

## Knife gate valve

## DN 80-300

The Stafsjö BV knife gate valve is a bi-directional seated valve with full bore. Its main applications are different liquids in water and waste water plants but can also be used in other services.

The BV is designed of a one piece valve body in cast iron with a sealing profile in nitrile. The gate is of stainless steel. The unique Stafsjö box packing TwinPack™ gives high operation reliability.

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

The Stafsjö knife gate valve BV is designed, manufactured, inspected and tested according to the European directive Pressure Equipment Directive (PED 97/23/EC) category II module A1 and is therefore CE marked.



# Knife gate valve

# DN 80-300

### Design data

#### Maximum working pressure body at 20°C

DN	bar
80-300	10

#### Maximum differential pressure at 20°C

DN	bar
80-250	10
300	6

### Basic equipment

#### A. Valve body

	Material	Maximum temp. °C	Not recommended
Cast iron	A GG25	200	Corrosive media

Valve bodies in cast iron are painted electrostatic with powder epoxy colour to thickness 140-200µm.

#### B. Gate

	Body	Material
Stainless steel	A	SS2333

#### C. Sealing profile

		Maximum temp. °C
Nitrile	N	100

#### D. Box packing

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

#### E. Flange drilling

EN 1092 PN 10
ANSI B16.5 Class 150

#### F. Face-to-face dimensions

DIN 3202 K1
-------------

### Actuator

#### Manual

Hand wheel	HW
Ratchet wrench DN 80-150	RW
Chain wheel	CW
Bevel gear	BG

#### Automatic

Pneumatic cylinder	AC
Electrical motor	EM
Hydraulic cylinder	MH

#### Pneumatic cylinder – recommended sizes at 5 bar air pressure

DN	80	100	125	150	200	250	300
AC	100-100	100-100	100-150	100-150	160-250	160-250	160-300
Maximum force (kN)	3,5	3,5	3,5	3,5	9,0	9,0	9,0

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

#### Electric motor – recommended sizes with AUMA multi-turn

DN	80	100	125	150	200	250	300
AUMA	SA 07.1	SA 07.1	SA 07.1	SA 07.1	SA 07.5	SA 07.5	SA 10.1
Attachment	F10/A	F10/A	F10/A	F10/A	F10/A	F10/A	F10/A

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

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

## Knife gate valve

**DN 80-300**

### 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 Stafsjö or your local representative.

### Valve capacity $K_v$

$K_v$ -value for water at 15°C

DN [mm]	$K_v [ \frac{m^3/h}{\sqrt{bar}} ]$	Fully open valve / Bore [mm <sup>2</sup> ]
80	850	5 027
100	1 545	7 854
125	2 600	12 272
150	3 650	17 671
200	7 300	31 416
250	11 680	49 087
300	18 650	70 686

### Pressure tests

Pressure tests are performed with water at 20°C according to ISO 5208 meaning:  
 1,5 x maximum working pressure for open valve – shell test  
 1,1 x maximum differential pressure for closed valve – obturator tightness test

### Leakage rate

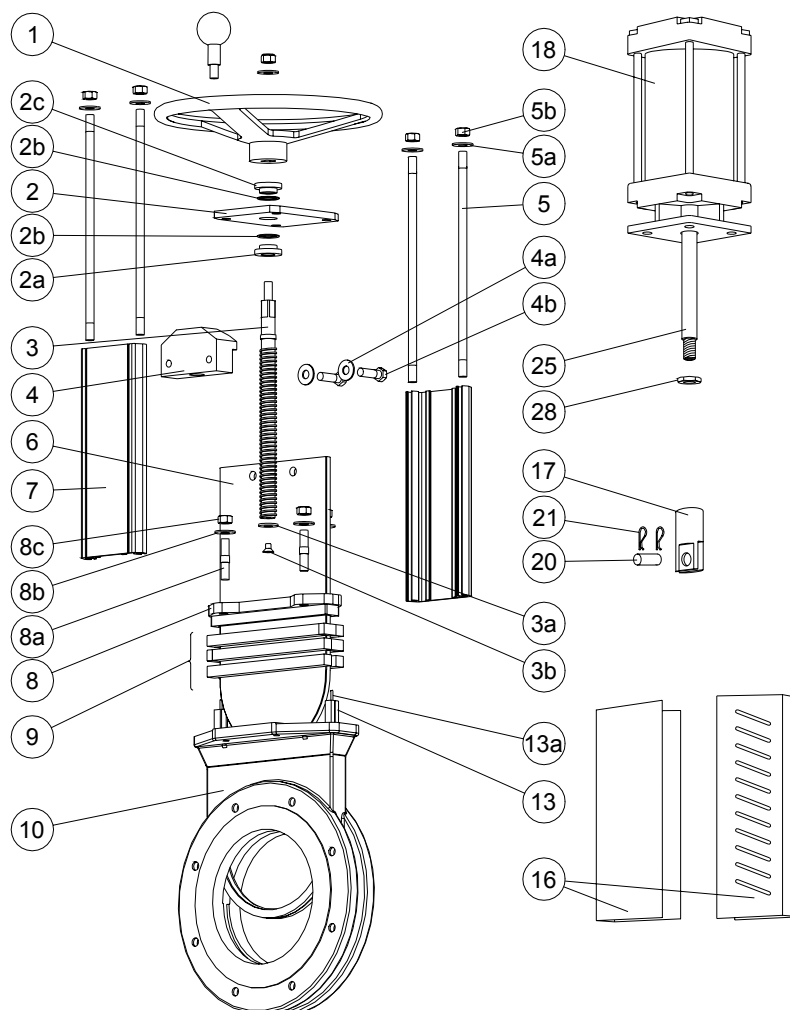
Rate A according to ISO 5208 – no visible leakage for the duration of the test  
 TAPPI TIS 405-8, MSS SP-81

### Materials – corresponding foreign materials

Stafsjö 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				
GG25	Cast iron	SS0125-00	0.6025	GG 25	A 48 No 40 B			Grade 260	FC 250
GGG50	Nodular iron	SS0727	0.7050	GGG 50				Grade 500/7	FCD 500
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

### Knife gate valve

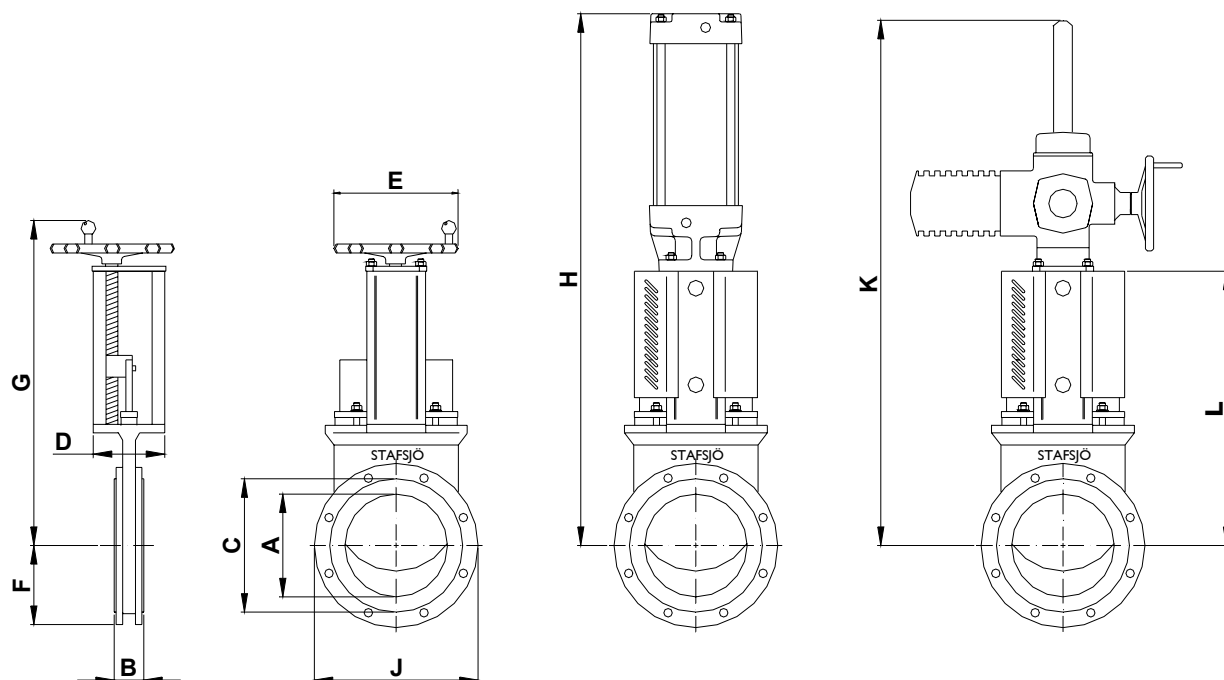
### DN 80-300



Pos	Part	Material
1	Hand wheel	Aluminium EN AC-AISI9Cu3(Fe)
2	Yoke	Stainless steel SS2333-02
2a	Bearing	Brass SS5170-00
2b	Slide washer	POM
2c	Bearing	Brass SS5170-00
3	Stem	Stainless steel SS2320-02
3a	Stop washer	Stainless steel SS2320-02
3b	Screw	A2
4	Stem nut	Brass SS5170-00
4a	Washer	A2
4b	Screw	A2
5	Tie rod	Stainless steel SS2333-02
5a	Washer	A2
5b	Nut	A2
6	Gate	See equipment B
7	Beam	Aluminium EN AW-6063-T6

Pos	Part	Material
8	Gland	Cast iron GG25
8a	Stud bolt	A2 + zinc
8b	Washer	A2
8c	Nut	A2 + zinc
9	Box packing*	See equipment D
10	Valve body	See equipment A
13	Sealing profile*	See equipment C
13a	Steel wire*	Stainless steel
16	Gate guard, not for HW	Stainless steel SS2333-02
17	Gate clevis	Stainless steel SS2346-02
18	Cylinder	See data sheet
20	Clevis pin	Stainless steel SS2346-02
21	Split pin	Stainless steel SS2343-02
25	Piston rod	Stainless steel SS2383-02
28	Locking nut	Stainless steel SS2346-02

\* Recommended spare parts



### Dimensions (mm)

DN	80		100	125	150	200		250	300	
	PN 10	ANSI Class 150	PN 10/ ANSI	PN 10/ ANSI	PN 10/ ANSI	PN 10	ANSI Class 150	PN 10/ ANSI	PN 10	ANSI Class 150
A	80	80	100	125	150	200	200	250	300	300
B	46	51	52	56	56	60	70	68	78	78
C	126	126	151	182	212	262	262	324	368	368
D	80	80	80	80	80	145	145	145	145	145
E	200	200	200	200	200	315	315	315	315	315
F	100	100	115	127	143	172	172	203	223	223
G	349	349	394	502	560	699	699	801	904	904
H	547	547	592	692	750	1017	1017	1115	1275	1275
J	200	200	229	254	285	343	343	406	445	483
K	692	692	764	837	920	1120	1120	1270	1425	1425
L	277	277	322	372	430	560	560	660	765	765

Actuator EM is rotated 45° for DN 80-150.

### Weight, valve incl. hand wheel (HW)

DN	80	100	125	150	200	250	300
kg	12	15	21	26	42	58	80

