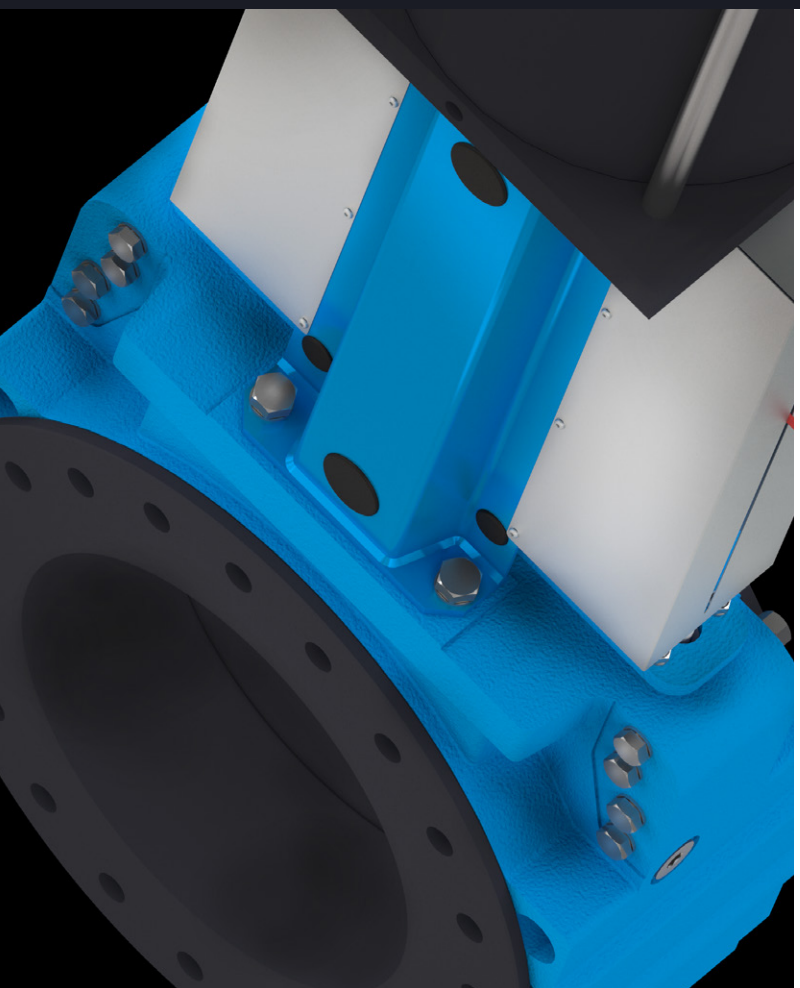
Stafsjö
SINCE 1666

Knife gate valves SLH & SLX

High pressure push through slurry knife gate valves

Size range:
3" - 26" (DN 80 - DN 650)

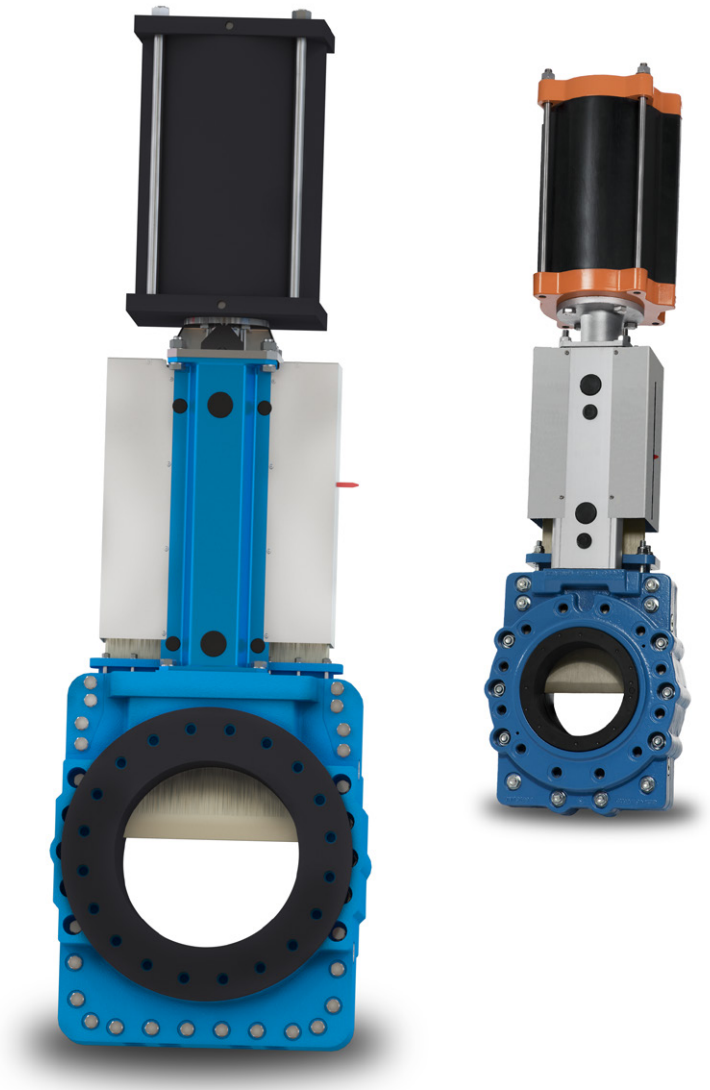


About SLH & SLX

These push through slurry knife gate valves are designed to operate and provide bi-directional tight seal in high pressure and demanding mineral processing applications, typically slurry tailing systems.

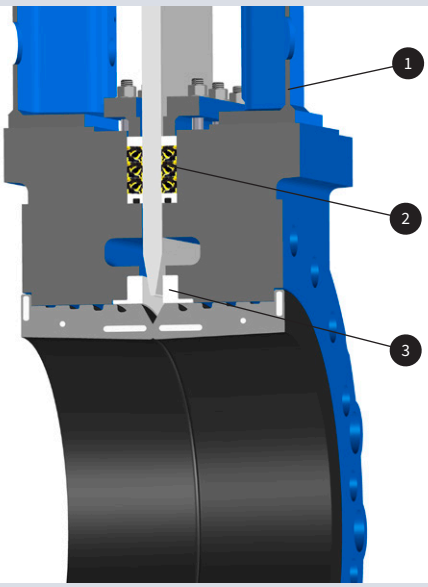
The SLH is designed to operate and provide a bi-directional tight seal up to 300 psi (20 bar) while the SLX handles pressures up to 725 psi (50 bar). They are modular designed and can easily be customized with actuators and related automation accessories to different process conditions. They are also available with mechanical lock out. As standard, the SLH and SLX come with heavy duty, two-piece fully lugged valve bodies in ductile iron. Gates are provided in high strength stainless steel, special ground and hard anti-stick coated for reduction of friction when they cycles through the valve's rubber seats.

In addition to these slurry valves, Stafsjö also offers the compact SLV up to 36" and another wide body slurry valve, the SLF, up to 32".



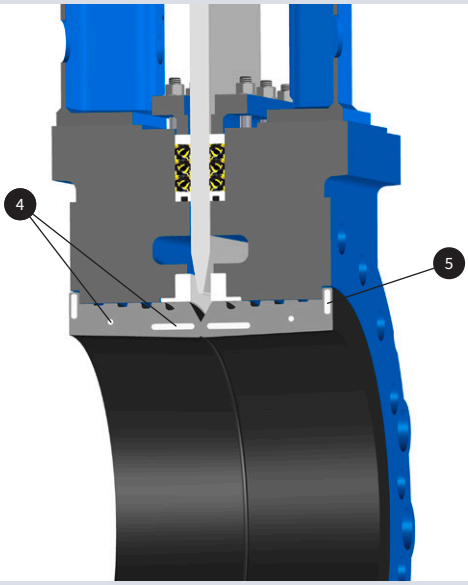
A precise gate alignment extend the service life

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



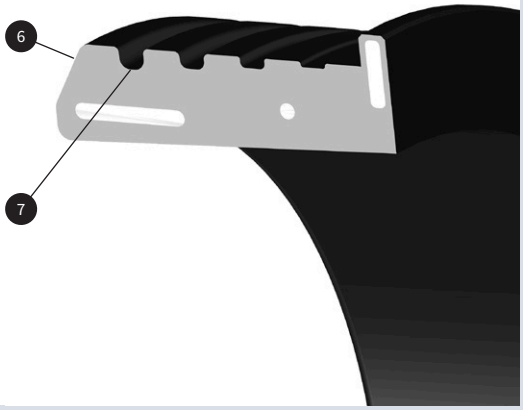
Reinforcements rings ensure stability and performance

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 SLH

Max working and differential pressure at 68 °F	
Size	psi/bar
3” - 26”	300/20

Pressure class SLX

Max working and differential pressure at 68 °F	
Size	psi/bar
3” - 18”	725/50

SLH configuration

Standard

Size: 3” - 26”
Valve body[1]**:** Ductile (Nodular) iron EN 5.3105
Gate: Hard anti-stick coated high strength stainless steel
Box packing: TwinPack with UHMW-PE scraper
Top works: Stainless steel tie rods encapsulated in aluminum beams up to 10” and coated steel EN 1.0038 beams on larger sizes, including stainless steel gate guards on automated valves.

SLX configuration

Standard

Size: 3” - 18”
Valve body[1]**:** Ductile (Nodular) iron EN 5.3105
Gate: Hard anti-stick coated high strength stainless steel
Box packing: TwinPack with UHMW-PE scraper
Top works: Stainless steel tie rods encapsulated in aluminum beams up to 10” and coated steel EN 1.0038 beams on larger sizes, including stainless steel gate guards on automated valves.

Options

Seats
EPDM
Natural rubber

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

Flange drillings
EN 1092 PN16
EN 1092 PN25
EN 1092 PN40
ASME/ANSI B16.5 Class 150
ASME/ANSI B16.5 Class 300
AS 2129 Table F/H

Accessories
See p. 8 and our accessory data sheet for further information.

Design standards

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.

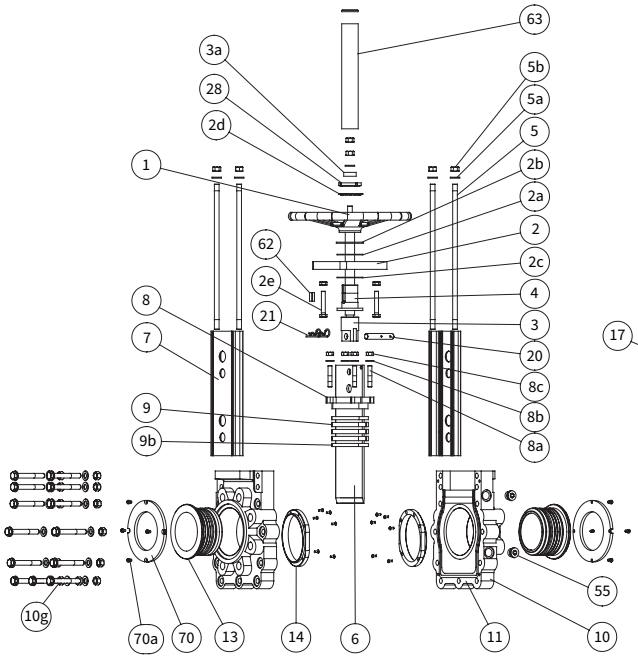
Face-to-face dimensions
Stafsjö manufacturing standard.

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.

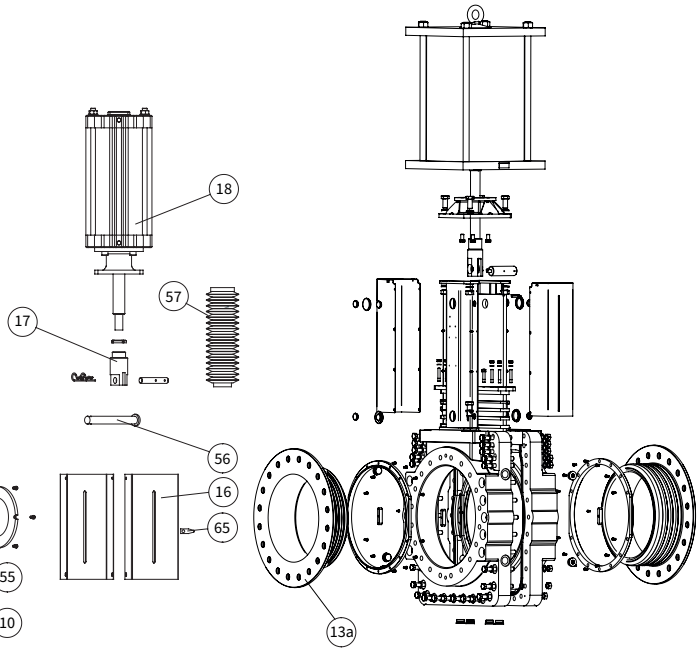
Service temperature
Information to determine minimum and maximum temperature for the knife gate valve is available on stafsjo.com/support/temperatures/.

1) The valve body is as standard supplied with purge ports: 3” - 6”: 3/4” - 1/2”, 8”: 3/4”, 10”: 3/4” - 1”, 12”: 1”, 14”: 1” - 1 1/4”, 16” - 26”: 1 ¼”

3” - 18”



20” - 26”



Part list

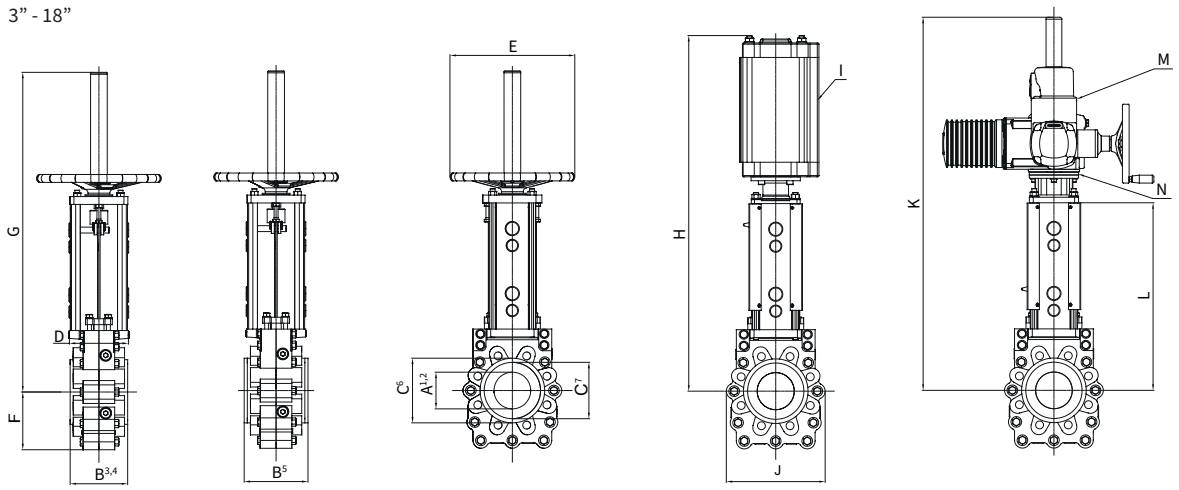
Pos.	Part	Material
1	Hand wheel	Coated cast iron Ø 12” EN-JL1040, GG25 ≥ Ø 16” EN-JL1030, GG20
2	Yoke	Coated steel
2a	Bearing	Iglidur XTM
2b	Slide washer	Brass
2c	Bearing	Iglidur XTM
2d	Washer	Stainless steel A2
2e	Locking nut	Zinc plated steel
3	Stem with gate clevis	Stainless steel EN 1.4305 ≥ 12”: Gate clevis in coated carbon steel EN 1.0045
3a	Stop washer	Stainless steel A2
3b	Screw	Stainless steel A2
3c	Washer	Stainless steel A2
4	Stem nut	Brass
5	Tie rod	≤ 10”: Stainless steel A2
5a	Washer	Stainless steel A2
5b	Nut	Stainless steel A2
6	Gate	Hard anti-stick coated high strength stainless steel
7	Beam	≤ 10”: Anodized aluminium ≥ 12”: Coated steel EN 1.0038
8	Gland	Coated nodular iron EN 5.3105 or steel EN 1.0038, EN 1.0045
8a	Stud bolt	Stainless steel A2
8b	Washer	Stainless steel A2

Pos.	Part	Material
8c	Nut	Stainless steel A2
9[2)]	Box packing	TwinPack with scraper in UHMW-PE
9b[2)]	O-ring	NBR
10	Valve body	Coated nodular iron EN 5.3105
10g	Valve body boltings	Zinc plated steel
11	Body gasket	≤ 12”: PTFE, ≥ DN 350: FKM/FPM
13[2)]	Seat	Natural rubber or EPDM
13a[2)]	Seat with integrated load distribution ring	Only on ≥ DN 500. Natural rubber or EPDM
14[2)]	Guiding supports	POM-C
16	Gate guards	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
55	Plug	Zinc plated steel
56[1)]	Locking pin	Stainless steel EN 1.4301
57[1)]	Bellow	Artificial leather
62	Wedge	Stainless steel
63	Stemtube	Coated steel
65	Gate indicator	Nylon 12
70[1)]	Load distribution rings	≤ 18”: Stainless steel EN 1.4301
70a[1)]	Screws	Stainless steel A4

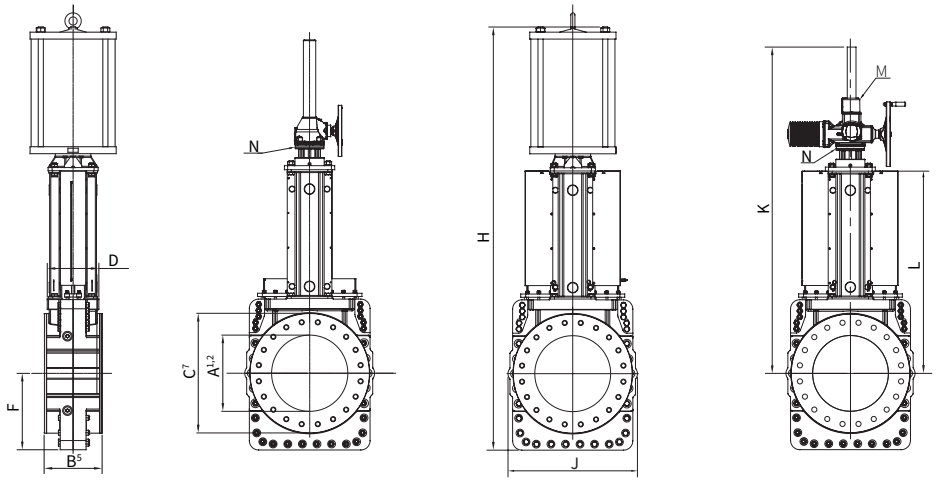
1) Optional accessories

2) Recommended spare parts

3” - 18”



20” - 26”



Main dimensions (mm)

Size	A[1]	A[2]	B[3]	B[4]	B[5]	C[6]	C[7]	D	E	F	G	H	I[8] “SLH”	I[8] “SLX”	J	K	L	M[9] “SLH”	M[9] “SLX”	N[10]	kg[11]	lbs[12]
3	3.15	2.95	5.94	5.75	6.22	5.12	-	5.91	12.40	4.84	24.17	30.47	SC6.30	SC6.30	8.27	29.13	16.54	SA 07.6	SA 07.6	F10/A	85	91
4	3.94	3.66	5.94	5.75	6.38	6.46	-	5.91	15.75	5.79	31.97	34.65	SC6.30	SC8.00	9.88	32.13	18.74	SA 07.6	SA 07.6	F10/A	101	141
6	5.83	5.71	6.06	5.87	6.50	8.50	-	5.91	20.47	7.52	35.43	39.53	SC8.00	SC8.00	12.72	37.56	22.24	SA 10.2	SA 10.2	F10/A	191	243
8	7.83	7.48	6.34	6.14	6.77	10.67	-	6.89	20.47	9.33	44.61	49.02	SC10.00	SC12.60	16.22	44.61	26.89	SA 10.2	SA 10.2	F10/A	287	335
10	9.80	9.45	8.90	8.70	9.49	13.03	-	6.89	24.80	10.51	47.83	56.54	SC10.00	SC12.60	18.39	49.80	30.12	SA 10.2	SA 10.2	F10/A	423	489
12	11.54	11.14	9.76	9.53	10.31	15.75	-	8.27	*	11.93	-	*	*	*	21.14	*	33.82	*	*	*	-	714
14	13.27	12.87	10.12	9.88	10.67	17.40	-	8.27	*	9.41	-	*	*	*	22.48	*	37.83	*	*	*	-	939
16	14.76	14.37	11.02	10.75	11.54	-	18.31	12.20	*	14.72	-	*	*	*	26.57	*	43.07	*	*	*	-	1252
18	16.97	15.75	12.20	11.89	12.68	-	20.31	12.20	*	16.77	-	*	*	*	29.96	*	46.93	*	*	*	-	1649
20	18.50	18.11	-	-	14.13	-	29.13	12.60	*	18.62	-	*	*	*	31.54	*	49.37	*	-	*	-	*
24	22.44	22.05	-	-	14.61	-	33.46	15.20	*	20.47	-	*	*	*	39.92	*	56.77	*	-	*	-	*
26	24.41	24.02	-	-	14.88	-	39.61	15.75	*	23.03	-	*	*	*	46.26	*	63.15	*	-	*	-	*

1) Inlet diameter.

2) Bore 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).

6, 7) When the connecting flanges are rubber lined or when they do not cover the metal frame around the seats (dimension C^6 on ≤ 14” or dimension C^7 + 0.79 mm on 16” - 18”, it is recommended to assemble and install the valve with load distribution rings to ensure long service life and reliable operation. Specifically 20” - 26” have load distribution rings integrated with the seat.

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

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

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

11) Weight in lbs for valve including hand wheel.

12) Weight in lbs for valve including double-acting pneumatic cylinder type SC, ≥ 18” prepared for bevel gear or electric actuator.

* On request

Flange drilling according to EN 1092 PN 16

Size	3	4	6	8	10	12	14	16	18	20	24	26
Bolt circle diameter (mm)	6.30	7.09	9.45	11.61	13.98	16.14	-	20.67	23.03	25.59	30.31	-
Number of tapped holes/side	8	8	8	12	12	12	-	16	20	20	20	-
Bolt size	M16	M20	M20	M20	M24	M24	-	M27	M27	M30	M33	-
Depth of tapped holes (mm)	1.30	1.30	1.34	1.14	2.24	2.40	-	1.77	1.77	1.85	1.85	-

Flange drilling according to EN 1092 PN 25

Size	3	4	6	8	10	12	14	16	18	20	24	26
Bolt circle diameter (mm)	6.30	7.48	9.84	12.20	14.57	16.93	19.29	21.65	23.62	25.98	30.31	-
Number of tapped holes/side	8	8	8	12	12	16	16	16	20	20	20	-
Bolt size	M16	M20	M24	M1624	M27	M27	M30	M33	M33	M33	M36	-
Depth of tapped holes (mm)	33	33	34	29	57	61	65	45	45	47	47	-

Flange drilling according to EN 1092 PN 40

Size	3	4	6	8	10	12	14	16	18	20	24	26
Bolt circle diameter (mm)	6.30	7.48	9.84	12.60	15.16	17.72	20.08	23.03	24.02	26.38	31.30	-
Number of tapped holes/side	8	8	8	12	12	16	16	16	20	20	20	-
Bolt size	M16	M20	M24	M27	M30	M30	M33	M36	M36	M39	M45	-
Depth of tapped holes (mm)	1.30	1.30	1.34	1.14	2.24	2.40	2.56	1.77	1.77	1.85	1.85	-

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

Size	3	4	6	8	10	12	14	16	18	20	24	26
Bolt circle diameter (mm)	6.00	7.50	9.50	11.75	14.25	17.00	18.75	21.25	22.75	25.00	29.50	31.75
Number of tapped holes/side	4	8	8	8	12	12	12	16	16	20	20	24
Bolt size (UNC)	5/8"-11	5/8"-11	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	1 1/4”-7
Depth of tapped holes (mm)	1.30	1.30	1.34	1.14	2.24	2.40	2.56	1.77	1.77	1.85	1.85	3.11

Flange drilling according to ASME/ANSI B16.5 Class 300

Size	3	4	6	8	10	12	14	16	18	20	24	26
Bolt circle diameter (mm)	6.62	7.88	10.62	13.00	15.25	17.75	20.25	22.50	24.75	27.00	32.00	34.50
Number of tapped holes/side	8	8	12	12	16	16	20	20	24	24	24	28
Bolt size (UNC)	3/4"-10	3/4"-10	3/4"-10	7/8"-9	1"-8	1 1/8"-7	1 1/8" -7	1 1/4"-7	1 1/4"-7	1 1/4"-7	1 1/2"-6	1 5/8”-5
Depth of tapped holes (mm)	1.30	1.30	1.34	1.14	2.24	2.40	2.56	1.77	1.77	1.85	1.85	3.11

Flange drilling according to AS Table F/H

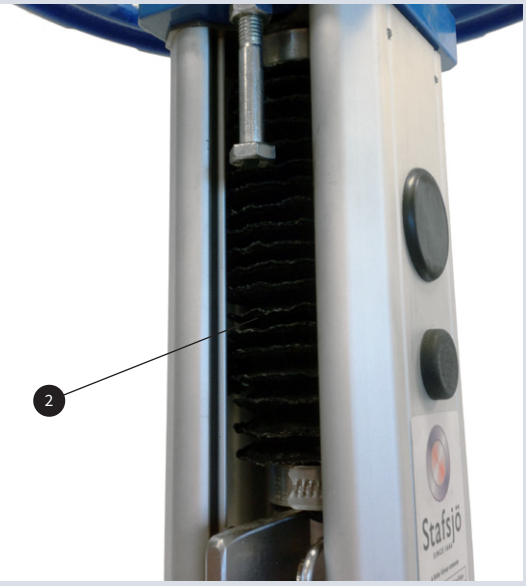
Size	3	4	6	8	10	12	14	16	18	20	24	26
Bolt circle diameter (mm)	6.50	7.52	10.24	12.76	15.00	17.24	19.49	21.73	24.02	26.50	30.75	-
Number of tapped holes/side	8	8	12	12	12	16	16	20	20	24	24	-
Bolt size	M16	M16	M20	M20	M24	M24	M27	M27	M30	M30	M33	-
Depth of tapped holes (mm)	1.30	1.30	1.34	1.14	2.24	2.40	2.56	1.77	1.77	1.85	1.85	-

Lockout pin (1)

For security reason the 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.

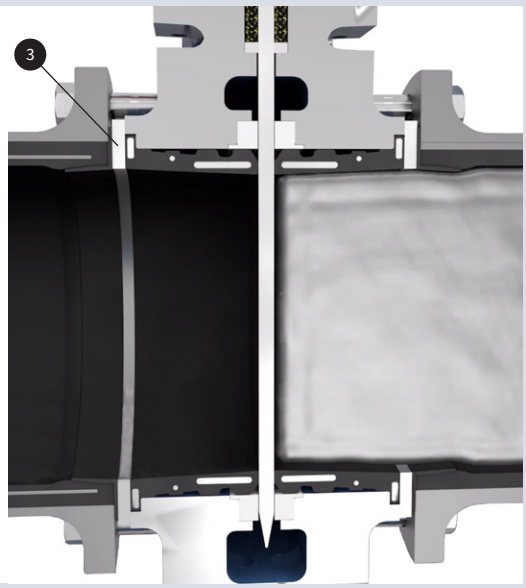
Stem and piston rod protection (2)

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



Load distribution rings (3)

When the pipes and flanges are rubber lined, they do not match up to inlet diameter of the valve or exceed dimension “C”, it is recommended to assemble and install the valve with load distribution rings (LDR) to ensure long service life and reliable operation. The load distribution rings are supplied as standard in stainless steel EN 1.4301. Specifically 20” - 26” have load distribution rings integrated with the seat.



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