Knife gate valve WB

Stafsjö
SINCE 1666

Knife gate valve WB

Stafsjö's knife gate valve WB is bi-directional tight and has a cavity free full bore with superior flow characteristics. The valve is suitable for fluids, sludge and liquids with solids in suspensions such as water, waste water and bio mass.

The WB valve has a coated valve body in nodular iron with integrated flange gaskets up to DN 600. It is equipped with a gate in stainless steel and a steel reinforced seat in Nitrile or EPDM. The gland box is equipped with Stafsjö's box packing TwinPack™ to secure that no media reaches the surrounding environment. The WB is modular designed and it can easily be supplied with different types of actuators and accessories.

The WB valve is designed, manufactured, inspected and tested according to pressure equipment directive 2014/68/EU category I and II module A2. The valve is CE marked when it is applicable.

Other WB versions are the semi lugged WB11 available up to DN 300 and the fully lugged WB14 available up to DN 600. For square flange connection we are able to supply WB11k with additional tapped holes for this or WB12 which has a square fully flanged valve body.

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 the media. Casted gate supports in the bore and a steel reinforced resilient perimeter seat provides 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.

Design data

Sizes	Flange drilling	Face-to-face dimension	ATEX design	Corrosion protection
DN 350 - DN 1600	DN 350 - DN 1600: **EN 1092 PN 10** ≥ DN 700: **ANSI B16.47 Class 150, series A** **AS 2129 Table D and E**	**Stafsjö manufacturing standard**	**On request directive 2014/34/EU Group II category:** **3 G/D (zone 2 or 22)** **2 G/D (zone 1 or 21)**	**Non-corrosive resistant materials are coated in colour RAL5015 acc. to Stafsjö's standard, which fulfill the requirements in EN ISO 12944 class C3.**

Other sizes, flange drillings, ATEX zones and corrosion protection on request.

Leakage rate	Pressure tests
EN 12266-1:2009 Rate A: no visually detectable leakage is allowed for duration of the test	Pressure tests are performed with water at 20° C according to EN 12266-1:2009. Pressure shell test: 1,5 times maximum allowable working pressure for open valve. Pressure seat tightness test: 1,1 times maximum allowable differential pressure for closed valve.

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
350 - 400	**6**	**350 - 400**	**6**
500 - 600	**4**	**500 - 600**	**4**
700 - 1200	**4 or 6**	**700 - 1200**	**4 or 6**
1400 - 1600	**2 or 4**	**1400 - 1600**	**2 or 4**

Basic equipment

A. Valve body			
Material	Code	Type	Maximum temperature °C
Nodular iron	**L**	**EN 5.3105**	**200**

B. Gate	
Material	Type
Stainless steel	**EN 1.4301 (AISI 304)**
Option:	
Stainless steel	**EN 1.4404 (AISI 316L)**
Duplex stainless steel	**EN 1.4462 (S32205)**

C. Seat		
Material	Code	Maximum temperature °C
Nitrile	**N**	**100**
EPDM	**E**	**120**

D. Box packing		
Material	Code	Maximum temperature °C
TwinPack™	**TY**	**260**

Actuators

Manual	Code	Automatic	Code
Hand wheel[1)]	**HW**	**Pneumatic cylinder**	**EC**
Chain wheel[2)]	**CW**	**Electric motor**	**EM**
Bevel gear[2)]	**BG**	**Hydraulic cylinder**[2)]	**MH**

[1)] *For recommended size, see page 5 column E.*
[2)] *For recommended size, see separate data sheet.*

Double-acting pneumatic cylinder			Electric motor (AUMA multi-turn)		
DN valve	EC type	Force at 5 bar (kN)	DN valve	AUMA type	Attachment
350 - 500	**EC 200**	**14,1**	**350 - 600**	**SA 10.2**	**F10/A**
600	**EC 250**	**22,1**	**700 - 900**	**SA 14.2**	**F14/A**
700 - 1000	**EC 320**	**36,2**	**1000**	**SA 14.6**	**F14/A**
1200 - 1600	**On request**		**1200 - 1600**	**SA 16.2**	**F16/A**

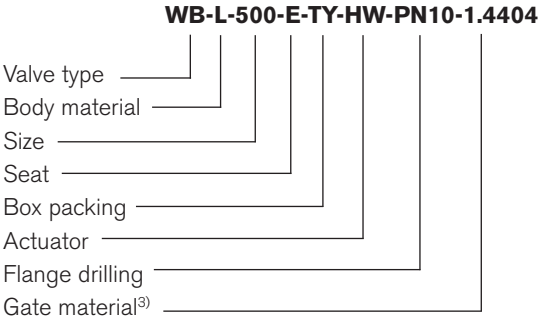
The table above gives recommended cylinder sizes at normal operation with 5 bar air pressure. For other operating conditions, please contact Stafsjö or your local representative for advice.

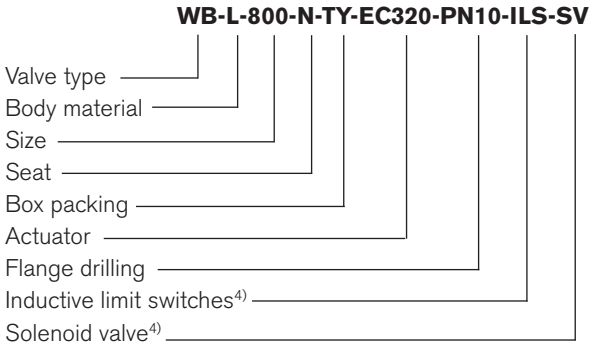
Electric motors are mounted according to standard ISO 5210. The table above gives recommended motor sizes at normal operation. For other operating conditions, please contact Stafsjö or your local representative for advice.

The actuators are described in separate data sheets. For advice and information on other actuators or on ATEX-classified ones, please contact Stafsjö or your local representative.

Specify the Stafsjö valve

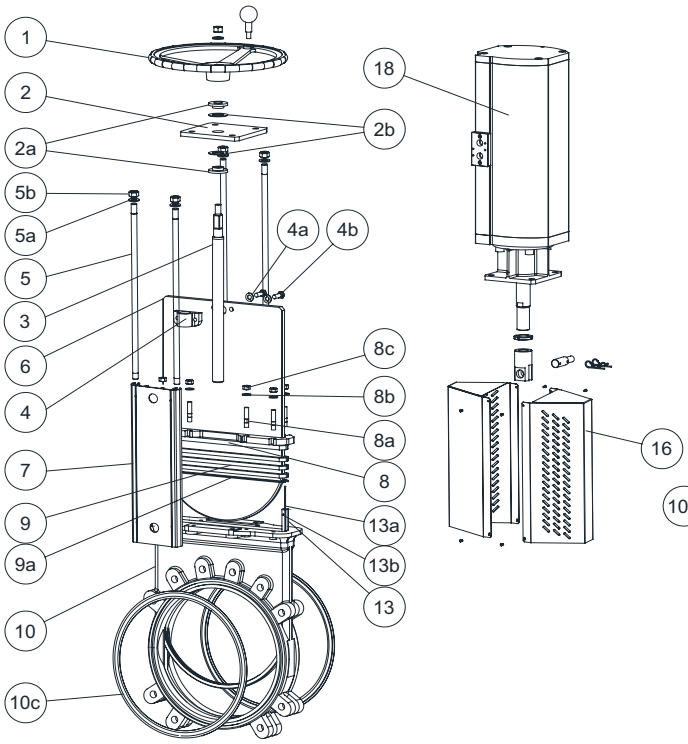
Stafsjö's valves are modular designed and they can easily be customized with gate, sealing profile and box packings according to media and requirements, as well for actuators and accessories. Below are examples of how you can specify your Stafsjö valve. Further information is available on www.stafsjo.com.



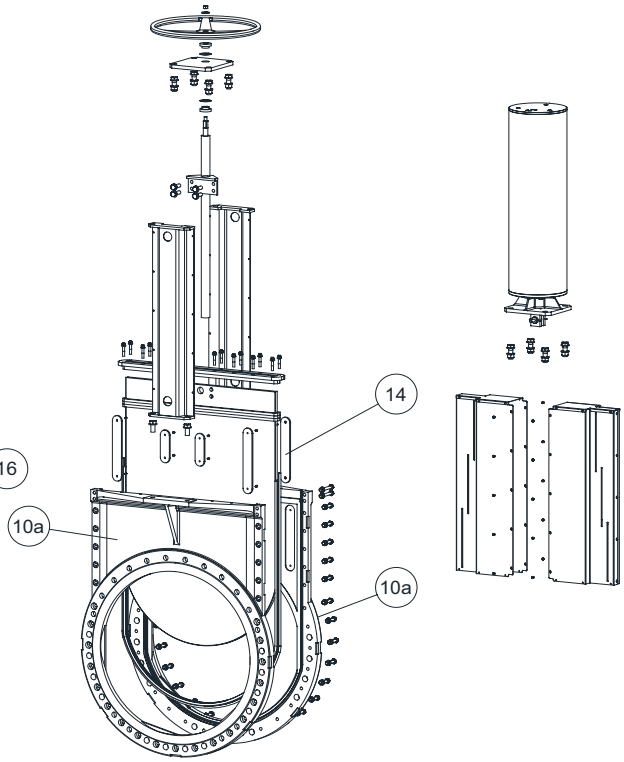


3) Alloy specified if it differ from standard.
4) All electronics must be specified in detail.

One piece valve body ≤ DN 600



Two piece valve body ≥ DN 700



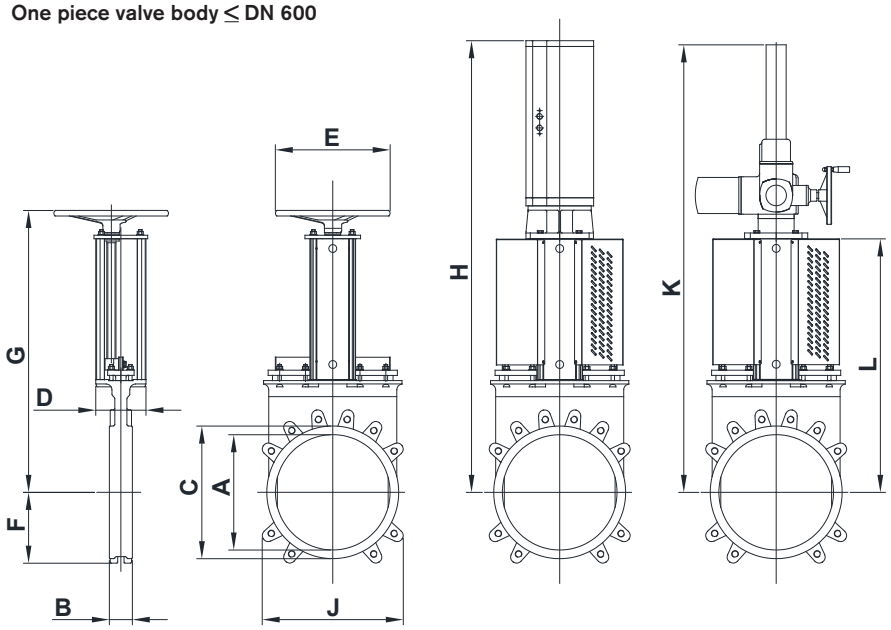
Part list

Pos.	Part	Material (Name)
1	Hand wheel	Coated cast iron (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 equipment B
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)

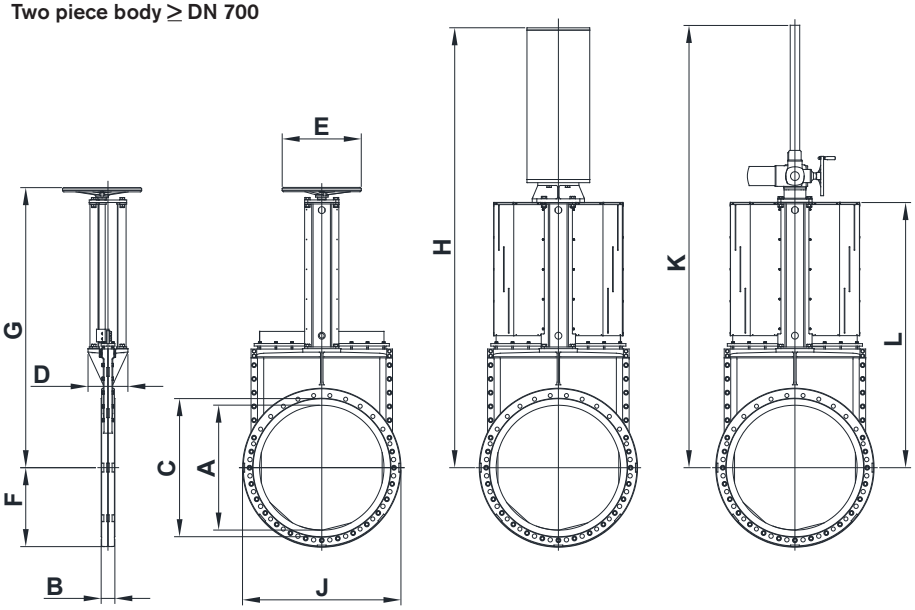
Pos.	Part	Material (Name)
8a	Stud bolt	Stainless steel (A2)
8b	Washer	Stainless steel (A2)
8c	Nut	Stainless steel (A2)
9[5)]	Box packing	See equipment D
9a[5)]	Box bottom scraper	≤ DN 600 UHMW-PE
10/a	Valve body	See equipment A
10c[5)]	Flange sealings	Only on ≤ DN 600 Nitrile
13[5)]	Seat	See equipment C
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 guard, Not for HW	Stainless steel (EN 1.4301) ≥ DN 700: Coated steel (EN 1.0038)
18	Cylinder	See data sheet

[5)] *Recommended spare parts*

One piece valve body ≤ DN 600



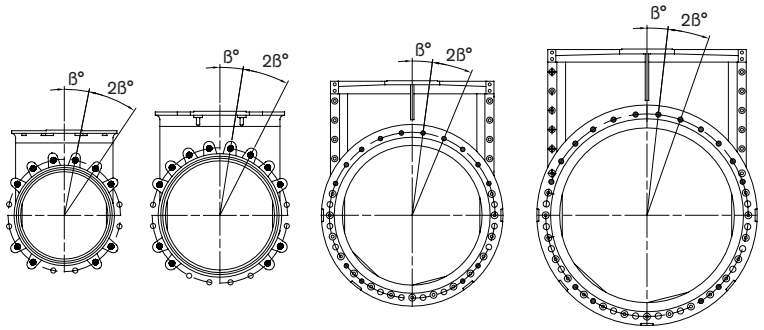
Two piece body ≥ DN 700



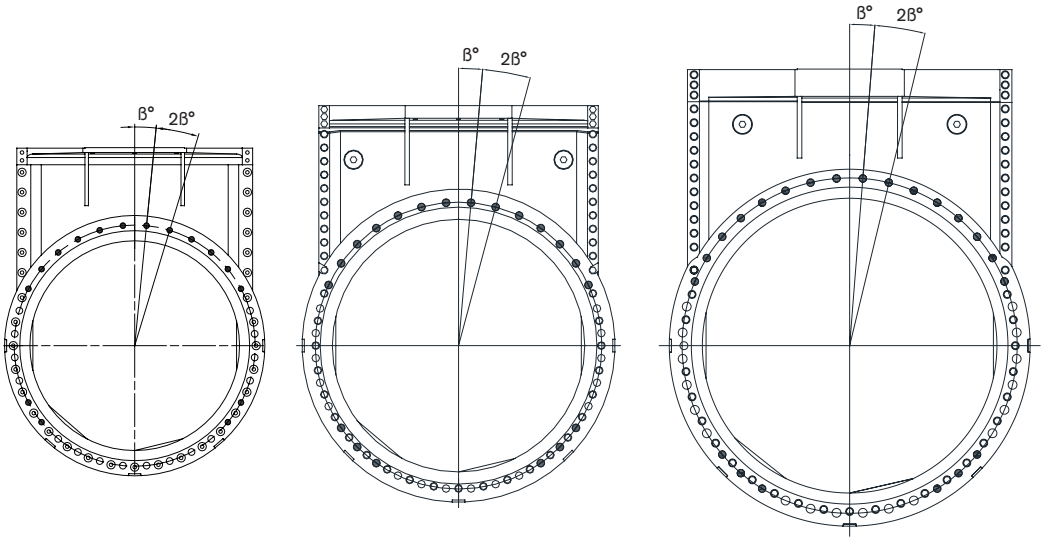
Main dimensions

Dimensions (mm)												
DN	A	B	C	D	E	F	G	H	J	K	L	Weight[6)]
350	**350**	**80**	**407**	**187**	**400**	**245**	**880**	**1470**	**490**	**1228**	**783**	**81**
400	**400**	**80**	**460**	**187**	**400**	**246**	**977**	**1567**	**490**	**1375**	**880**	**106**
500	**500**	**90**	**566**	**262**	**520**	**284**	**1225**	**1893**	**617**	**1706**	**1106**	**185**
600	**600**	**100**	**682**	**262**	**635**	**341**	**1429**	**2184**	**729**	**2011**	**1310**	**275**
700	**700**	**110**	**784**	**320**	**635**	**463**	**1647**	**2482**	**925**	**2643**	**1528**	**550**
800	**800**	**110**	**893**	**320**	**635**	**520**	**1857**	**2884**	**1040**	**2953**	**1738**	**605**
900	**900**	**110**	**999**	**320**	**635**	**574**	**2049**	**3075**	**1148**	**3244**	**1929**	**750**
1000	**1000**	**110**	**1104**	**320**	**635**	**631**	**2238**	**3400**	**1262**	**3535**	**2139**	**910**
1200	**1200**	**150**	**1316**	**500**	**-**	**749**	**-**	**-**	**1490**	**4297**	**2597**	**1800**
1400	**1400**	**170**	**1535**	**500**	**-**	**868**	**-**	**-**	**1735**	**4905**	**3063**	**2400**
1600	**1600**	**170**	**1720**	**500**	**-**	**980**	**-**	**-**	**1960**	**5418**	**3473**	**3100**

6) Weight in kg for valve equipped with hand wheel. DN 1200 - DN 1600 with AUMA SA 16.2.
Main dimensions are only for information. Contact Stafsjö for certified drawings.



DN 350 - DN 400 | DN 500 - DN 600 | DN 700 - DN 800 | DN 900 - DN 1000



DN 1200 | DN 1400 | DN 1600

Flange drilling according to EN 1092 PN10

Flange drilling information (mm)											
DN	350	400	500	600	700	800	900	1000	1200	1400	1600
Outside flange diameter	**505**	**565**	**670**	**780**	**895**	**1015**	**1115**	**1230**	**1455**	**1675**	**1915**
Bolt circle diameter	**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 on each 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**
Size of throughgoing holes in flange	**Ø22**	**Ø26**	**Ø26**	**Ø30**	**Ø30**	**Ø33**	**Ø33**	**Ø36**	**Ø39**	**Ø42**	**Ø48**
β°	**11,25**	**11,25**	**9**	**9**	**7,5**	**7,50**	**6,43**	**6,43**	**5,63**	**5**	**4,5**
Screw lengths[7)]	**18**	**20**	**24**	**24**	**24**	**26**	**26**	**26**	**40**	**45**	**45**

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

○ *Throughgoing holes*

• *Tapped holes*

Further information is available on www.stafsjo.com

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