

Knife gate valve

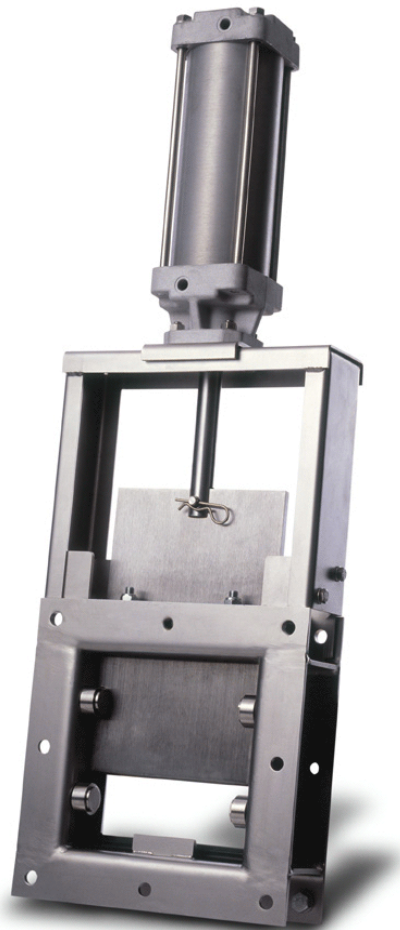
DN 200x200 – 1000x1000

The Stafsjö RKS knife gate valve is an isolating valve designed for low pressure systems in water supply and sewer systems and other applications such as wet and dry sludge handling, pellets and similar.

The RKS is a robust welded construction in stainless steel. Sizes range from DN 200 up to DN 1000. The valve is supplied with the unique Stafsjö box packing TwinPack™ to ensure high operation reliability.

Due to the flexible design of the RKS, it can be provided with different types of manual and automatic actuators and accessories, such as limit switches.

The Stafsjö knife gate valve RKS is designed and manufactured according to Swedish standards for pressure equipment and pipe systems, TKN 1987 and RN 1978.



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Design data

Maximum working pressure body at 20°C

DN	bar
200-1000	3

Maximum differential pressure at 20°C

DN	bar
200-1000	1

Basic equipment

A. Valve body

Material		
Stainless steel	E	SS2348/AISI316

B. Gate

Body	Material
Stainless steel	E SS2333/AISI304

C. Sealing profile

Maximum temp. °C		
Nitrile	N	100
Brass	M	200

D. Box packing

		pH	Maximum temp. °C
TwinPack™	TY	1-13	260

E. Flange drilling

Stafsjö standard RKS – see p. 7

F. Face-to-face dimensions

Stafsjö standard – see table p. 6

Valve sizes (mm)

Width bore/port A1 x height bore/port A2, see p. 6.

A2→	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A1↓ 200	X	X	X														
250	X	X	X	X													
300	X	X	X	X	X	X											
350		X	X	X	X	X	X										
400			X	X	X	X	X	X	X								
450			X	X	X	X	X	X	X	X	X	X					
500				X	X	X	X	X	X	X	X	X	X				
550				X	X	X	X	X	X	X	X	X	X	X			
600					X	X	X	X	X	X	X	X	X	X	X		
650						X	X	X	X	X	X	X	X	X	X	X	
700							X	X	X	X	X	X	X	X	X	X	X
750							X	X	X	X	X	X	X	X	X	X	X
800								X	X	X	X	X	X	X	X	X	X
850									X	X	X	X	X	X	X	X	X
900										X	X	X	X	X	X	X	X
950											X	X	X	X	X	X	X
1000												X	X	X	X	X	X

For other valve sizes, please contact Stafsjö or your local representative for advice.

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Actuator

Manual

Hand wheel, rising stem	HW
Chain wheel, rising stem	CW

Automatic

Pneumatic cylinder	AC
Electric motor	EM

Hand wheel, rising stem

DN A1xA2	Ø	Stem thread
200x200 – 500x750	315	Tr 25x10
550x350 – 650x1000	400	Tr 31,5x12,7
700x450 – 1000x1000	520	Tr 40x12

Thread according to Stafsjö standard.

Pneumatic cylinder – recommended sizes at 5 bar air pressure

A2→	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A1↓ 200	100	100	100														
250	100	100	100	100													
300	100	100	100	160	160	160											
350		100	160	160	160	160	160										
400			160	160	160	160	160	160	160								
450			160	160	160	160	160	160	160	160	160						
500				160	160	160	160	160	160	160	160	160	200				
550				160	160	160	160	160	160	160	200	200	200				
600					160	160	160	160	200	200	200	200	200	200	200		
650						160	160	200	200	200	200	200	200	200	200	250	
700							160	200	200	200	200	200	200	200	250	250	250
750								200	200	200	200	200	200	200	250	250	250
800									200	200	200	200	200	250	250	250	250
850										200	200	200	250	250	250	250	250
900											200	200	250	250	250	250	250
950												250	250	250	250	250	250
1000													250	250	250	250	250

The table gives recommended cylinder sizes at normal operation at 5 bar air pressure. For other operating conditions, please contact Stafsjö or your local representative for advice.

Electric motor – recommended sizes with AUMA multi-turn

A2→	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A1↓ 200	07.1	07.1	07.1														
250	07.1	07.1	07.1	07.1													
300	07.1	07.1	07.1	07.5	07.5	07.5											
350		07.1	07.5	07.5	07.5	07.5	07.5										
400			07.5	07.5	07.5	07.5	07.5	07.5	07.5								
450			07.5	07.5	07.5	07.5	07.5	07.5	07.5	07.5	07.5						
500				07.5	07.5	07.5	07.5	07.5	07.5	07.5	07.5	07.5					
550				10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1				
600					10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1		
650						10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	
700							10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	14.1	14.1	14.1
750								10.1	10.1	10.1	10.1	10.1	10.1	10.1	14.1	14.1	14.1
800									10.1	10.1	10.1	10.1	10.1	14.1	14.1	14.1	14.1
850										10.1	10.1	10.1	14.1	14.1	14.1	14.1	14.1
900											10.1	10.1	14.1	14.1	14.1	14.1	14.1
950												14.1	14.1	14.1	14.1	14.1	14.1
1000													14.1	14.1	14.1	14.1	14.1

Electric motors are mounted according to standard ISO 5210. The table gives recommended motor sizes at normal operation. For other operating conditions, please contact Stafsjö or your local representative for advice.

For other actuators, please contact Stafsjö or your local representative for advice.

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Accessories

Limit switches

Mechanical	Ersce E100	
Inductive	ifm electronic IG-2008-ABOA / IG0006	2-wire 20-250 V AC/DC
	ifm electronic IG-3008-BPKG / IG5401	3-wire 10-36 V DC PNP

Accessories to pneumatic cylinder

Solenoid valve	Metal Work SOV 35 SOS OO	1/4"
	Metal Work SOV 45 SOS OO	1/2"
Magnetic limit switch	Elobau 102 247	2-wire 10-250 V AC/DC
	Elobau 102 290 PE	3-wire 10-30 V DC

For advice regarding accessories, please contact Staffsjö or your local representative.

Pressure tests

Pressure tests are not performed. The RKS knife gate valve obturator is tightness tested only for soft sealing profile.

Leakage rate

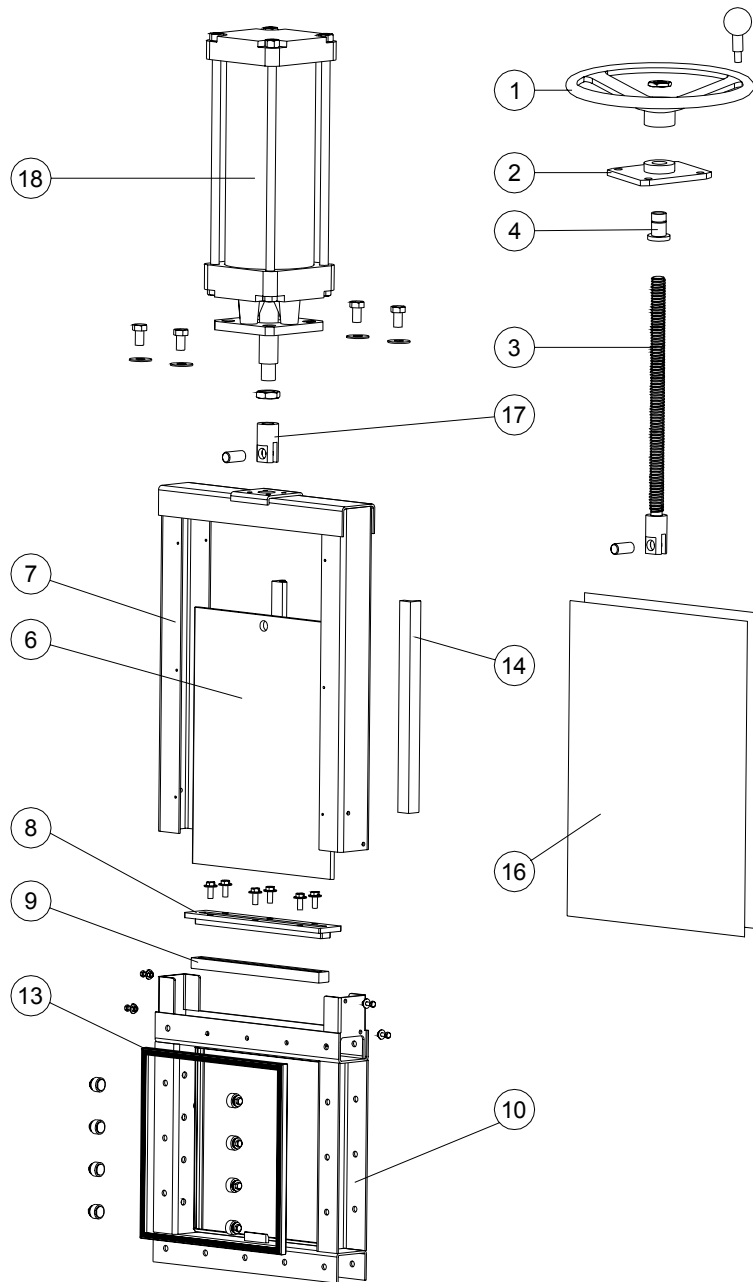
The RKS knife gate valve is drip tight with a soft sealing profile.

Materials – corresponding foreign materials

Staffsjö standard	Type of material	Sweden	Germany		USA			England	Japan
		SS	W. Nr.	DIN	ASTM	AISI	UNS	BS	JIS
A2	Stainless	SS2333	W1.4301	X5CrNi18 M 10		304	S30400	304S15	SUS 304
AISI 304	Stainless	AISI 304	W1.4301	X5CrNi18 M 10		304	S30400	304S15	SUS 304
EN AW-6063-T6	Aluminium	EN AW-6063-T6		AlMgSi 0,5	AA 6063				
SS0120-00	Cast iron	SS0120-00	0.6020	GG 20	A 48 No 30 B			Grade 220	FC 200
SS1312	Carbon steel	SS1312		RSt 37-2	A 36			40 B	
SS2303-03	Stainless	SS2303-03	W1.4021	X20Cr13		420	S42010	420S37	SUS 420J1
SS2320-02	Stainless	SS2320-02	W1.4016	X6Cr17		430	S43000	430S17	SUS 430
SS2333-02	Stainless	SS2333-02	W1.4301	X5CrNi18 M 10		304	S30400	304S15	SUS 304
SS2343-12	Stainless	SS2343-12	W1.4408	G-X6CrNiMo 18 10	A 743-91 CF-8M			316 C 16	SCS 14
SS2343-28	Stainless	SS2343-28	W1.4436	X3CrNiMo17 13 3	A 240, Type 316			Gr 316 S 33	
SS2346-02	Stainless	SS2346-02	W1.4305	X10CrNiS 18-9		303		303S31	SUS303
SS2347-02	Stainless	SS2347-02	W1.4401	X5CrNiMo17 12 2		316	S31600	316S31	SUS 316
SS2383-02	Stainless	SS2383-02	W1.4104	X12CrNiOS17		430 F	S43020		430 F
SS5170-00	Brass	SS5170-00		CuZn39Pb3	C 36000			CZ 121	
SS2377-02	Stainless	SS2377-02	W1.4462	X2CrNiMoN22 5 3			S31803	318S13	
W1.4408	Stainless	W1.4408	W1.4408	G-X6CrNiMo 18 10	A 743-91 CF-8M			316 C 16	SCS 14

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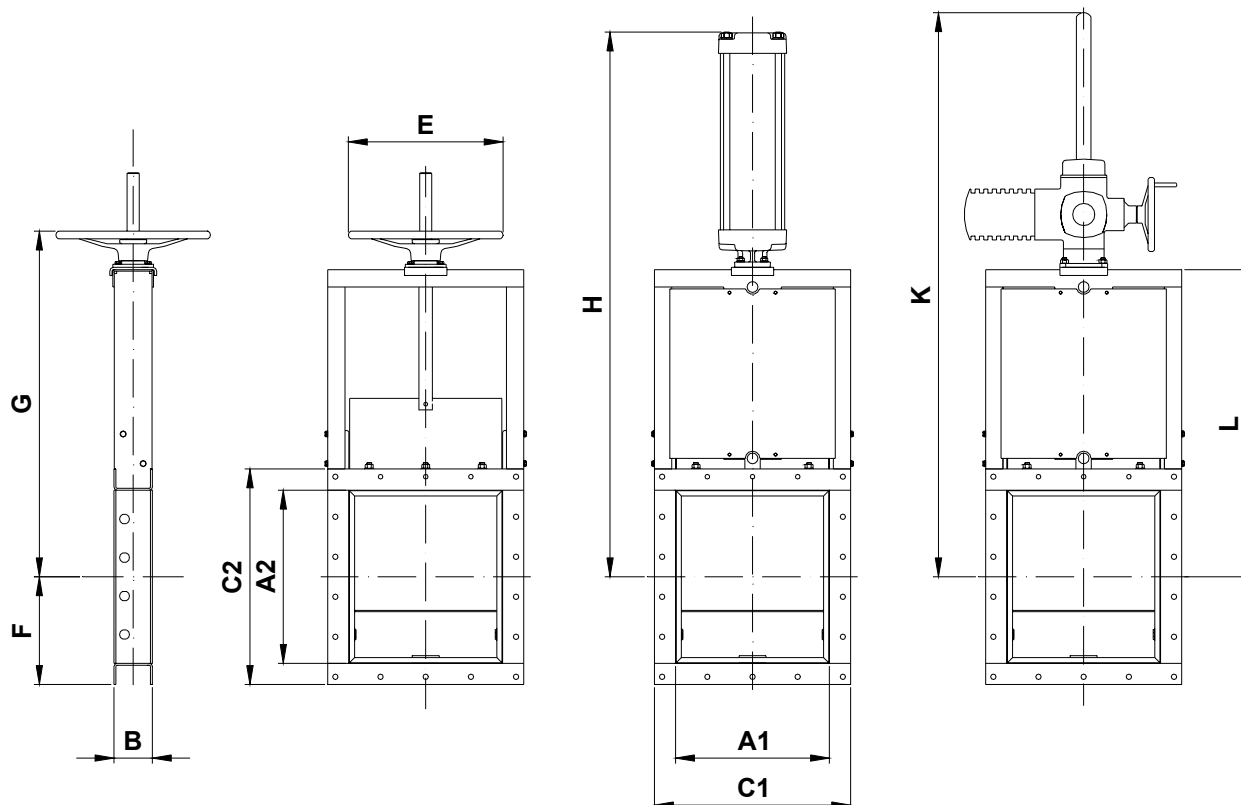
Pos	Part	Material
1	Hand wheel	Ø315 Aluminium ENAC-AISI9Cu3(Fe), Ø400-520 Cast iron GG20
2	Yoke	Steel, painted
3	Stem	Stainless steel SS2383-02
4	Stem nut	Brass
6	Gate	See equipment B
7	Top frame	See equipment A
8	Gland	Stainless steel SS2333/AISI304
9	Box packing*	See equipment D

Pos	Part	Material
10	Valve body	See equipment A
13	Sealing profile*	See equipment C
14	Guide strip	HD-polyethylene
16	Gate guard, not for HW	Stainless steel SS2333-02
17	Gate clevis	Stainless steel SS2346-02
18	Cylinder	See data sheet

* Recommended spare parts

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Dimensions (mm)

DN A1xA2	B
200x200 – 300x450	90
350x250 – 650x1000	100
700x450 – 1000x1000	140

DN A1xA2	L
200x200 – 550x800	F + A2 + 76
600x400 – 650x950	F + A2 + 71
700x500 – 1000x1000	F + A2 + 78

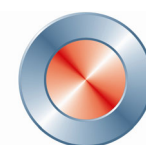
DN A1xA2	C1	C2
200x200 – 550x800	A1 + 110	A2 + 110
600x400 – 650x1000	A1 + 120	A2 + 120
700x450 – 1000x1000	A1 + 130	A2 + 130

DN A1xA2	H
AC.100	L + A2 + 164
AC.160	L + A2 + 203
AC.200	L + A2 + 249
AC.250	L + A2 + 356

DN A1xA2	F
200x200 – 1000x1000	C2 x 0,5

DN A1xA2	K
AUMA 07.1	L + A2 + 100
AUMA 07.5	L + A2 + 100
AUMA 10.1 550x350 – 650x900	L + A2 + 111
AUMA 10.1 700x500 –	L + A2 + 143
AUMA 14.1	L + A2 + 143

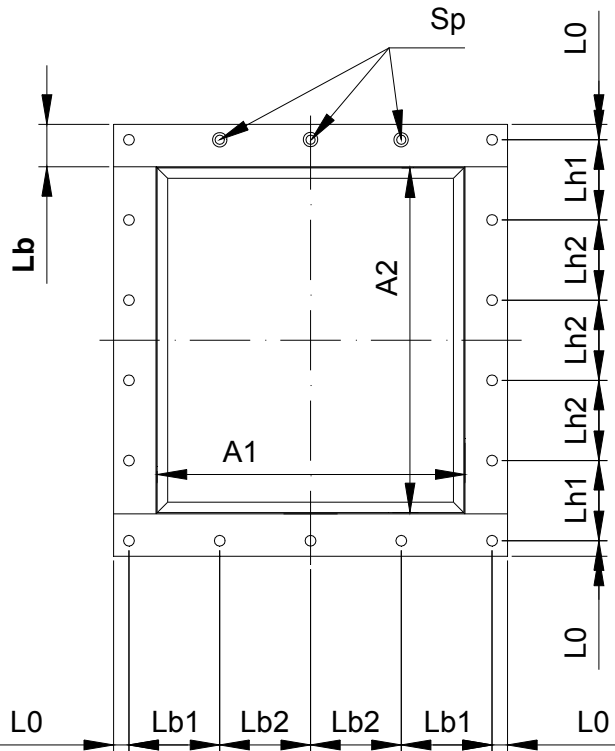
DN A1xA2	G	E
200x200 – 500x750	F + A2 + 186	315
550x350 – 650x1000	F + A2 + 195	400
700x450 – 1000x1000	F + A2 + 244	520



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Flange drilling



L0 = 20 mm

Lb1/Lh1 is the distance between the corner hole and the adjacent hole.
Lb2/Lh2 is the distance between the remaining holes, no matter the number of holes.

Sp = threaded holes on top A1 side
Number of threaded holes = no. of holes per A1 side - 2

Sdf = Ø through-going holes
Sdf on A2 side is decided by Sdf on A1 side.

A1 and A2	No. of holes per side	Sp	Sdf mm
200	3	M12	14
250	4	M12	14
300	4	M12	14
350	5	M12	14
400	5	M12	14
450	6	M12	14
500	6	M12	14
550	7	M12	14
600	7	M12	14
650	7	M12	14
700	8	M16	18
750	8	M16	18
800	9	M16	18
850	9	M16	18
900	10	M16	18
950	10	M16	18
1000	10	M16	18

Lb = 55 mm

A1	Lb1	Lb2	A2	Lh1	Lh2
200	135,0	135,0	200	135,0	135,0
250	107,0	106,0	250	107,0	106,0
300	124,0	122,0	300	124,0	122,0
350	105,0	105,0	350	105,0	105,0
400	117,5	117,5	400	117,5	117,5
450	104,0	104,0	450	104,0	104,0
500	114,0	114,0	500	114,0	114,0
550	104,0	103,0	550	104,0	103,0
			600	113,0	111,0
			650	120,0	120,0
			700	110,0	110,0
			750	117,5	117,0
			800	111,0	108,0

Lb = 60 mm

A1	Lb1	Lb2	A2	Lh1	Lh2
600	114,0	113,0	400	120,0	120,0
650	122,0	121,5	450	106,0	106,0
			500	116,0	116,0
			550	105,0	105,0
			600	114,0	113,0
			650	122,0	121,5
			700	112,5	111,0
			750	120,0	118,0
			800	110,0	110,0
			850	117,0	116,0
			900	112,0	108,0
			950	116,0	114,0

Lb = 65 mm

A1	Lb1	Lb2	A2	Lh1	Lh2
700	112,5	113,0	500	118,0	118,0
750	120,0	120,0	550	108,0	106,0
800	112,0	111,0	600	115,0	115,0
850	117,5	117,5	650	124,0	123,0
900	110,0	110,0	700	112,5	113,0
950	117,5	115,0	750	120,0	120,0
1000	121,5	121,0	800	112,0	111,0
			850	117,5	117,5
			900	110,0	110,0
			950	117,5	115,0
			1000	121,5	121,0