

Stafsjö
SINCE 1666

WB

Knife gate valve WB

Stafsjö's knife gate valve WB offers superior flow characteristics and bi-directional zero leakage shut-off. It is suitable for fluids such as water, sludge, bio mass and light slurry.

The WB valve is modular designed and it can easily be customized in materials, with actuators and related automation accessories to different process conditions. It is supplied with a one piece valve body in nodular iron up to DN 600 and from DN 700 it features a rigid two piece version.

Other WB versions are the semi lugged WB11 in DN 50 - DN 300, fully lugged WB14 in DN 50 - DN 600 and WB12 in DN 150 - DN 200 which has square fully flanged valve body. The WB14E is a high performance stainless steel version.



Product features



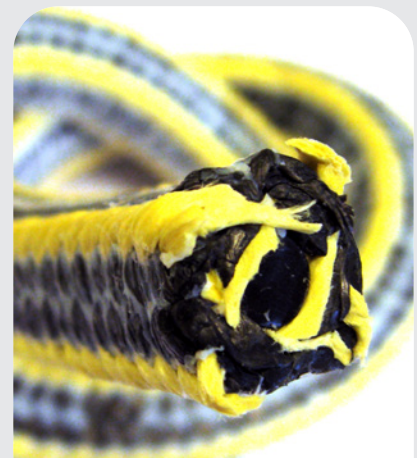
Superior flow characteristics

A cavity free full bore with a seat in level with the bore ensure minimal pressure drop and prevent any build up of media during operation.



Bi-directional zero leakage shut-off

The highly polished gate with the dual bevel edge can easily cut through fluids. Casted gate supports in the bore and a steel reinforced resilient perimeter seat ensure a tight shut-off in both directions.



A first-rate external sealing

A gland box supplied with three layers of our TwinPack, which is specially developed and made for Stafsjö's valves, secures that no media reaches the surrounding environment.

Pressure class

Max working pressure at 20 °C		Max differential pressure at 20 °C	
DN	bar	DN	bar
350 - 400	6	350 - 400	6
500 - 1200	4	500 - 1200	4
1400 - 1600	2	1400 - 1600	2

WB configurations

Standard

Sizes: DN 350 (14") - DN 1600 (64")

Valve body: Nodular iron EN 5.3105

Gate: Stainless steel EN 1.4301, AISI 304

Box packing: TwinPack

Top works: Stainless steel tie rods encapsulated in aluminum beams up to DN 600 and coated steel beams on larger including gate guards on automated valves

Seat, actuator, flange drilling and accessories available from options.

Options

Valve body

Nodular iron EN 5.3105

Gate materials and surface treatments

Stainless steel EN 1.4301, AISI 304

Stainless steel EN 1.4404, AISI 316L

Duplex stainless steel EN 1.4462, S32205

Hard chromed surface

Seats

EPDM or Nitrile

Box packings

TwinPack

Extra scrapers in UHMW-PE

Top works

Stainless steel tie rods encapsulated in aluminium beams

Stainless steel pillars or beams

Actuators

Hand wheel with non-rising stem

Chain wheel

Bevel gear

Double-acting pneumatic cylinders

Single-acting pneumatic cylinders

Electric actuators

Hydraulic actuator

Flange drillings

EN 1092 PN 10

≥ DN 700: ASME B16.47 Class 150 series A, AS 2129 Table D and E

Accessories

Limit switches, solenoid valves, mechanical lockouts, stem extensions etc. See 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 before delivery in opened and closed position with water at 20 °C according to EN 12266-1:2009 rate A. No visually detectable leakage is allowed for duration of the test.

On request 2.2 test report and 3.1 inspection certificate.

Corrosion protection

Non-corrosive resistant materials are coated in colour RAL5015 as standard to fulfill the requirements in EN ISO 12944 class C3. Optional coatings include EN ISO 12944 class C4 or C5.

ATEX designs

On request directive 2014/34/EU Group II category:

3 G/D (zone 2 or 22)

2 G/D (zone 1 or 21)

1 D (Zone 20)

Seat service temperatures

Nitrile: -25 °C - +100 °C

EPDM: -25 °C - +120 °C

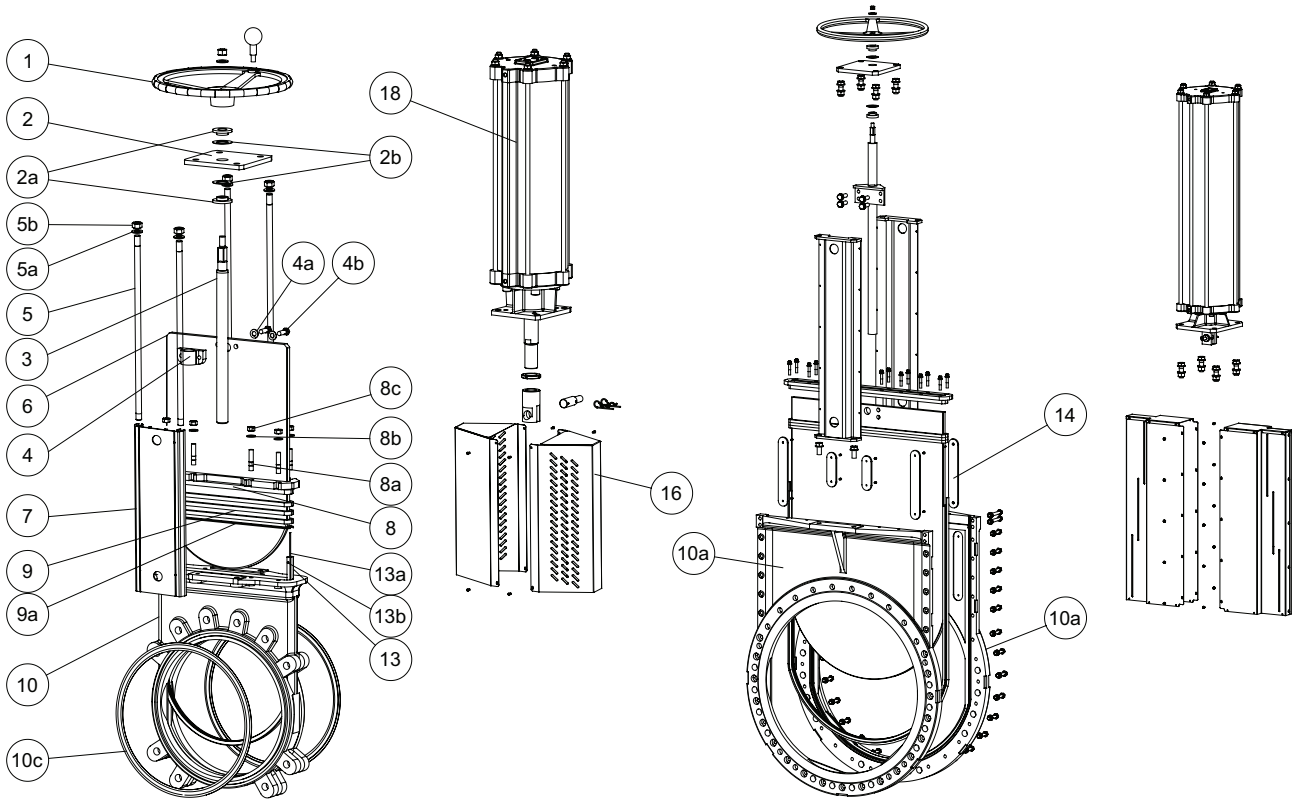
Box packing service temperatures

TwinPack: -60 - +260 °C

Media type, pressure and operating intervals may also affect the seat and box packing material in different ways. Contact Stafsjö for advice.

One piece valve body ≤ DN 600

Two piece valve body ≥ DN 700



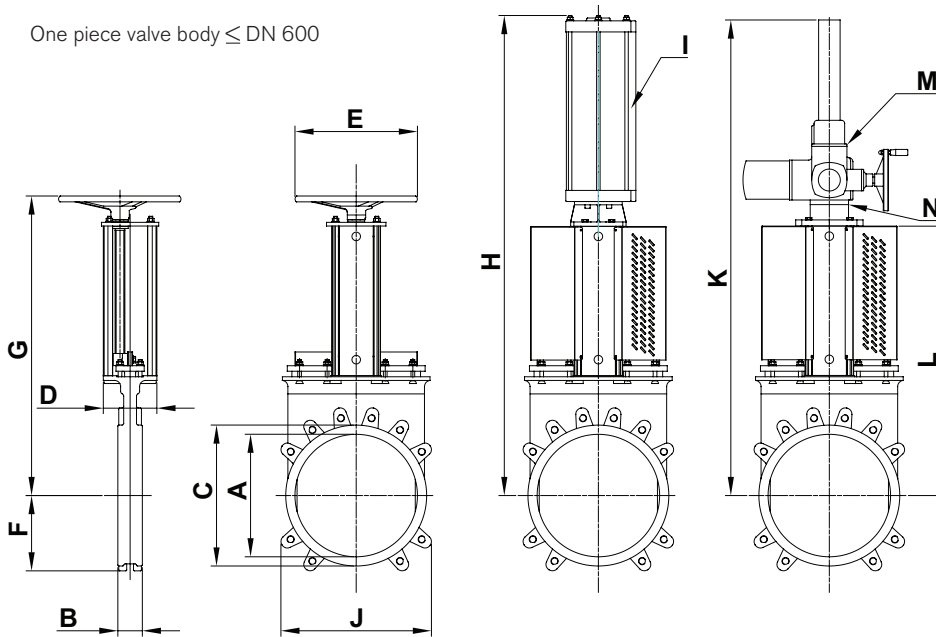
Part list

Pos.	Part	Material (Name)
1	Hand wheel	Coated cast iron Ø 200 - Ø 315 EN-JL 1040, GG25, ≥ Ø 400 EN-JL1030, GG20
2	Yoke	Coated steel (EN 1.0038)
2a	Bearing	Brass (CuZn39Pb3)
2b	Slide Washer	POM
3	Stem	Stainless steel (EN 1.4016)
4	Stem Nut	Brass (CuZn39Pb3)
4a	Washer	Stainless steel (A2)
4b	Bolt	Stainless steel (A2)
5	Tie rod	≤ DN 600: Stainless steel (EN 1.4301)
5a	Washer	≤ DN 600: Stainless steel (A2)
5b	Nut	≤ DN 600: Stainless steel (A2)
6	Gate	See options on page 3
7	Beam	Aluminium (EN AW-6063-T6) ≥ DN 700: Coated steel (EN 1.0038)
8	Gland	Coated nodular iron (EN-JS1050 (GGG50)) or coated carbon steel (ASTM A216 grade WCB)

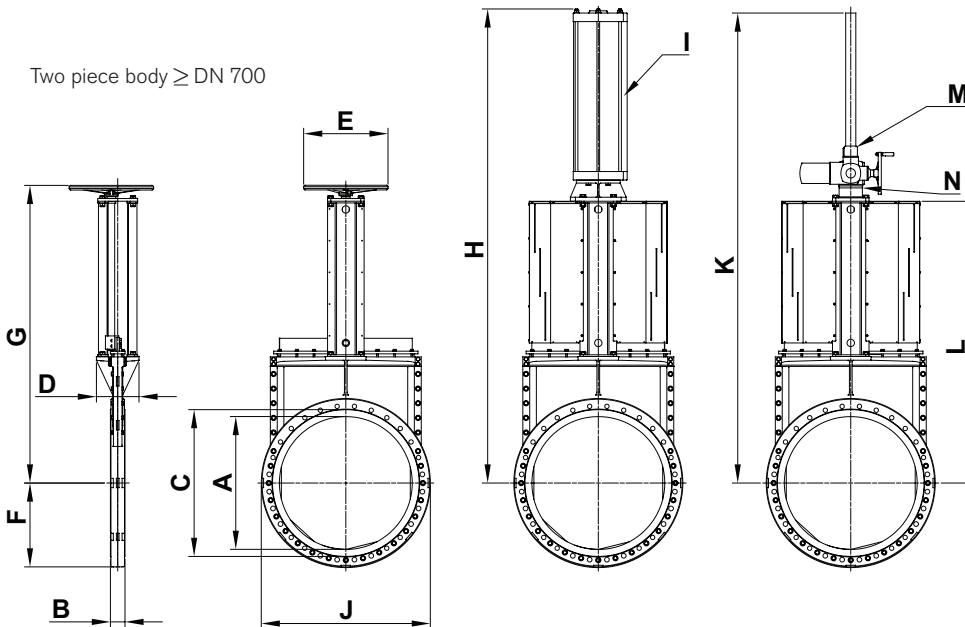
Pos.	Part	Material (Name)
8a	Stud bolt	Stainless steel (A2)
8b	Washer	Stainless steel (A2)
8c	Nut	Stainless steel (A2)
9 ⁵⁾	Box packing	See options on page 3
9a ⁵⁾	Box bottom scraper	≤ DN 600 UHMW-PE
10/a	Valve body	See options on page 3
10c ⁵⁾	Flange sealings	Only on ≤ DN 600 Nitrile
13 ⁵⁾	Seat	See options on page 3
13a ⁵⁾	Pin long	Stainless steel (EN 1.4301)
13b ⁵⁾	Pin short	Stainless steel (EN 1.4301)
14	Guiding pads	POM-C
16	Gate guards	Stainless steel (EN 1.4301) ≥ DN 700: Coated steel (EN 1.0038)
18	Cylinder	See product data sheet

⁵⁾Recommended spare parts

One piece valve body \leq DN 600



Two piece body \geq DN 700



Main dimensions (mm)

DN	A	B	C	D	E	F	G	H	I ¹⁾	J	K	L	M ²⁾	N ³⁾	W ⁴⁾
350	350	80	407	187	400	245	880	1543	SC200	490	1228	783	SA 10.2	F10/A	81
400	400	80	460	187	400	246	977	1640	SC200	490	1375	880	SA 10.2	F10/A	106
500	500	90	566	262	520	284	1225	2102	SC250	617	1706	1106	SA 10.2	F10/A	185
600	600	100	682	262	635	341	1429	2300	SC250	729	2011	1310	SA 10.2	F10/A	275
700	700	110	784	320	635	463	1647	2606	SC320	925	2643	1528	SA 14.2	F14/A	550
800	800	110	893	320	635	520	1857	3016	SC320	1040	2953	1738	SA 14.2	F14/A	605
900	900	110	999	320	635	574	2049	3207	SC320	1148	3244	1929	SA 14.6	F14/A	750
1000	1000	110	1104	320	635	631	2238	3532	SC320	1262	3535	2139	SA 14.6	F14/A	910
1200	1200	150	1316	500	-	749	-	-	-	1490	4297	2597	SA 16.2	F16/A	1800
1400	1400	170	1535	500	-	868	-	-	-	1735	4905	3063	SA 16.2	F16/A	2400
1600	1600	170	1720	500	-	980	-	-	-	1960	5418	3473	SA 16.2	F16/A	3100

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

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

3) Valve and Auma SA interface. The electric motors are mounted as standard according to ISO 5210 connection A (rising stem).

4) Weight in kg for valve equipped with hand wheel and electric actuator on DN 1200 - DN 1600.

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

Flange drilling according to EN 1092 PN10

DN	350	400	500	600	700	800	900	1000	1200	1400	1600
Bolt circle diameter (mm)	460	515	620	725	840	950	1050	1160	1380	1590	1820
Number of throughgoing bolts	6	6	8	8	10	10	12	12	16	16	18
Number of tapped holes/side	10	10	12	12	14	14	16	16	16	20	22
Bolt size	M20	M24	M24	M27	M27	M30	M30	M33	M36	M39	M45
Bolt lengths ¹⁾ (mm)	18	20	24	24	24	26	26	26	40	45	45

Flange drilling according to ASME/ANSI B16.5 & B16.47 Class 150

DN	350	400	500	600	700	800	900	1000	1200	1400	1600
Bolt circle diameter (mm)	-	-	-	-	863,6	977,9	1085,9	1200,2	1422,4	1651	OR
Number of throughgoing bolts	-	-	-	-	17	17	19	21	21	31	OR
Number of tapped holes/side	-	-	-	-	28	28	32	36	44	48	OR
Bolt size (UNC)	-	-	-	-	1 1/4"-7	1 1/2"-6	1 1/2"-6	1 1/2"-6	1 1/2"-6	1 3/4"-5	OR
Bolt lengths ¹⁾ (mm)	-	-	-	-	24	26	26	26	40	45	OR

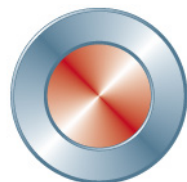
Flange drilling according to AS 2129 Table D

DN	350	400	500	600	700	800	900	1000	1200	1400	1600
Bolt circle diameter (mm)	-	-	-	-	845	984	1092	1175	1410	1615	OR
Number of throughgoing bolts	-	-	-	-	13	13	15	15	21	23	OR
Number of tapped holes/side	-	-	-	-	20	20	24	24	32	36	OR
Bolt size	-	-	-	-	M27	M33	M33	M33	M33	M33	OR
Bolt lengths ¹⁾ (mm)	-	-	-	-	24	26	26	26	40	45	OR

Flange drilling according to AS 2129 Table E

DN	350	400	500	600	700	800	900	1000	1200	1400	1600
Bolt circle diameter (mm)	-	-	-	-	845	984	1092	1175	1410	OR	OR
Number of throughgoing bolts	-	-	-	-	13	13	15	15	21	OR	OR
Number of tapped holes/side	-	-	-	-	20	20	24	24	32	OR	OR
Bolt size	-	-	-	-	M30	M33	M33	M36	M36	OR	OR
Bolt lengths ¹⁾ (mm)	-	-	-	-	24	26	26	26	40	OR	OR

¹⁾ Add the values with the thickness of the pipe flanges, the washers and the estimated thickness of the gasket.



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