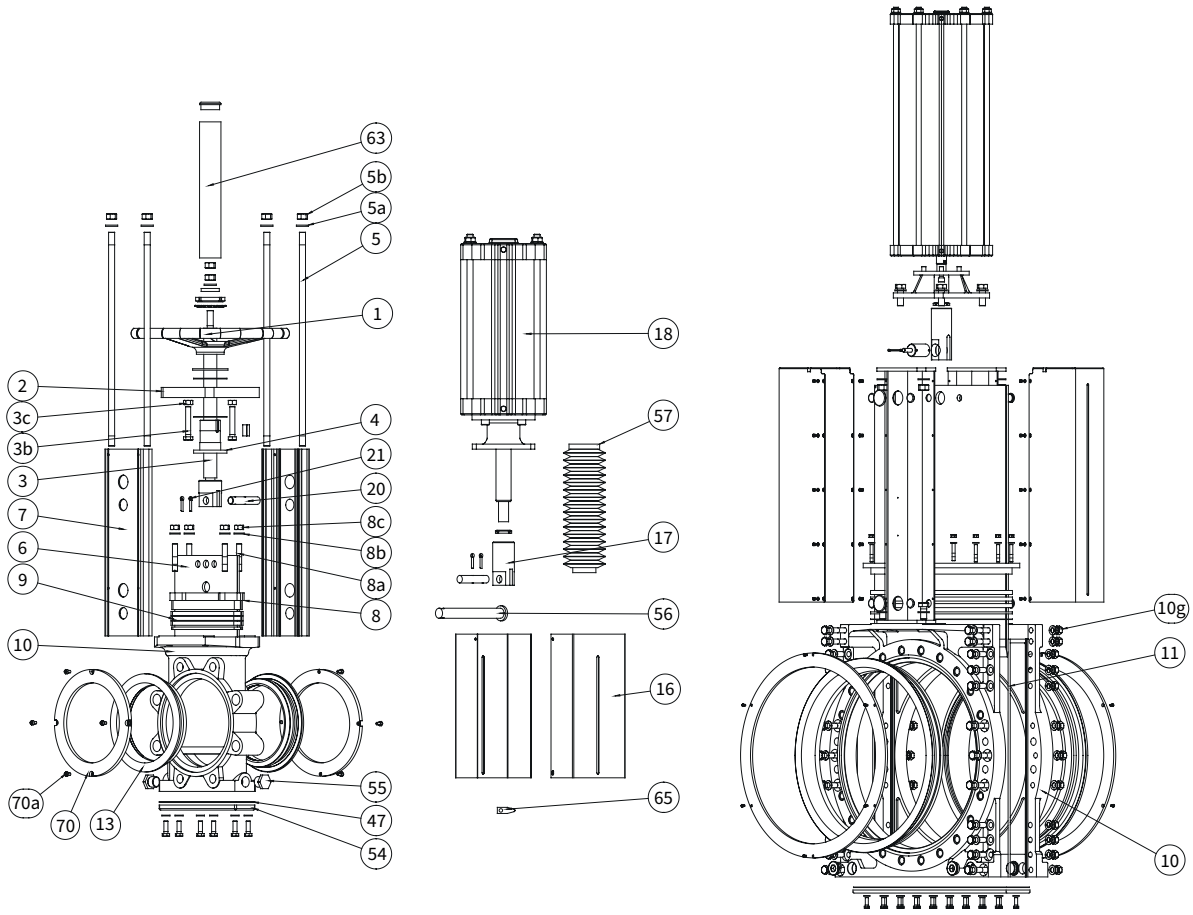
Stafsjö’s valves are subject for pressure tests with water at 68 °F before delivery in opened and closed position for the rated pressure class in bar according to EN 12266-1:2003 rate A. No visually detectable leakage is allowed for duration of the test.

On request Stafsjö can provide 2.2 test report and 3.1 inspection certificate according to EN 10204.

Corrosion protection
Painted valve parts fulfill in applicable areas corrosion protection against environment according EN ISO 12944, corrosivity category C3. Other paint systems can be offered on request.

Service temperature
Information to determine minimum and maximum temperature for the knife gate valve is available on stafsjo.com/support/temperatures/.

1) The valve body is as standard supplied with purge ports: 2” - 8”: 1/2”, 10” - 16”: 3/4”, 18” - 24”: 1”, 28” - 36”: 1 1/2“



Part list

Pos.	Part	Material
1	Hand wheel	Coated cast iron Ø 12” EN-JL1040, GG25 ≥ Ø 16” EN-JL1030, GG20
2	Yoke	Coated steel EN 1.0038
3	Stem with gate clevis	Stainless steel EN 1.4305 ≥ 14”: Gate clevis in coated carbon steel EN 1.0045
3b	Screw	Stainless steel A2
3c	Washer	Stainless steel A2
4	Stem nut	Brass
5	Tie rod	≤ 12”: Stainless steel A2
5a[3)]	Washer	Stainless steel A2
5b[3)]	Nut	Stainless steel A2
6	Gate	Duplex stainless steel EN 1.4462
7	Beam	≤ 12”: Anodized aluminium ≥ 14”: Coated steel EN 1.0038
8	Gland	Coated nodular iron EN 5.3105, WCB EN 1.0619
8a	Stud bolt	Stainless steel A2
8b	Washer	Stainless steel A2
8c	Nut	Stainless steel A2
9[2)]	Box packing	TwinPack with scraper in UHMW-PE
10	Valve body	Coated nodular iron EN 5.3105

Pos.	Part	Material
10g	Valve body boltings	Zinc plated steel
11	Body gasket	FPM/FKM
13[2)]	Seats	Natural rubber or EPDM
16	Gate guard	Stainless steel EN 1.4301
17	Gate clevis	Stainless steel EN 1.4305 ≥ 14”: Coated carbon steel EN 1.0045
18	Cylinder	See data sheet
20	Clevis pin	Stainless steel EN 1.4305
21	Split pin	Stainless steel EN 1.4436
47[1)]	Gasket	Dixo 4000
54[1)]	Bottom cover	Coated steel EN 1.0425. See p. 9.
55	Plug	Zinc plated steel
56[1)]	Locking pin	Stainless steel EN 1.4301. See p. 9.
57[1)]	Bellow	Artificial leather. See p. 9.
62	Wedge	Stainless steel
63	Stemtube	Coated steel EN 1.0038
65	Gate indicator	Nylon 12
70[1)]	Load distribution rings	Stainless steel EN 1.4301. See p. 9.
70a[1)]	Screws	Stainless steel A4

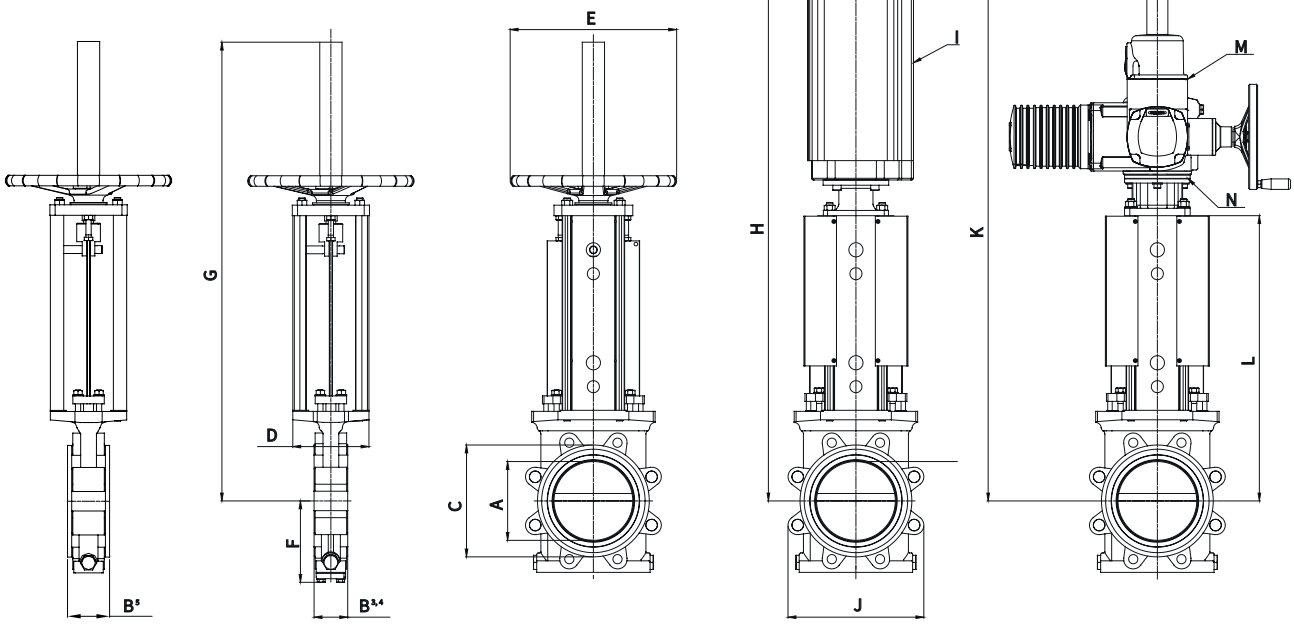
1) Optional accessories

2) Recommended spare parts

3) ≥ 14” details are replaced by screws, washers and nuts.

SLV **with** load distribution rings

SLV **without** load distribution rings



Main dimensions (inch)

Size	A[1)]	A[2)]	B[3)]	B[4)]	B[5)]	C	D	E	F	G	H	I[6)]	J	K	L	M[7)]	N[8)]	lbs[9)]
2	1.97	2.17	2.20	2.13	2.60	3.70	3.15	12.40	3.39	24.17	26.38	SC4.00	4.88	29.65	14.61	SA 07.2	F10/A	29
2.5	2.56	2.80	2.20	2.13	2.60	4.21	3.15	12.40	3.66	24.57	26.77	SC4.00	5.47	30.04	15.00	SA 07.2	F10/A	31
3	3.15	3.27	2.32	2.24	2.72	4.96	3.15	12.40	3.70	28.03	32.17	SC6.30	7.09	31.54	16.50	SA 07.2	F10/A	40
4	3.94	4.21	2.32	2.24	2.87	6.22	3.15	12.40	4.06	29.45	34.53	SC6.30	8.11	32.91	17.87	SA 07.6	F10/A	55
5	4.92	5.20	2.60	2.52	3.15	7.32	5.71	12.40	4.88	34.17	38.86	SC6.30	9.33	38.23	20.98	SA 10.2	F10/A	68
6	5.91	6.26	2.60	2.52	3.15	8.39	5.71	12.40	5.35	34.57	39.25	SC6.30	10.20	38.62	21.38	SA 10.2	F10/A	77
8	7.87	8.15	3.07	2.99	3.62	10.59	5.71	12.40	6.65	40.59	47.01	SC8.00	12.28	42.48	25.24	SA 10.2	F10/A	97
10	9.84	10.24	3.07	2.99	3.78	12.68	5.71	15.75	8.03	45.75	52.20	SC8.00	15.28	49.65	28.46	SA 10.2	F10/A	139
12	11.81	12.20	3.31	3.23	4.02	14.65	6.89	20.47	9.29	55.12	63.03	SC10.00	17.99	55.47	33.90	SA 10.2	F10/A	216
14	13.78	13.78	3.31	3.23	4.02	17.09	7.87	20.47	10.47	59.45	67.95	SC10.00	20.31	61.77	36.06	SA 10.2	F10/A	300
16	15.75	15.75	3.82	3.74	4.53	19.02	7.87	25.00	11.81	64.96	73.58	SC12.60	22.64	66.97	39.29	SA 14.2	F14/A	388
18	17.72	17.72	3.82	3.74	4.53	20.98	11.81	-	12.99	-	81.38	SC12.60	24.69	76.46	44.45	SA 14.2	F14/A	474
20	19.69	19.84	4.84	4.76	5.55	23.19	11.81	-	14.33	-	*	PA16.00	26.77	78.74	46.73	SA 14.2	F14/A	595
24	23.62	23.62	4.84	4.76	5.55	27.17	11.81	-	16.73	-	*	PA16.00	32.13	90.16	54.21	SA 14.2	F14/A	750
28	25.98	27.56	6.85	6.69	7.48	31.42	12.20	-	18.98	-	-	*	36.22	100.43	60.55	SA 14.6	F14/A	1102
32	29.53	31.50	7.64	7.48	8.27	35.63	12.20	-	21.42	-	-	*	40.94	110.91	67.09	SA 14.6	F14/A	1455
36	33.46	33.43	8.86	8.66	9.45	39.57	19.69	-	23.39	-	-	*	45.43	121.50	73.15	SA 14.6	F14/A	1984

1) Bore diameter.

2) Inlet diameter.

3) Minimum required face-to-face for installation without load distribution rings.

4) Installed face-to-face without load distribution rings.

5) Installed face-to-face with load distribution rings (LDR). When the pipe line or connecting flanges are rubber lined or when they do not cover the metal frame around the seats (dimension C), it is recommended to assemble and install the valve with load distribution rings to ensure seat support, long service life and reliable operation.

6) Recommended sizing of double-acting pneumatic cylinder type SC at normal operation with 75 psi (5 bar) air pressure. For other operating conditions, contact Stafsjö or your local representative for advice.

7) Recommended sizing of Auma SA electric motors at normal operation. For other operating conditions, contact Stafsjö or your local representative for advice.

8) Valve and Auma SA interface. The electric motors are mounted as standard with output drive type A (rising stem) according ISO 5210.

9) Weight in lbs for valve including hand wheel with rising stem, > 18” prepared for bevel gear or electric actuator.

* On request.

Main dimensions are only for information. Contact Stafsjö for certified drawings.

Flange drilling according to EN 1092 PN 10

Size	2	2.5	3	4	5	6	8	10	12
Bolt circle diameter (inch)	4.92	5.71	6.30	7.09	8.27	9.45	11.61	13.78	15.75
Number of throughgoing bolts	-	-	4	4	4	4	4	4	4
Number of tapped holes/side	4	4	4	4	4	4	4	8	8
Bolt size	M16	M16	M16	M16	M16	M20	M20	M20	M20
Depth of tapped holes (inch)	0.59	0.59	0.55	0.55	0.63	0.63	0.79	0.75	0.87

Size	14	16	18	20	24	28	32	36
Bolt circle diameter (inch)	18.11	20.28	22.24	24.41	28.54	33.07	37.40	41.34
Number of throughgoing bolts	4	4	4	4	4	4	4	4
Number of tapped holes/side	12	12	16	16	16	20	20	24
Bolt size	M20	M24	M24	M24	M27	M27	M30	M30
Depth of tapped holes (inch)	0.87	0.98	0.91	1.34	1.26	1.93	2.32	2.64

Flange drilling according to ANSI/ASME B16.5 and 16.47 Class 150

Size	2	2.5	3	4	5	6	8	10	12
Bolt circle diameter (inch)	4.75	5.50	6.00	7.50	8.50	9.50	11.75	14.25	17.00
Number of throughgoing bolts	-	-	-	4	4	4	4	4	4
Number of tapped holes/side	4	4	4	4	4	4	4	8	8
Bolt size (UNC)	5/8”-11	5/8”-11	5/8”-11	5/8”-11	3/4”-10	3/4”-10	3/4”-10	7/8”-9	7/8”-9
Depth of tapped holes (inch)	0.59	0.59	0.55	0.55	0.63	0.63	0.79	0.75	0.87

Size	14	16	18	20	24	28	32	36
Bolt circle diameter (inch)	18.75	21.25	22.75	25.00	29.50	34.00	38.50	42.75
Number of throughgoing bolts	4	4	4	4	4	4	4	4
Number of tapped holes/side	8	12	12	16	16	24	24	28
Bolt size (UNC)	1”-8	1”-8	1 1/8”-7	1 1/8”-7	1 1/4”-7	1 1/4”-7	1 1/4”-6	1 1/2"-6
Depth of tapped holes[1)] (inch)	0.83	0.98	0.91	1.34	1.26	1.93	2.32	2.64

Flange drilling according to AS 2129 Table D

Size	2	2.5	3	4	5	6	8	10	12
Bolt circle diameter (inch)	4.49	5.00	5.75	7.01	8.27	9.25	11.50	14.02	15.98
Number of throughgoing bolts	-	-	-	-	4	4	4	4	4
Number of tapped holes/side	4	4	4	4	4	4	4	4	8
Bolt size	M16	M16	M16	M16	M16	M16	M16	M20	M20
Depth of tapped holes (inch)	0.59	0.59	0.55	0.55	0.63	0.63	0.79	0.75	0.87

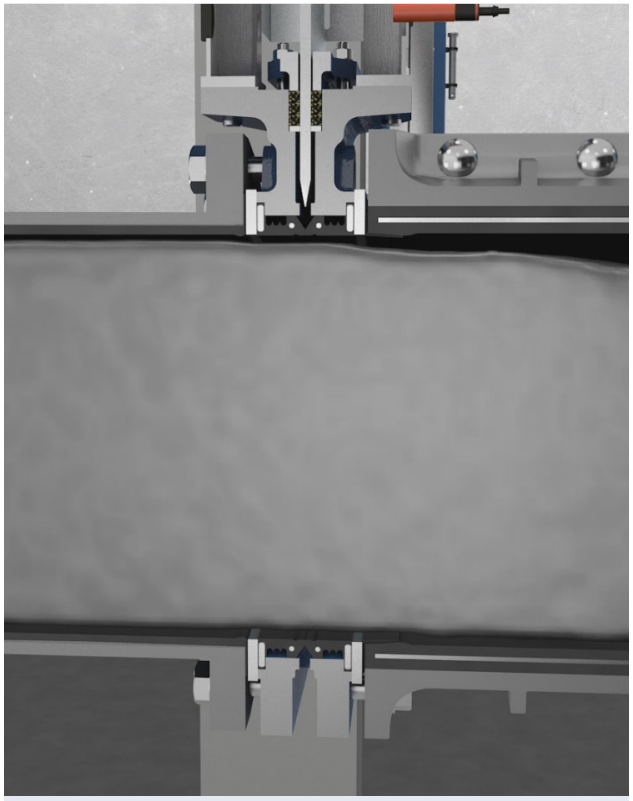
Size	14	16	18	20	24	28	32	36
Bolt circle diameter (inch)	18.50	20.51	22.99	25.24	29.76	33.27	38.74	42.99
Number of throughgoing bolts	4	4	4	4	4	4	4	4
Number of tapped holes/side	8	8	8	12	12	16	16	20
Bolt size	M24	M24	M24	M24	M27	M27	M33	M33
Depth of tapped holes (inch)	0.83	0.98	0.91	1.34	1.26	1.93	2.32	2.64

Flange drilling according to AS 2129 Table E

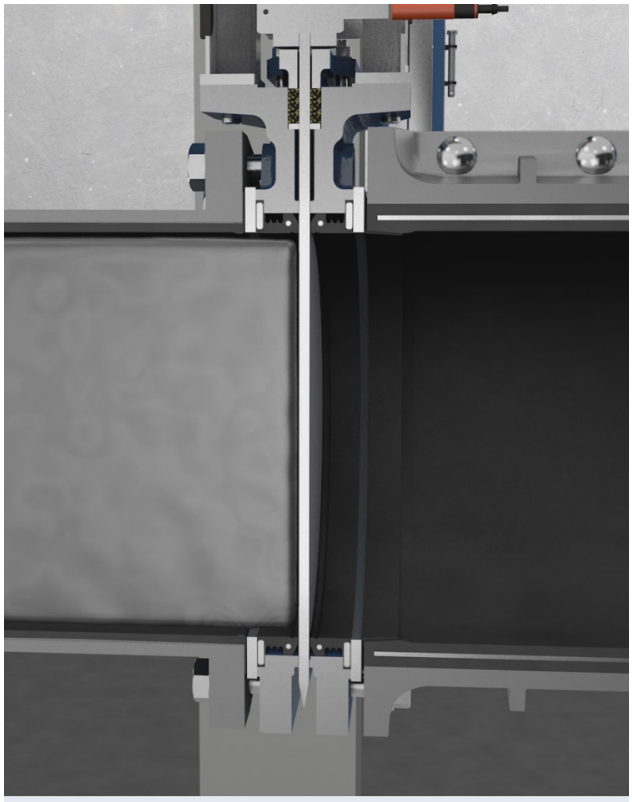
Size	2	2.5	3	4	5	6	8	10	12
Bolt circle diameter (inch)	4.49	5.00	5.75	7.01	8.27	9.25	11.50	14.02	15.98
Number of throughgoing bolts	-	-	-	4	4	4	4	4	4
Number of tapped holes/side	4	4	4	4	4	4	4	8	8
Bolt size	M16	M16	M16	M16	M16	M20	M20	M20	M24
Depth of tapped holes (inch)	0.59	0.59	0.55	0.55	0.63	0.63	0.79	0.75	0.87

Size	14	16	18	20	24	28	32	36
Bolt circle diameter (inch)	18.50	20.51	22.99	25.24	29.76	33.27	38.74	42.99
Number of throughgoing bolts	4	4	4	4	4	4	4	4
Number of tapped holes/side	8	8	12	12	12	16	16	20
Bolt size	M24	M24	M24	M24	M30	M30	M33	M33
Depth of tapped holes (inch)	0.83	0.98	0.91	1.34	1.26	1.93	2.32	2.64

Reliable isolation of abrasive slurry



The full bore SLV forms a rubber lined extension of the pipeline when it is opened position with no area for media build up.



When the valve cycles to the closed position, the two seats are displaced axially forming a tight seal with the gate through the entire stroke for 100 % bubble tight seal in all directions.

Accessories

Lockout pin (1)

For security purposes, slurry valves are always supplied with extra holes in the beams and gate to enable lockout in opened or closed position with a locking pin. The locking pin is supplied in stainless steel EN 1.4301.

Accessories

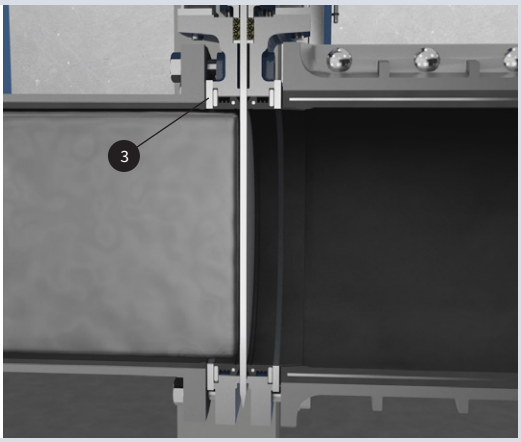
Stem and piston rod protection (2)

The slurry valves can be supplied with a bellow (SP) to protect the stem or piston rod from dirt and dust.

Accessories

Load distribution rings (3)

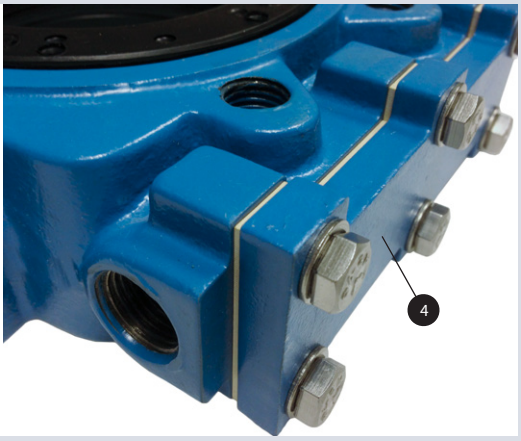
When the pipes and flanges are rubber lined, they do not match up to inlet diameter of the valve or cover the metal frame around the seats, it is recommended to assemble and install the valve with load distribution rings to ensure seat support, long service life and reliable operation. The load distribution rings are supplied as standard in stainless steel EN 1.4301.



Accessories

Bottom cover (4)

It is normal for the SLV to discharge media externally when it cycles open/close through the port in bottom of the valve body. This prevents build of solids and enables the SLV to operate through a wide range of slurry concentrations. The discharge can be controlled by adding a bottom cover (4) and using the purge ports of valve body.



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