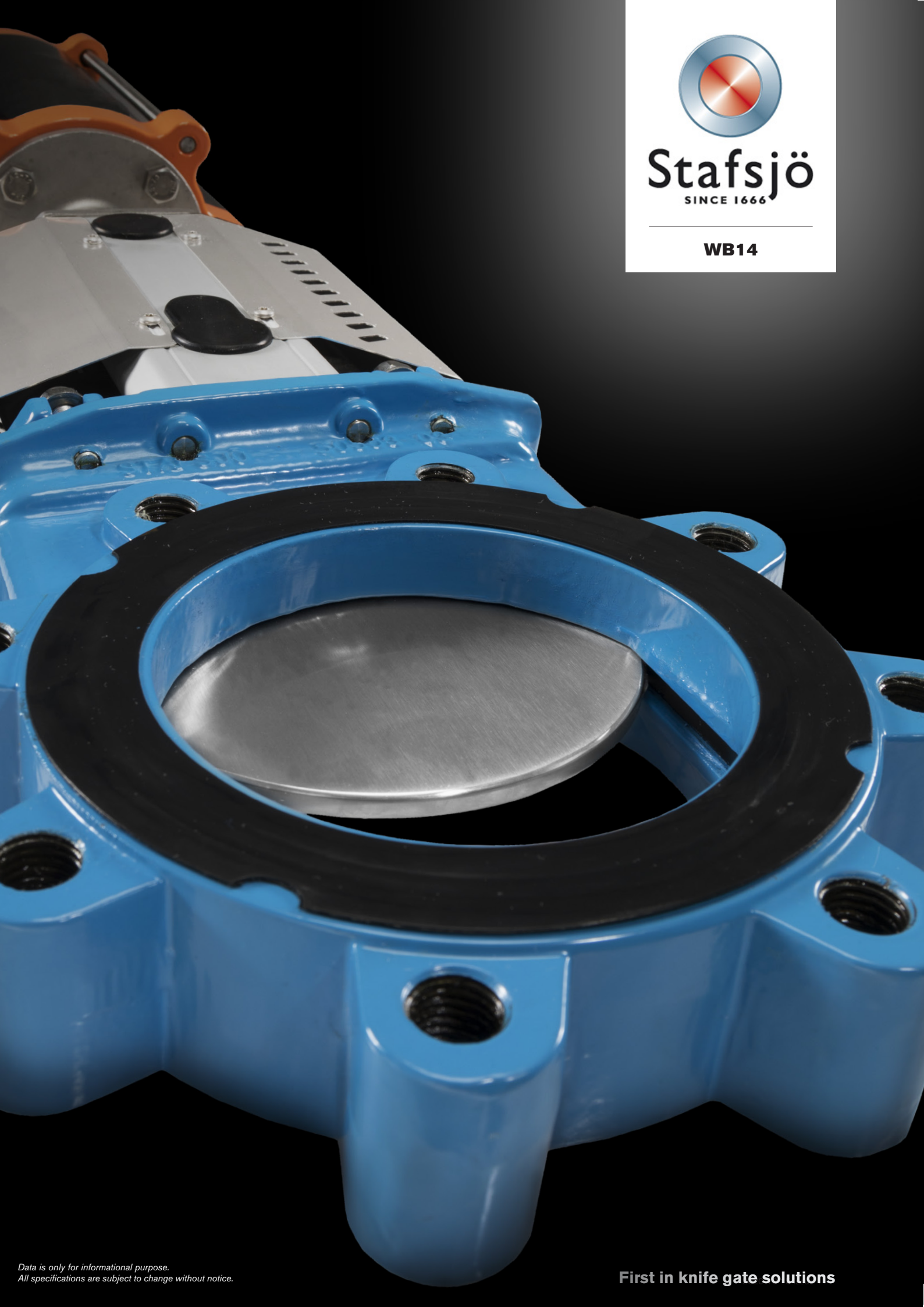


Stafsjö
SINCE 1666

WB14

Data is only for informational purpose.
All specifications are subject to change without notice.

First in knife gate solutions

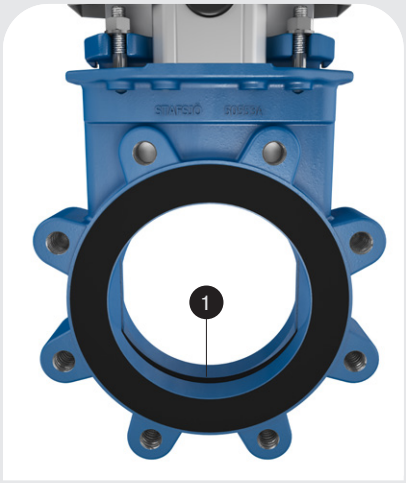
Knife gate valve WB14

Stafsjö's WB14 knife gate valve 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. Integrated flange gaskets simplify installation works and the fully lugged body makes it also suitable for dead-end services.

The WB14 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 robust one piece and fully lugged valve body in nodular iron up to DN 300 and from DN 350 it features a rigid two piece version.

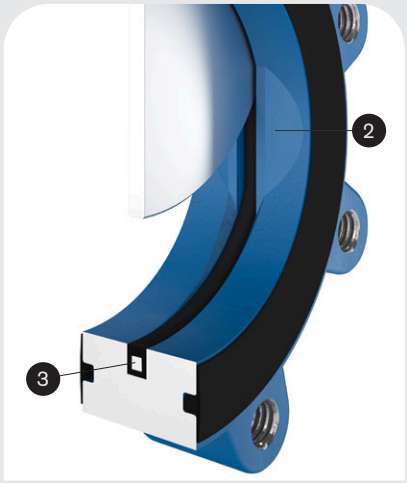
Other WB versions are the semi lugged WB11 in DN 50 - DN 300, WB in DN 350 - DN 1600 and WB12 in DN 150 - DN 200 which has a square fully flanged valve body. The WB14E is a high performance stainless steel version.

Product features



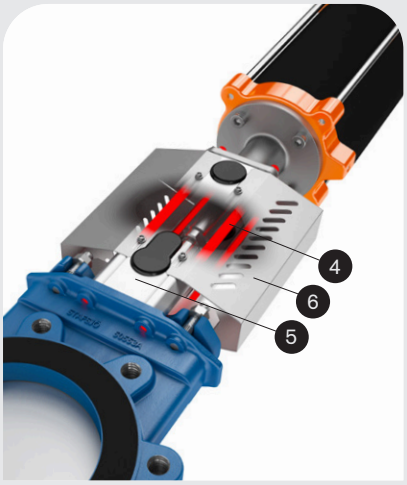
Superior flow characteristics

A cavity free full bore with a seat (1) in level with the bore ensure minimal pressure drop and prevent any build up of media during operation.



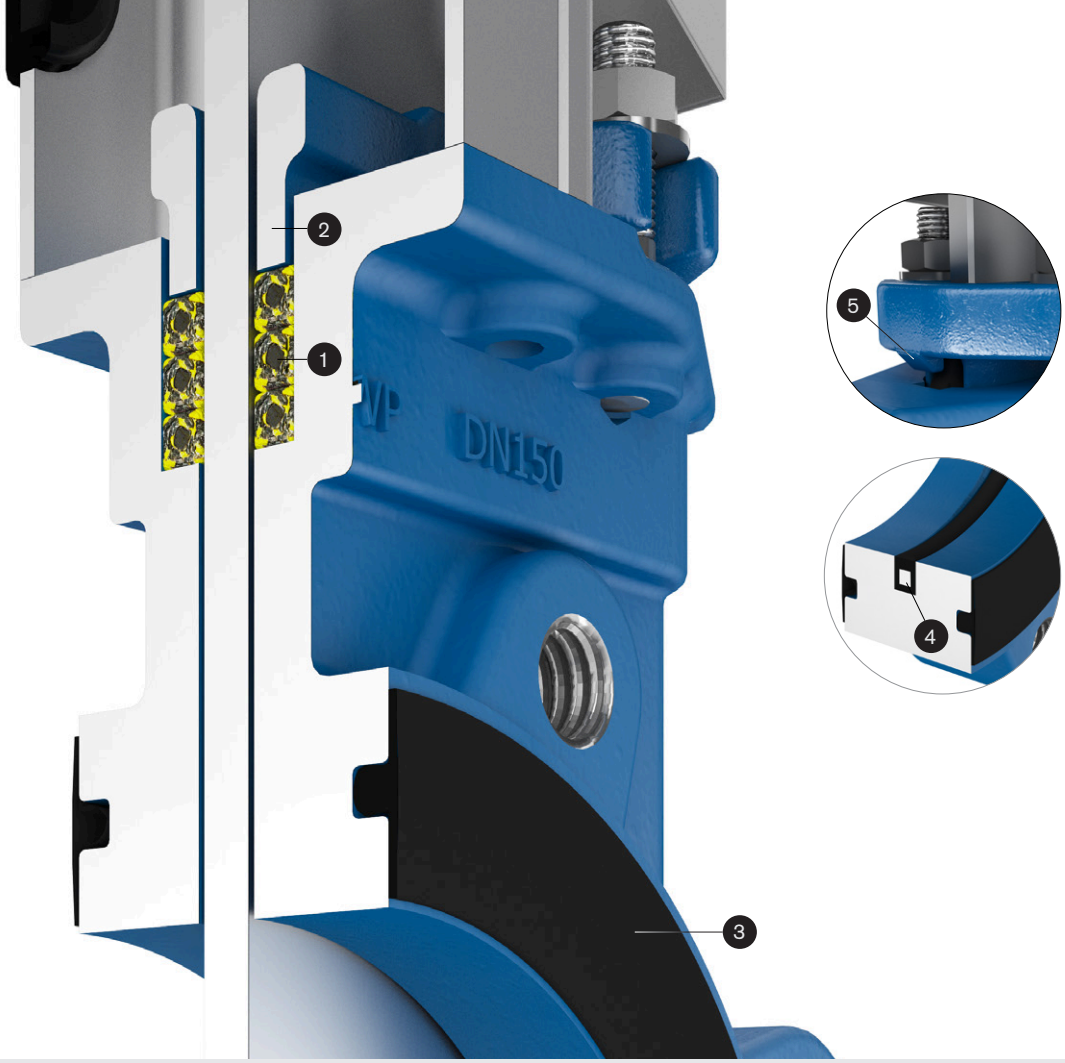
Bi-directional zero leakage shut-off

Casted gate guides (2) support the gate through the entire range of travel and the perimeter resilient seat provides a tight shut-off independent of pressure direction. The steel reinforcement inside the seat (3) make it steady and enhance durability.



High strength top works

Smooth cycling and a tight shut-off independent of valve position is achieved by the high strength top works that provide an essential alignment for the gate. It utilizes stainless steel tie rods (4) encapsulated inside the structural beams (5). Stafsjö assemble stainless steel gate guards (6) as standard on all automated valves.



The WB14 sealing system

The WB14 valve is intented for use in a wide range of applications. A first rate sealing both internal and external is crucial for both plant efficiency and personnel safety. The sealing system consist of several features and components, all working together to perform during long periods of time and to provide a tight shut-off.

Stafsjö's TwinPack braids (1) perform the main external sealing operation in the system and offers high mechanical strength and excellent chemical resistance. It is made up by an elastic silicon rubber core surrounded by interlocked graphite filled PTFE fibres with additional strong interlocked aramide fibre reinforced corners (yellow). The TwinPack braids resist pH 2-13 and temperatures -60 °C up to 260 °C. The gland (2) and gland bolts ensure even distribution of the gland force as the nuts are tightened.

The valves' integrated flange (3) gaskets simplify the installation works and preserve a tight flange sealing.

The perimeter resilient seat guarantee a tight sealing independent of pressure direction and the steel reinforcement (4) makes it steady and enhance durability. The linear locks (5) on the gland up to DN 300 securely hold the steel reinforced seat in position as the gate strokes. From DN 350 the seat is locked between the valve body halves.

The WB14 valve can be supplied with seat in EPDM, Nitrile and the high temperature and chemical resistant FEPM (Fluoroelastomer) material.

FEPM -10 °C - + 180 °C

Excellent resistance to wide range of aggressive chemicals, both acids and bases, and steam at high continuous service temperatures including short term peeks up to + 225 °C

Unsuitable media and service
Limited resistance to mineral and aromatic oils and low temp.

EPDM -25 °C - + 120 °C

An allround durable chemical resistant rubber suitable for rather high media temperatures.

Unsuitable media and service
Petroleum (gasoline, kerosene, oil and grease) and sulphuric acid.

Nitrile -25 °C - + 100 °C

Alternative to EPDM with excellent resistance to petroleum (gasoline, oil, grease).

Unsuitable media and service
Chlorinated solvents, acetone, sulphuric acid, formic acid.

Pressure class

Max working pressure at 20 °C		Max differential pressure at 20 °C	
DN	bar	DN	bar
50 - 600	10	50 - 300	10
		350 - 450	6 or 10
		500 - 600	4 or 10

WB14 configurations

Standard	High pressure 10 bar version
Sizes: DN 50 - DN 600 Valve body: Nodular iron EN 5.3105, EN-JS1050, GGG50 Gate: Stainless steel EN 1.4301, AISI 304 Box packing: TwinPack Top works: Stainless steel tie rods encapsulated in aluminium beams including stainless steel gate guards on automated valves Options and others from below.	Sizes: DN 350 - DN 600 Valve body: Nodular iron EN 5.3105 Gate: Duplex stainless steel EN 1.4462, S32205 Box packing: TwinPack Top works: Stainless steel tie rods encapsulated in aluminium beams including stainless steel gate guards on automated valves Options and others from below.

Options

Valve body
Nodular iron EN 5.3105 (max. + 350 °C), EN-JS1050, GGG50 (max. + 200 °C)

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, Nitrile or FEPM

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
Hand lever[1)]
Ratchet wrench
Bevel gear
Double-acting pneumatic cylinders
Single-acting pneumatic cylinders
Electric actuators
Hydraulic actuator

Flange drillings
EN 1092 PN 10
EN 1092 PN 16
ANSI/ASME B16.5 Class 150
AS 2129 Table D and E

Accessories
Limit switches, solenoid valves, positioners, mechanical lockouts, stem extensions etc. See our accessory data sheet for further information.

Design standards

Face-to-face dimensions
DN 50 - DN 350: EN558-1 series 20 and ISO 5752 series 20
DN 50 - DN 600: MSS-SP81.

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.

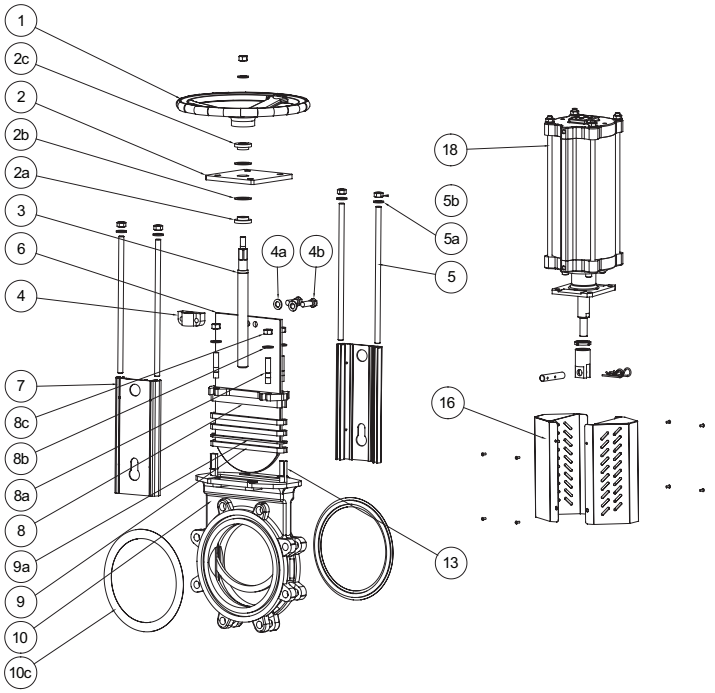
On request 2.2 test report and 3.1 inspection certificate.

Corrosion protection
Coated valve parts fulfill the requirements in EN ISO 12944 class C3 in applicable areas. Optional coatings include EN ISO 12944 class C4 or C5.

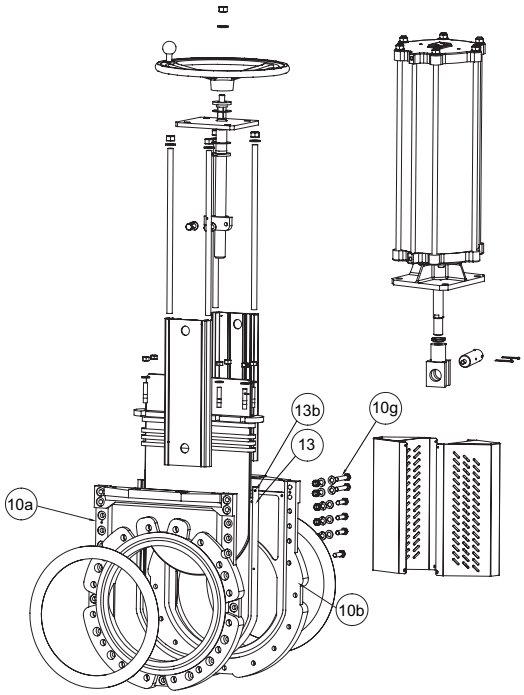
ATEX designs
On request directive 2014/34/EU Group II category:
3 G/D (zone 2 or 22)
2 G/D (zone 1 or 21)
1 D (Zone 20)

1) Pressures according to design data are not valid for valve equipped with hand lever. Maximum working and differential pressure at 20 °C for DN 50 - 100 is 4 bar.

One piece valve body: DN 50 - DN 300



Two piece valve body: DN 350 - DN 600



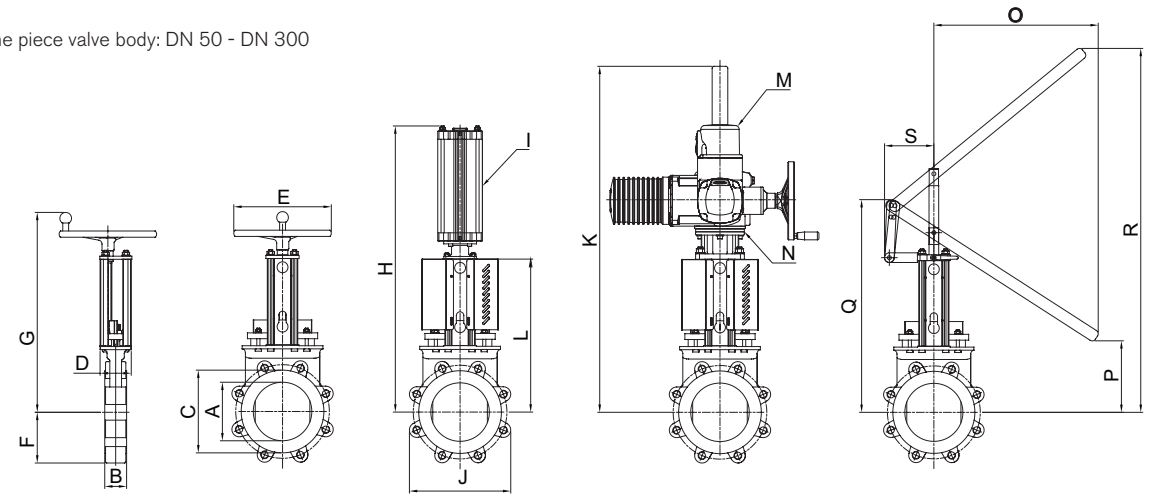
Part list

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
2c	Bearing	Brass
3	Stem	Stainless steel EN 1.4016
4	Stem nut	Brass
4a	Washer	Stainless steel A2
4b	Bolt	Stainless steel A2
5	Tie rod	Stainless steel EN 1.4301
5a	Washer	Stainless steel A2
5b	Nut	Stainless steel A2
6	Gate	See options on page 3

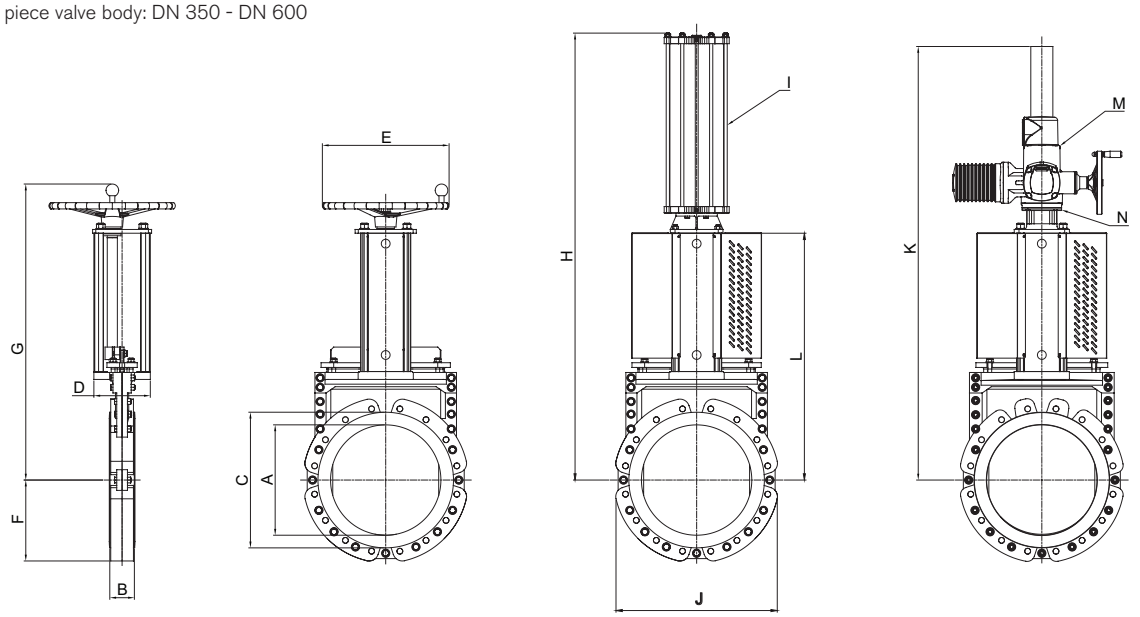
Pos.	Part	Material
7	Beam	Anodized aluminium
8	Gland	Coated carbon steel ASTM A216 WCB, coated nodular iron EN-JS1050, GGG50
8a	Pin Bolt	Stainless steel A2
8b	Washer	Stainless steel A2
8c	Nut	Stainless steel A2
9[1)]	Box packing	See options on page 3
9a[1)]	Box bottom scraper	DN 200 - DN 300 UHMW-PE
10/a/b	Valve body	See options on page 3
10c[1)]	Flange sealing	Nitrile
10g	Valve body boltings	Zinc plated steel
13[1)]	Seat	See options on page 3
13b[1)]	Pin short	Stainless steel EN 1.4301
16	Gate guards	Stainless steel EN 1.4301
18	Pneumatic cylinder	See separate data sheet

1) Recommended spare parts

One piece valve body: DN 50 - DN 300



Two piece valve body: DN 350 - DN 600



Main dimensions (mm)

DN	A	B[1]	B[2]	C	D	E	F	G	H[3]	I[4]	I[5]	J	K	L	M[6]	O	P	Q	R	S	N[7]	kg[8]
50	50	43	48	90	86	200	59	358	526	SC100	-	117	629	227	SA 07.2	499	128	381	419	149	F10/A	7
65	65	46	46	105	86	200	66	382	551	SC100	-	131	654	252	SA 07.2	492	153	407	511	147	F10/A	8
80	80	46	51	120	86	200	88	395	574	SC100	-	176	677	275	SA 07.2	479	176	429	598	144	F10/A	12
100	100	52	52	144	86	200	101	430	609	SC100	-	206	712	310	SA 07.2	635	17	472	653	146	F10/A	15
125	125	56	56	169	86	250	112	470	699	SC100	-	236	752	350	SA 07.2	-	-	-	-	-	F10/A	18
150	150	56	56	192	86	250	130	514	741	SC125	-	260	794	392	SA 07.6	-	-	-	-	-	F10/A	22
200	200	60	70	256	151	315	154	622	954	SC160	-	327	818	483	SA 07.6	-	-	-	-	-	F10/A	37
250	250	69	69	307	151	315	153	718	1155	SC160	-	392	914	579	SA 07.6	-	-	-	-	-	F10/A	55
300	300	78	78	354	151	315	212	822	1251	SC160	-	462	1059	675	SA 10.2	-	-	-	-	-	F10/A	71
350	350	78	78	430	180	400	258	880	1543	SC200	SC200	517	1228	783	SA 10.2	-	-	-	-	-	F10/A	115
400	400	-	89	482	180	400	288	977	1640	SC200	SC250	576	1375	880	SA 10.2	-	-	-	-	-	F10/A	155
450	450	-	89	532	250	520	314	1153	1896	SC200	SC250	628	1736	1034	SA 10.2	-	-	-	-	-	F10/A	230
500	500	-	114	586	250	520	340	1225	2102	SC250	SC250	680	1875	1113	SA 14.2	-	-	-	-	-	F14/A	270
600	600	-	114	686	250	520	409	1436	2307	SC250	SC320	818	2180	1317	SA 14.2	-	-	-	-	-	F14/A	400

1) Face-to-face dimension according to EN558-1 series 20/ISO 5752 series 20 for valves DN 50 - DN 350 with flange drilling according to EN 1092 PN 10, EN 1092 PN 16, AS 2129 Table D and E.
2) Face-to-face dimension according to MSS-SP81 for valves DN 50 - DN 600 valves with flange drilling according to ASME/ANSI B 16.5 Class 150 and for valves DN 350 - DN 600 with flange drilling according to EN 1092 PN 10, EN 1092 PN 16, AS 2129 Table D and E.
3) Dimensions for standard pressure rated valve.
4) Recommended sizing of double-acting pneumatic cylinder type SC at normal operation with 5 bar air pressure. For other operating conditions, contact Stafsjö for advice.
5) Recommended sizing of double-acting pneumatic cylinder type SC at normal operation with 5 bar air pressure to high pressure 10 bar version DN 350-DN 600. For other operating conditions, contact Stafsjö.
6) Recommended sizing of Auma SA motors at normal operation. For other operating conditions, contact Stafsjö or your local representative for advice.
7) Valve and Auma SA interface. The electric motors are mounted as standard according to ISO 5210 connection A (rising stem).
8) Weight in kg for valve equipped with hand wheel.
Main dimensions are only for information. Contact Stafsjö for certified drawings.

Flange drilling according to EN 1092 PN10

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Bolt circle diameter (mm)	125	145	160	180	210	240	295	350	400	460	515	565	620	725
Number of throughgoing bolts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	4	8	8	8	8	8	12	12	16	16	20	20	20
Boltsize	M16	M16	M16	M16	M16	M20	M20	M20	M20	M20	M24	M24	M24	M27
Bolt lengths[1] (mm)	12	12	11	15	15	15	18	20	21	22	27	27	35	32

Flange drilling according to EN 1092 PN16

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Bolt circle diameter (mm)	125	145	160	180	210	240	295	355	410	470	525	585	650	770
Number of throughgoing bolts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	4	8	8	8	8	12	12	12	16	16	20	20	20
Boltsize	M16	M16	M16	M16	M16	M20	M20	M24	M24	M24	M27	M27	M30	M33
Bolt lengths[1] (mm)	12	12	11	15	15	15	18	20	21	22	27	27	35	32

Flange drilling according to ASME/ANSI B 16.5 Class 150

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Bolt circle diameter (mm)	120,6	139,7	152,4	190,5	215,9	241,3	298,4	361,9	431,8	476,3	539,8	577,9	635	749,3
Number of throughgoing bolts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	4	4	8	8	8	8	12	12	12	16	16	20	20
Boltsize	5/8-11	5/8-11	5/8-11	5/8-11	3/4-10	3/4-10	3/4-10	7/8-9	7/8-9	1"-8	1"-8	1 1/8"-7	1 1/8"-7	1 1/4"-7
Bolt lengths[1] (mm)	15	12	14	15	15	15	23	20	21	22	27	27	35	32

Flange drilling according to AS 2129 Table D

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Bolt circle diameter (mm)	114	127	146	178	210	235	292	356	406	470	521	584	641	756
Number of throughgoing bolts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	4	4	4	8	8	8	8	12	12	12	12	16	16
Boltsize	M16	M16	M16	M16	M16	M16	M16	M20	M20	M24	M24	M24	M24	M27
Bolt lengths[1] (mm)	12	12	11	15	15	15	18	20	21	22	27	27	35	32

Flange drilling according to AS 2129 Table E

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Bolt circle diameter (mm)	114	127	146	178	210	235	292	356	406	470	521	584	641	756
Number of throughgoing bolts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	4	4	8	8	8	8	12	12	12	12	16	16	16
Boltsize	M16	M16	M16	M16	M16	M20	M20	M20	M24	M24	M24	M24	M24	M30
Bolt lengths[1] (mm)	12	12	11	15	15	15	18	20	21	22	27	27	35	32

[1] Add the values with the thickness of the pipe flanges and the washers.

Stafsjö
SINCE 1666

www.stafsjo.com

Stafsjö Valves AB
SE-618 95 Stavsjö, Sweden

+46 11 39 31 00 | info@stafsjo.se
www.stafsjo.com