

Stafsjö  
SINCE 1666

# Knife gate valve WB

Bi-directional and semi lugged knife gate valve in nodular iron

Size range:

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



# About 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 and bio mass.

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 single piece valve body in nodular iron up to DN 600 and from DN 700 it features a two-piece version.

Other 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.



## 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 flow directions.



## A first-rate seal to atmosphere

Stafsjö's TwinPack offers high mechanical strength, excellent chemical resistance and a tight seal to atmosphere. The TwinPack braid is made up by an elastic silicon rubber core surrounded by diagonally interlocked graphite filled PTFE with aramid fiber reinforced corners. The TwinPack braids resist pH 2-13 and temperatures -60 °C up to 260 °C.



# 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 - 600	4
1400 - 1600	2	700 - 900	2 or 4 <sup>1)</sup>
		1000 - 1200	1 or 2 <sup>1)</sup>
		1400 - 1600	1

## Configurations

### Standard

**Sizes:** DN 350 - DN 1600

**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

### Options

#### Valve body

Nodular iron EN 5.3105

#### Gate materials

Stainless steel EN 1.4301, AISI 304

Stainless steel EN 1.4404, AISI 316L

Duplex stainless steel EN 1.4462, S32205

#### Seats

EPDM or NBR

#### Box packings

TwinPack

Extra scrapers in UHMW-PE

#### Top works

Stainless steel tie rods encapsulated in aluminum beams

Coated steel beams

Stainless steel pillars or beams

#### Actuators

Hand wheel with non-rising stem

Bevel gear

Double-acting pneumatic cylinder

Single-acting pneumatic cylinder

Electric actuator

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 12266-1:2003 rate A. No visually detectable leakage is allowed for duration of the test.

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

Contact Stafsjö for further information on ATEX approved solutions.

#### Corrosion protection

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

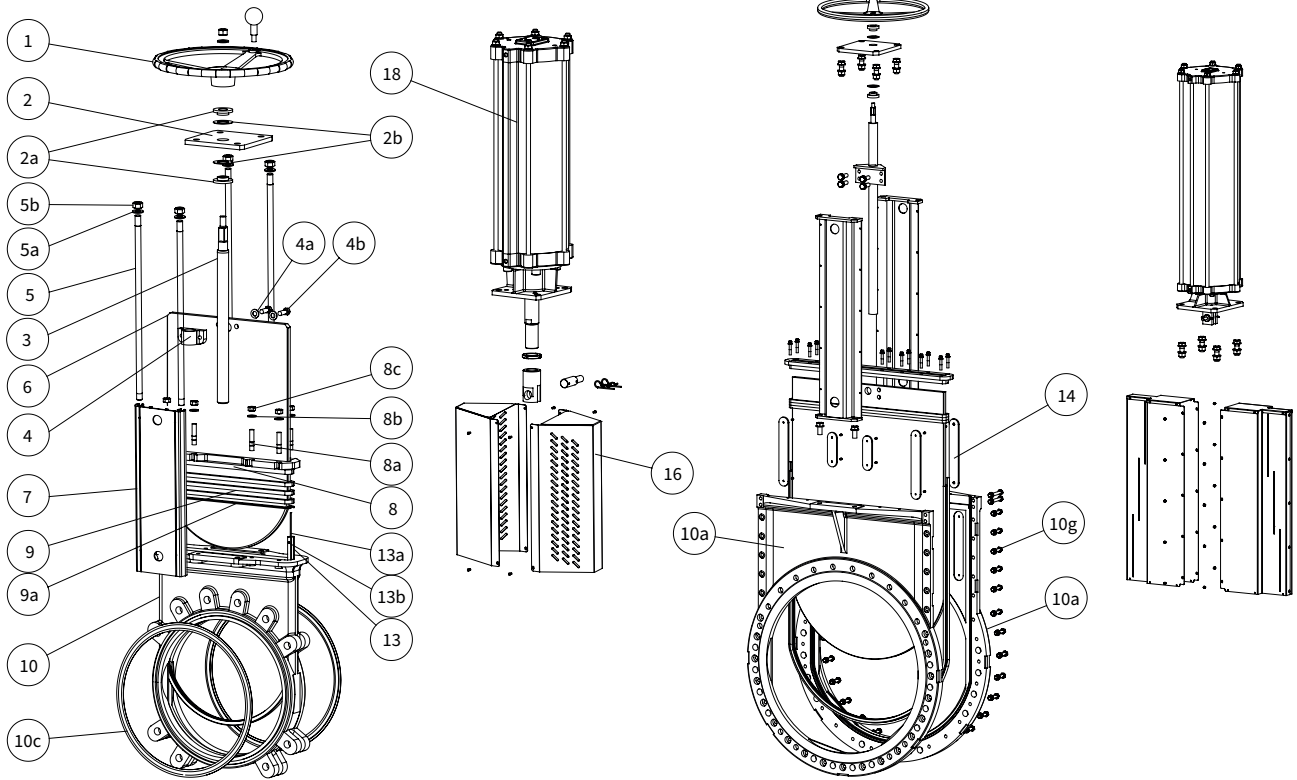
#### Service temperature

Information to determine minimum and maximum temperature for the knife gate valve is available on [stafsjo.com/support/temperatures/](https://stafsjo.com/support/temperatures/).

1) Upgrade to gate in duplex stainless steel EN 1.4462 is required to achieve the higher differential pressure on DN 700 - DN 1200.

Single piece valve body ≤ DN 600

Two-piece valve body ≥ DN 700



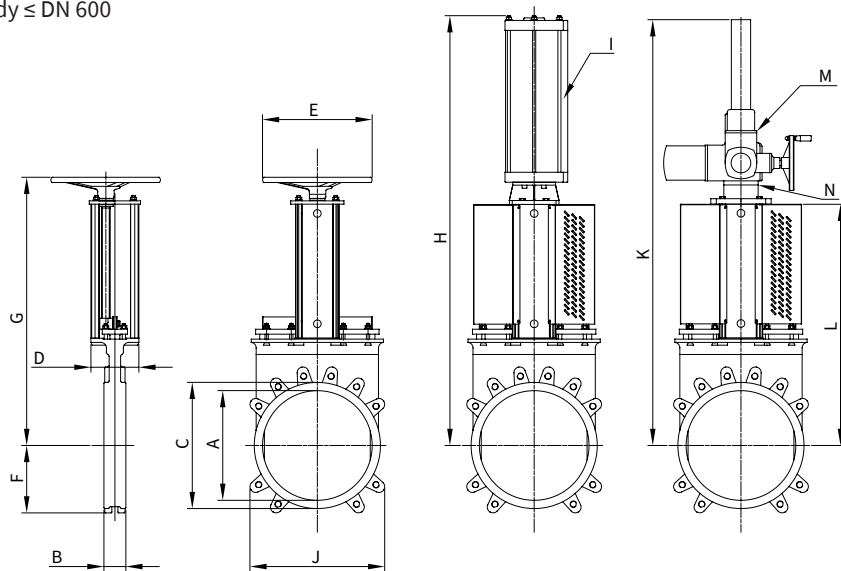
## Part list

Pos.	Part	Material
1	Hand wheel	Coated cast iron Ø 200 - Ø 315 EN-JL1040, GG25, ≥ Ø 400 EN-JL1030, GG20
2	Yoke	Coated steel EN 1.0038
2a	Bearing	Brass
2b	Slide Washer	POM
3	Stem	Stainless steel EN 1.4016
4	Stem Nut	Brass
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 4
7	Beam	Anodized aluminum ≥ DN 700: Coated steel EN 1.0038
8	Gland	Coated nodular iron EN-JS1050, GGG50 or coated carbon steel ASTM A216 grade WCB

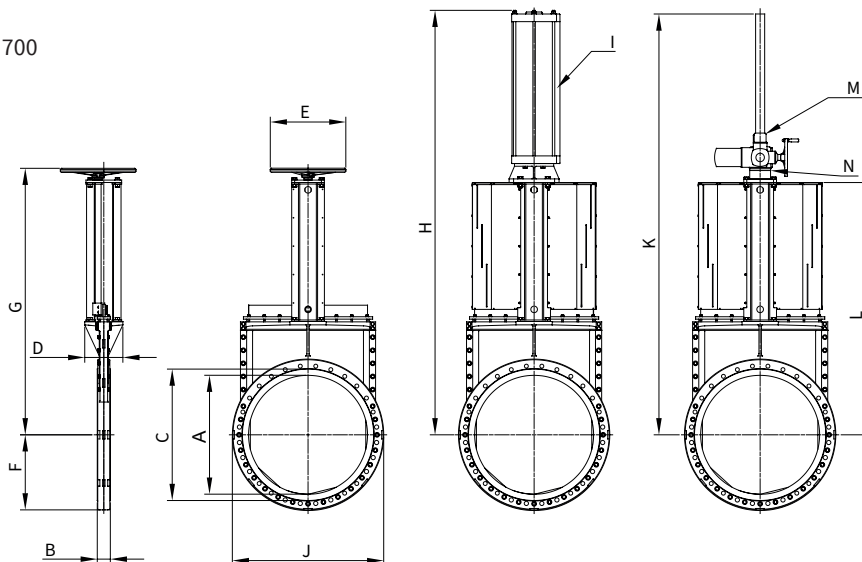
Pos.	Part	Material
8a	Stud bolt	Stainless steel A2
8b	Washer	Stainless steel A2
8c	Nut	Stainless steel A2
9 <sup>5)</sup>	Box packing	See options on page 4
9a <sup>5)</sup>	Box bottom scraper	≤ DN 600 UHMW-PE
10/a	Valve body	Coated nodular iron EN 5.3105
10c <sup>5)</sup>	Flange sealings	≤ DN 600: NBR
10g	Valve body boltings	Zinc plated steel
13 <sup>5)</sup>	Seat	See options on page 4
13a <sup>5)</sup>	Pin long	Stainless steel EN 1.4301
13b <sup>5)</sup>	Pin short	Stainless steel EN 1.4301
14	Guiding pads	≥ DN 700: 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

Single piece valve body ≤ DN 600



Two-piece body ≥ DN 700



## Main dimensions (mm)

DN	A	B	C	D	E	F	G	H	I <sup>1)</sup>	J	K	L	M <sup>2)</sup>	N <sup>3)</sup>	W <sup>4)</sup>
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	1875	1106	SA 14.2	F14/A	185
600	600	100	682	262	635	341	1429	2300	SC250	729	2180	1310	SA 14.2	F14/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 supply 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 with output drive type A (rising stem) according ISO 5210.

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
Boltsize	M20	M24	M24	M27	M27	M30	M30	M33	M36	M39	M45
Bolt lengths <sup>1)</sup> (mm)	18	20	24	24	24	26	26	26	40	45	45

## Flange drilling according to ASME/ANSI 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
Boltsize (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 <sup>1)</sup> (mm)	-	-	-	-	24	26	26	26	40	45	OR

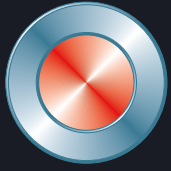
## Flange drilling according to AS 2129 Table D

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
Boltsize	-	-	-	-	M27	M33	M33	M33	M33	M33	OR
Bolt lengths <sup>1)</sup> (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
Boltsize	-	-	-	-	M30	M33	M33	M36	M36	OR	OR
Bolt lengths <sup>1)</sup> (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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