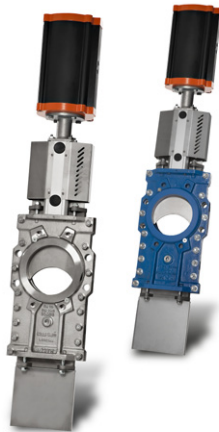
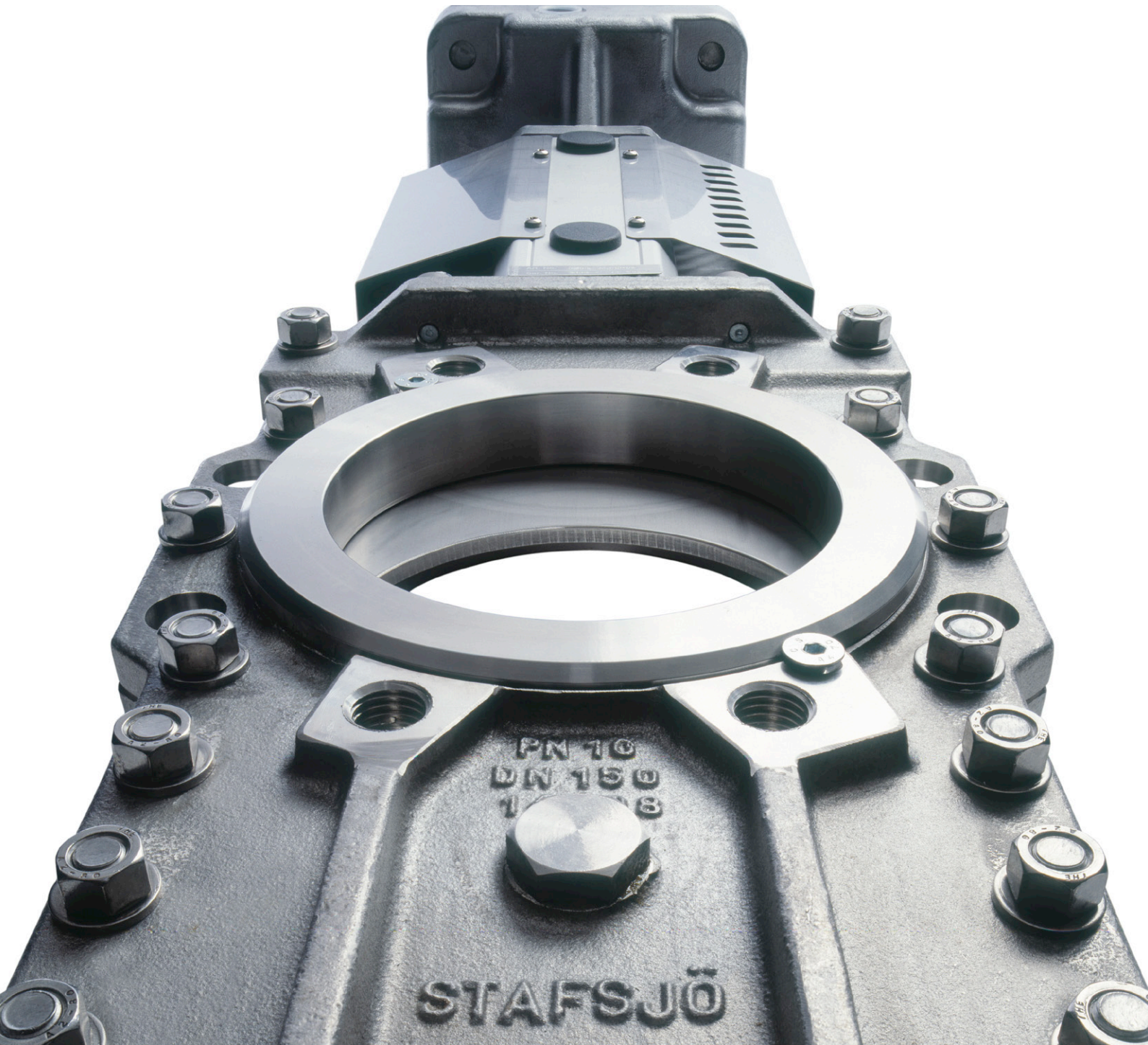


# Knife gate valve HG



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

## Knife gate valve HG

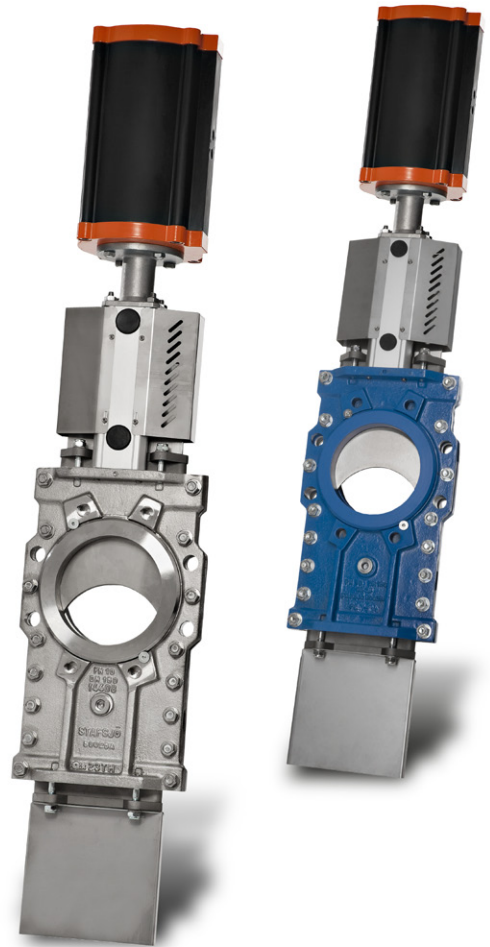
Stafsjö's knife gate valve HG has excellent flow characteristics and gives a bi-directional tight sealing. The valve is equipped with a through-going gate for secure shut-off of concentrated and static media. This shut-off performance, along with its flow characteristics, makes it suitable for severe operating conditions with media as pulp (pulp concentration > 5%), liquor, reject, powder and ash.

HG is supplied as standard with a valve body in stainless steel or epoxy coated cast iron, which has integrated purge ports from DN 100. To be able to cope with bi-directional pressures, the HG has the retainer ring system on both body halves. The valve is equipped with a gate in stainless steel, but Duplex material and hard chromed surface are options to increase the wear resistance. The gland boxes are equipped with Stafsjö's box packing TwinPack™, to secure that no media reaches surrounding environment. The gland boxes can also be supplied with a box bottom scraper or with double gland for the most demanding applications.

The top work consists of aluminium beams and stainless steel tie rods, which gives good corrosion resistance and a stable operation. The valve is modular designed and can easily be customized to specific processes requirements. There are several actuator types and accessories to choose from in our standard collection.

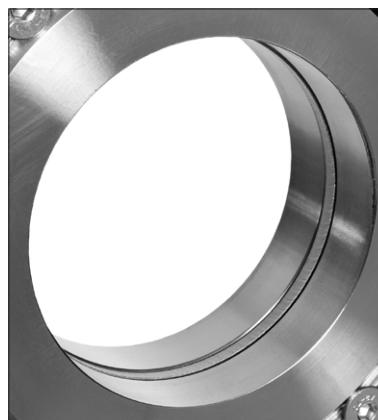
The HG valve is designed, manufactured, inspected and tested according to the European Pressure Equipment Directive (PED 97/23/EC) category I and II module A1. The valve is CE marked when it is applicable.

The HG valve is one out of four valves in Stafsjö's product range with through-going gate. The HP is a high pressure version of HG while the HL is a slim line version. HPT is a high pressure version entirely made in Titanium.



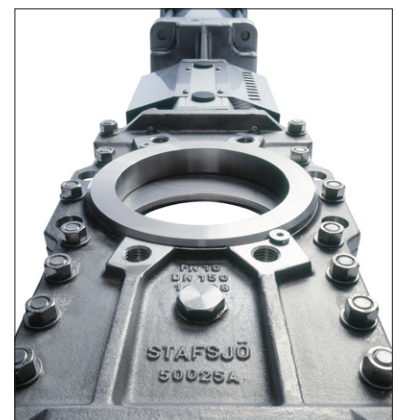
### Reliable shut-off and bi-directional sealing

The retainer ring system on both sides of the gate makes it independent of flow direction. The through-going gate assures a reliable shut-off of highly concentrated and static media.



### A bore with excellent flow characteristics

In open position, the HG valve's bore has almost no cavity at all, making the flow characteristics really excellent. In this position the PTFE seats are protected by the retainer rings and the gate.



### Solid design for preserved sealing capacity

The gate is supported all the way from open to close position which, together with a properly dimensioned top work, makes the shut-off reliable and repeatable.

## Design data

Sizes	Flange drilling	Face-to-face dimension	ATEX design
DN 80 - DN 800	EN 1092 PN 10 EN 1092 PN 16 JIS B 2238 10K ANSI/ASME B16.5 Class 150 ANSI/ASME B16.47 Class 150, series A BS 10 Table D	Stafsjö manufacturing standard MSS SP-81 TAPPI TIS 405-8	ATEX 94/ 9/EC II cat 3 G/D for zone 2 and 22 on request

Other sizes on request

Leakage rate	Pressure tests
<b>EN 12266-1:2003 Rate A:</b> no visually detectable leakage is allowed for duration of the test <b>MSS SP-81</b>	Pressure tests are performed with water at 20° C according to EN 12266-1:2003. 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.

Rate A is not applicable for valves equipped with metal seats

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
80 - 250	10	80 - 250	10
300 - 800	6	300 - 800	6

## Basic equipment

A. Valve body			
Material	Code	Type	Maximum temperature °C
Stainless steel	(E)	EN 1.4408	400
Cast iron	(A)	EN-JL1030/GG20	150

Standard colour valve body A: epoxy, thickness 140-200µm, RAL 5015.

B. Gate		
Material	Type	Option
Stainless steel	EN 1.4404/AISI 316L/SS 2348	Hard chromed surface
<i>Option:</i>		
Duplex stainless steel	EN 1.4462/AISI 2205/SS 2377	Hard chromed surface

C. Retainer rings	
Material	Type
Stainless steel <sup>1)</sup>	EN 1.4408
Cast iron <sup>2)</sup>	EN-JS1050/GGG50, EN-JL1030/GG20

<sup>1)</sup> Standard on HG-E.

<sup>2)</sup> Nodular iron on HG-A DN ≤ DN 300 and cast iron on HG-A ≥ DN 350. Standard colour on retainer rings: epoxy, RAL 5015, thickness 140-200 µm.

D. Seats		
Material	Code	Maximum temperature °C
PTFE with o-ring Nitrile	(P)	100
PTFE with o-ring Viton	(PV)	180
Polyurethane	(U)	90
Metal with Grafoil	(MHT)	400 (E)/150 (A)

E. Box packings			
Material	Code	pH	Maximum temperature °C
TwinPack™	(TY)	2-13	260
PTFE	(TF)	0-14	280
Garlock 127	(TG)	1-12	650

## Actuators

Manual	Code	Automatic	Code
Hand wheel <sup>3)</sup>	(HW)	Pneumatic cylinder	(AC/EC)
Chain wheel <sup>4)</sup>	(CW)	Electrical motor	(EM)
Bevel gear <sup>4)</sup>	(BG)	Hydraulic cylinder <sup>4)</sup>	(MH)

<sup>3)</sup> For recommended size, see page 5 column E

<sup>4)</sup> For recommended size, see separate data sheet

Double-acting pneumatic cylinder			Electric motor (AUMA multi-turn)		
DN valve	Size EC	Maximum force (kN)	DN valve	AUMA type	Attachment
80 - 125	EC 100	3,5	80 - 125	SA 07.2	F10/A
150 - 250	EC 160	9,0	150 - 250	SA 07.6	F10/A
300 - 400	EC 200	14,1	300 - 450	SA 10.2	F10/A
450 - 500	EC 250	22,1	500 - 600	SA 14.2	F14/A
600 - 800	EC 320	36,2	700 - 800	SA 14.6	F14/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 detail in separate data sheets. For actuators classified according to ATEX, please contact Stafsjö or your local representative.

## Options and accessories

Knife gate valve			
Accessories	Code	Model	Design
Mechanical limit switch	(MLS)	Omron D4V	12-250 V AC/12-125 V DC, IP 65
Inductive limit switch	(ILS)	ifm electronic IG0006	2-wire, 20-250 V AC/DC, IP 67
		ifm electronic IG5401	3-wire, 10-36 V DC PNP, IP 67
Positioner for control	(POS)	PMV Palmstierna/Metso/ABB	
Purge ports	(PP)	HG DN 80 on order	
		Standard on $\geq$ HG DN 100	Pipe thread G1/2" acc. to ISO 228/1
Double gland	(DG)	For HG DN 80 - DN 400	Stainless steel (EN 1.4408)

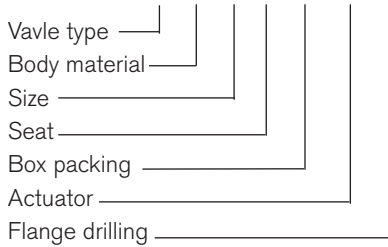
Pneumatic cylinder			
Accessories	Code	Model	Design
Solenoid valve	(SV)	Parker Namur valves for EC 100 - EC 160	G1/4", Mono stable 5/2, Namur series VDI/VDE 3845, 24 V DC/110 V AC/220 V AC, IP 65
		Parker Namur valves for EC 200 - EC 320	G1/2", Mono stable 5/2, Namur series VDI/VDE 3845, 24 V DC/110 V AC/220 V AC, IP 65
Magnetic limit switch	(MagLS)	KITA KT-50R for EC 100 - EC 320	2-wire, 5-240 V AC/DC, IP 65
		KITA KT-50N for EC 100 - EC 320	3-wire, 10-30 V DC, IP 65

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

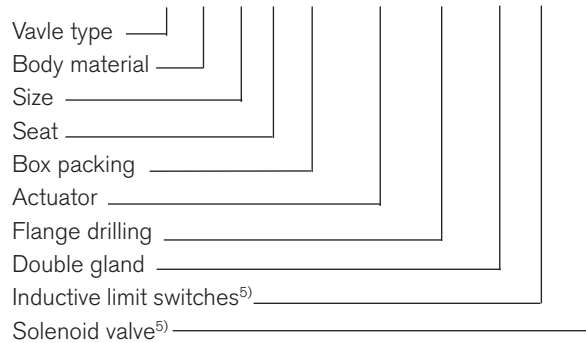
## Specify the Stafsjö valve

Stafsjö's valves are modular designed and they can easily be customized with gate, seat 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](http://www.stafsjo.com).

### HG-E-200-P-TY-HW-PN10



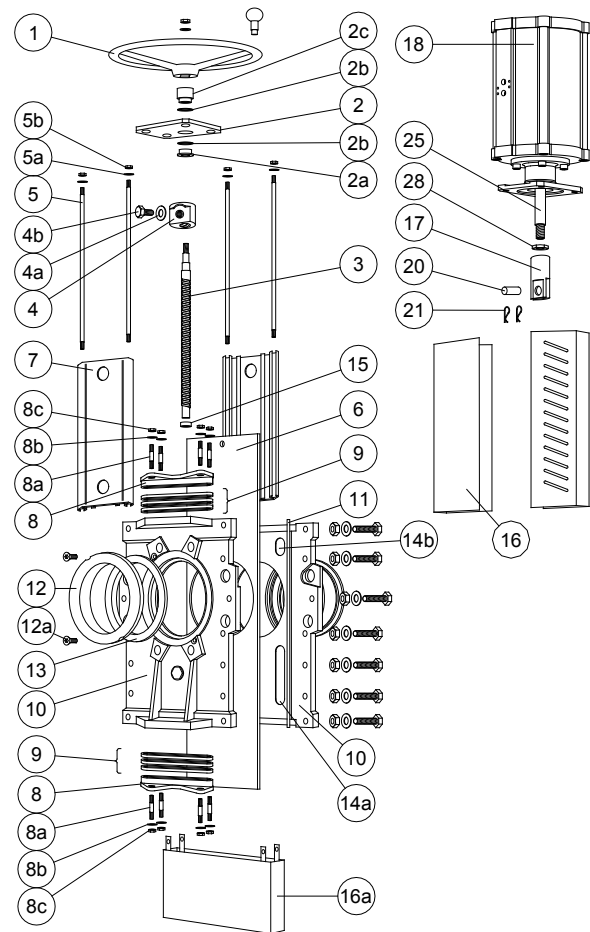
### HG-E-400-P-TY-EC160-PN10-DG-ILS-SV



<sup>5)</sup> All electronics must be specified in detail.

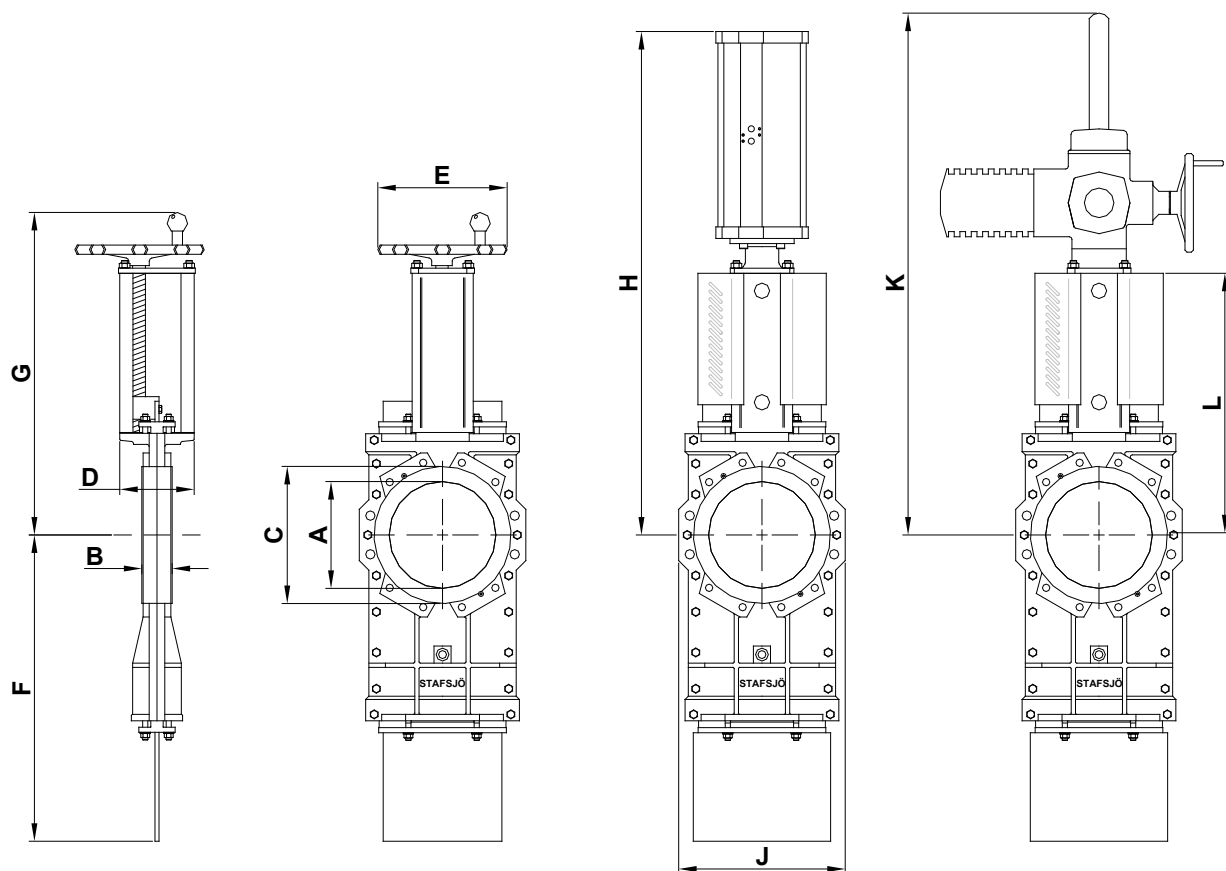
## Part list

Pos.	Detail	Material (Type)
1	Hand wheel	Epoxy coated cast iron Ø 200 - Ø 315 (EN-JL1040/GG25), ≥ Ø 400 (EN-JL1030/GG20)
2	Yoke	Stainless steel (EN 1.4301/SS 2333)
2a	Bearing	Brass (CuZn39Pb3/SS 5170)
2b	Slide washer	POM
3	Stem	Stainless steel (EN 1.4016/SS 2320 alt. EN 1.4305/SS 2346)
4	Stem nut	Brass (CW603N) ≥ DN 800: Brass (SS 5453)
4a	Washer	Stainless steel (A2)
4b	Screw	Stainless steel (A2)
5	Tie rod	Stainless steel (EN 1.4301/SS 2333)
5a	Washer	Stainless steel (A2)
5b	Nut	Stainless steel (A2)
6	Gate	See equipment B
7	Beam	Aluminium (EN AW-6063-T6)
8	Gland	Stainless steel (1.4408)
8a	Stud bolt	Stainless steel (A2), zinc coated
8b	Washer	Stainless steel (A2)
8c	Nut	Stainless steel (A2), zinc coated
9 <sup>6)</sup>	Box packing	See equipment E
10	Valve body	See equipment A
11	Body gasket	Grafoil DN ≥ 200: PTFE
12	Retainer ring	See equipment C
12a	Locking screw	Stainless steel (A2)
13 <sup>6)</sup>	Seat	See equipment D
14a	Guide strip	Only DN ≥ 250: PTFE
14b	Guide strip	Only DN ≥ 250: PTFE
15	Bushing	Oil-bronze
16/a	Gate guard, not for HW	Stainless steel (EN 1.4301/SS 2333)
17	Gate clevis	Stainless steel (EN 1.4305/SS 2346)
18	Cylinder	See data sheet



20	Clevis pin	Stainless steel (EN 1.4305/SS 2346)
21	Split pin	Stainless steel (EN 1.4436/SS 2343)
25	Piston rod	Stainless steel (EN 1.4305/SS 2346)
28	Locking nut	Stainless steel (EN 1.4305/SS 2346)

<sup>6)</sup> Recommended spare parts

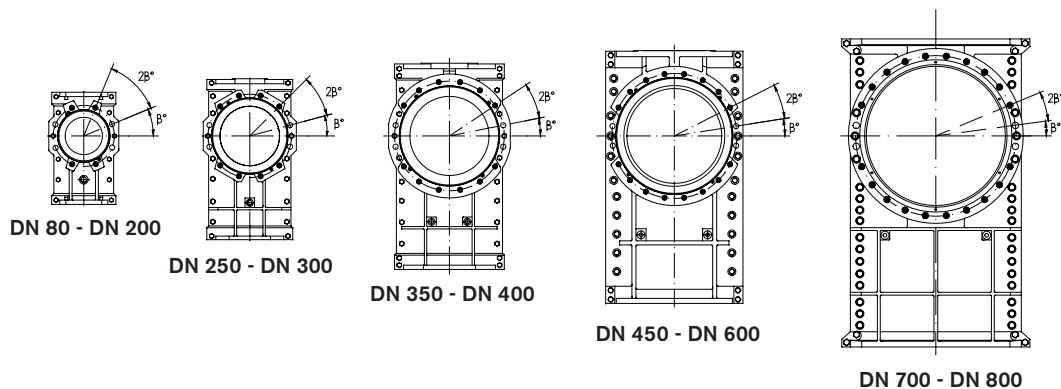


## Main dimensions

Dimensions (mm)												
DN	A	B	C	D	E	F	G	H	J	K	L	Weight <sup>2)</sup>
80	79	51	125	70	200	285	405	488	180	744	275	17
100	103	51	153	72	200	385	445	533	210	809	315	22
125	128	56	179	80	250	424	485	665	240	874	355	29
150	153	60	205	80	250	455	530	735	260	944	400	34
200	202	60	270	150	315	600	659	886	330	1070	520	75
250	250	69	320	150	315	725	739	1021	390	1200	600	100
300	302	78	375	180	400	865	893	1257	455	1420	720	170
350	332	78	425	175	400	980	948	1342	510	1505	775	200
400	380	89	480	210	520	1070	1033	1510	570	1650	873	290
450	428	89	534	220	520	1210	1124	1657	625	1790	963	410
500	470	114	580	320	635	1412	1299	1882	690	2020	1138	670
600	540	122	679	350	635	1553	1336	1981	800	2135	1175	820
700	665	128	800	320	635	1891	1556	2326	995	2505	1395	1300
800	760	128	900	320	635	2132	1721	2591	1070	2770	1560	1700

<sup>2)</sup> Weight in kg for valve with hand wheel (HW)

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



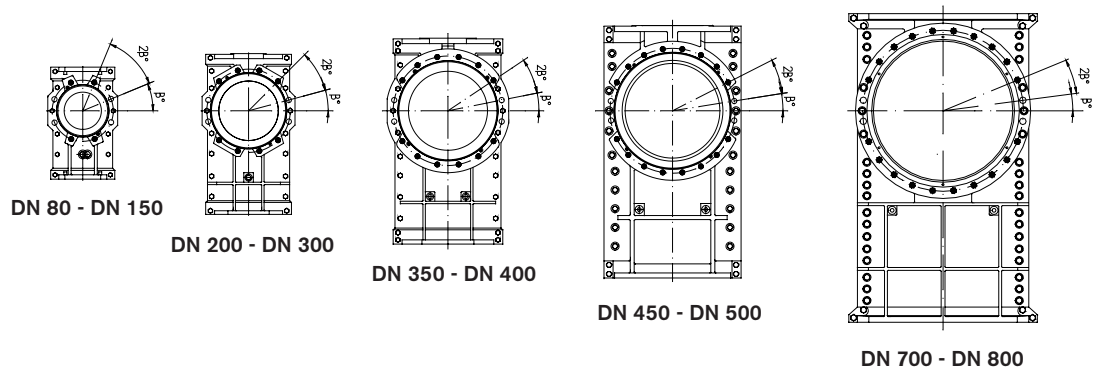
## Flange drilling according to EN 1092 PN 10

Flange drilling information (mm)							
DN	80	100	125	150	200	250	300
Outside flange diameter	200	220	250	285	340	395	445
Bolt circle diameter	160	180	210	240	295	350	400
Number of throughgoing bolts (◦)	4	4	4	4	4	4	4
Number of tapped holes on each side (•)	4	4	4	4	4	8	8
Bolt size	M16	M16	M16	M20	M20	M20	M20
Size of throughgoing holes	Ø18	Ø18	Ø18	Ø22	Ø22	Ø22	Ø22
β°	22,5	22,5	22,5	22,5	22,5	15	15
Screw lengths <sup>8)</sup>	13	13	15	15	16	18	20
Flange drilling information (mm)							
DN	350	400	450	500	600	700	800
Outside flange diameter	505	565	615	670	780	895	1015
Bolt circle diameter	460	515	565	620	725	840	950
Number of throughgoing bolts (◦)	4	4	4	4	4	4	4
Number of tapped holes on each side (•)	12	12	16	16	16	20	20
Bolt size	M20	M24	M24	M24	M27	M27	M30
Size of throughgoing holes	Ø22	Ø26	Ø26	Ø26	Ø30	Ø30	Ø33
β°	11,25	11,25	9	9	9	7,5	7,5
Screw lengths <sup>8)</sup>	20	25	25	27	28	28	31

<sup>8)</sup> Add the values with the thickness of flanges, washers and gaskets.

◦ Throughgoing holes

• Tapped holes



## Flange drilling according to EN 1092 PN 16

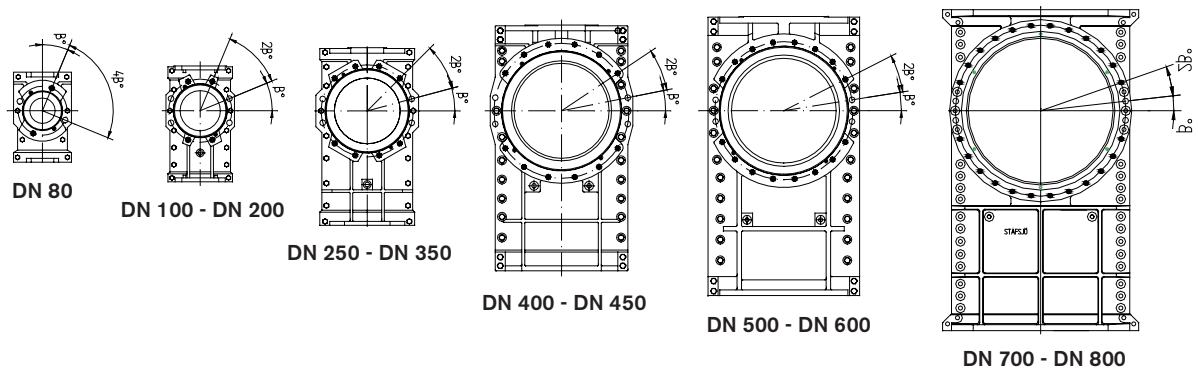
Flange drilling information (mm)							
DN	80	100	125	150	200	250	300
Outside flange diameter	200	220	250	285	340	405	460
Bolt circle diameter	160	180	210	240	295	355	410
Number of throughgoing bolts (◦)	4	4	4	4	4	4	4
Number of tapped holes on each side (•)	4	4	4	4	8	8	8
Bolt size	M16	M16	M16	M20	M20	M24	M24
Size of throughgoing holes	Ø18	Ø18	Ø18	Ø22	Ø22	Ø26	Ø26
β°	22,5	22,5	22,5	22,5	15	15	15
Screw lengths <sup>8)</sup>	13	13	15	15	16	18	20
Flange drilling information (mm)							
DN	350	400	450	500	700	800	
Outside flange diameter	520	580	640	715	910	1025	
Bolt circle diameter	470	525	585	650	840	950	
Number of throughgoing bolts (◦)	4	4	4	4	4	4	
Number of tapped holes on each side (•)	12	12	16	16	20	20	
Bolt size	M24	M27	M27	M30	M33	M36	
Size of throughgoing holes	Ø26	Ø30	Ø30	Ø33	Ø36	Ø39	
β°	11,25	11,25	9	9	7,5	7,5	
Screw lengths <sup>8)</sup>	20	25	25	27	28	31	

<sup>8)</sup> Add the values with the thickness of flanges, washers and gaskets.

◦ Throughgoing holes

• Tapped holes





## Flange drilling according to ASME/ANSI B 16.5 and 16.47 Class 150 series A

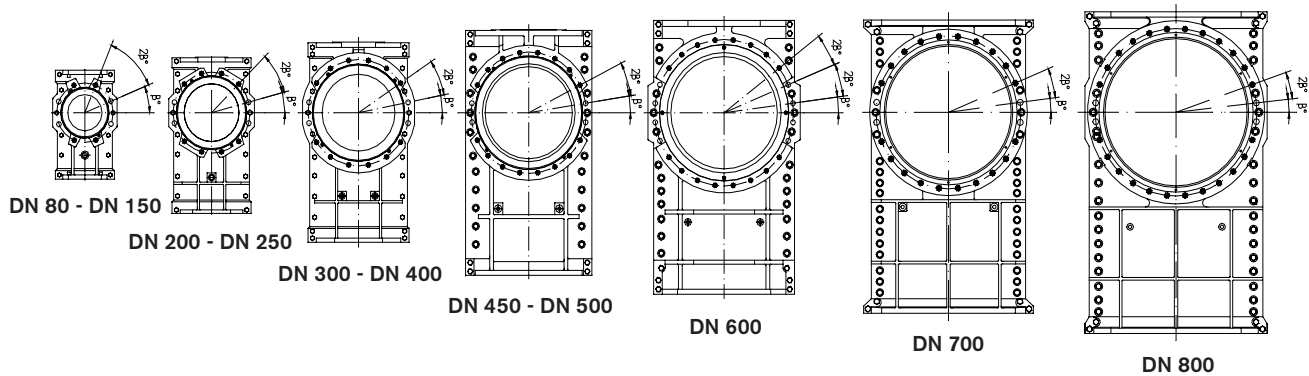
Flange drilling information (mm)							
DN	80	100	125	150	200	250	300
Outside flange diameter	190,5	228,6	254	279,4	342,9	406,4	482,6
Bolt circle diameter	152,4	190,5	215,9	241,3	298,4	361,9	431,8
Number of throughgoing bolts (°)	2	4	4	4	4	4	4
Number of tapped holes on each side (•)	2	4	4	4	4	8	8
Bolt size (UNC)	5/8-11	5/8-11	3/4-10	3/4-10	3/4-10	7/8-9	7/8-9
Size of throughgoing holes	Ø18	Ø18	Ø22	Ø22	Ø22	Ø26	Ø26
β°	22,5	22,5	22,5	22,5	22,5	15	15
Screw lengths <sup>8)</sup>	13	13	15	15	16 <sup>9)</sup>	18	20
Flange drilling information (≥ DN 700: ASME/ANSI B16.47 Class 150 series A) (mm)							
DN	350	400	450	500	600	700	800
Outside flange diameter	533	597	635	699	813	927,1	1060
Bolt circle diameter	476,3	539,8	577,9	635	749,3	863,6	977,9
Number of throughgoing bolts (°)	4	4	4	4	4	4	4
Number of tapped holes on each side (•)	8	12	12	16	16	24	24
Bolt size (UNC)	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7	1 1/4-7	1 1/2-6
Size of throughgoing holes	Ø30	Ø30	Ø33	Ø33	Ø36	Ø36	Ø42
β°	15	11,25	11,25	9	9	6,43	6,43
Screw lengths <sup>8)</sup>	20	25	25	27	28	28	31

<sup>8)</sup> Add the values with the thickness of flanges, washers and gaskets.

<sup>9)</sup> The screws on one side has to be 10 mm longer for face-to-face TAPPI.

° Throughgoing holes

• Tapped holes



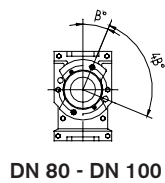
## Flange drilling according to JIS B 2238 10 K

Flange drilling information (mm)							
DN	80	100	125	150	200	250	300
Outside flange diameter	180	210	250	280	330	400	445
Bolt circle diameter	150	175	210	240	290	355	400
Number of throughgoing bolts (◦)	4	4	4	4	4	4	4
Number of tapped holes on each side (•)	4	4	4	4	8	8	12
Bolt size	M16	M16	M20	M20	M20	M22	M22
Size of throughgoing holes	Ø18	Ø19	Ø22	Ø22	Ø23	Ø26	Ø26
$\beta^\circ$	22,5	22,5	22,5	22,5	15	15	15
Screw lengths <sup>8)</sup>	13	13	15	15	16	18	20
Flange drilling information (mm)							
DN	350	400	450	500	600	700	800
Outside flange diameter	490	550	620	675	795	905	1020
Bolt circle diameter	445	510	565	620	730	840	950
Number of throughgoing bolts (◦)	4	4	4	4	8	4	4
Number of tapped holes on each side (•)	12	12	16	16	16	20	24
Bolt size	M22	M24	M24	M24	M30	M30	M30
Size of throughgoing holes	Ø26	Ø26	Ø26	Ø27	Ø33	Ø33	Ø33
$\beta^\circ$	11,25	11,25	9	9	7,5	7,5	6,43
Screw lengths <sup>8)</sup>	20	25	25	27	28	28	31

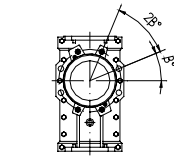
<sup>8)</sup> Add the values with the thickness of flanges, washers and gaskets.

◦ Throughgoing holes

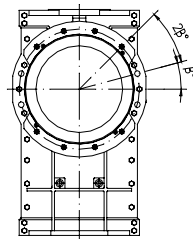
• Tapped holes



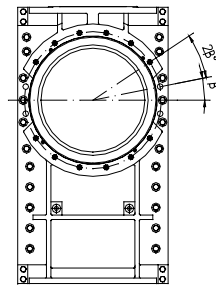
DN 80 - DN 100



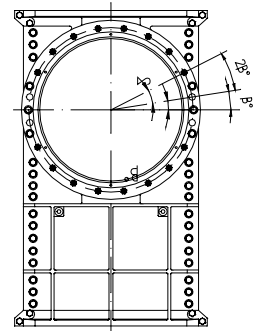
DN 125 - DN 250



DN 300 - DN 450



DN 500 - DN 600



DN 700 - DN 800

## Flange drilling according to BS 10 Table D

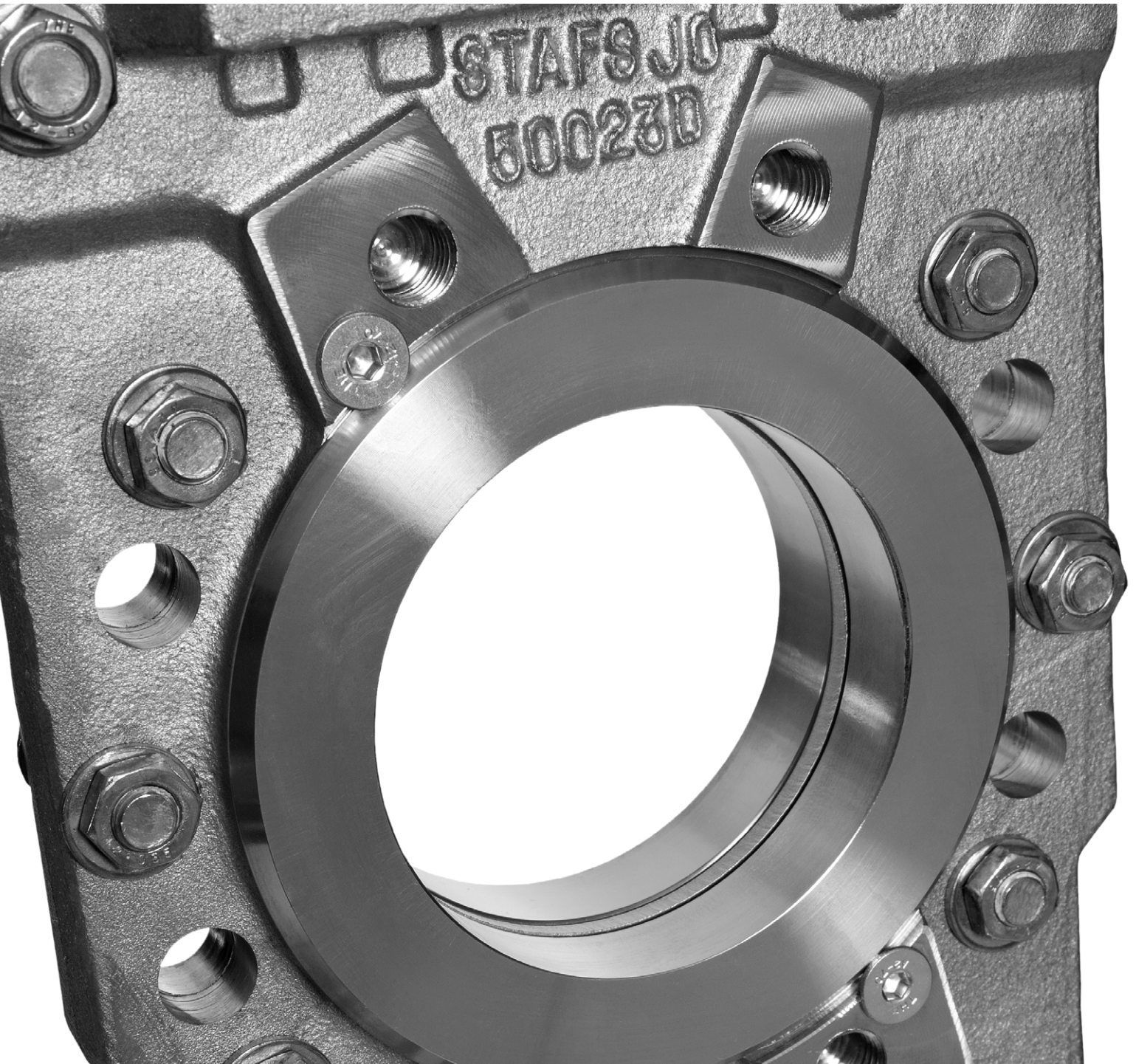
Flange drilling information (mm)							
DN	80	100	125	150	200	250	300
Outside flange diameter	184	215,9	254	279,4	336,6	406,4	457,2
Bolt circle diameter	146,1	177,8	209,6	235	292,1	355,6	406,4
Number of throughgoing bolts (◦)	2	2	4	4	4	4	4
Number of tapped holes on each side (•)	2	2	4	4	4	4	8
Bolt size (UNC)	5/8-11	5/8-11	5/8-11	5/8-11	5/8-11	3/4-10	3/4-10
Size of throughgoing holes	Ø18	Ø18	Ø18	Ø18	Ø18	Ø22	Ø22
β°	22,5	22,5	22,5	22,5	22,5	22,5	15
Screw lengths <sup>8)</sup>	13	13	15	15	16	18	20
Flange drilling information (mm)							
DN	350	400	450	500	600	700	800
Outside flange diameter	527,1	577,9	641,4	704,9	825,5	910	1060
Bolt circle diameter	469,9	520,7	584,2	641,4	755,7	845	984,2
Number of throughgoing bolts (◦)	4	4	4	4	4	4	4
Number of tapped holes on each side (•)	8	8	8	12	12	16	16
Bolt size (UNC)	7/8-9	7/8-9	7/8-9	7/8-9	1-8	1-8	1 1/4-7
Size of throughgoing holes	Ø26	Ø26	Ø26	Ø26	Ø30	Ø30	Ø36
β°	15	15	15	11,25	11,25	9	9
Screw lengths <sup>8)</sup>	20	25	25	27	28	28	31

<sup>8)</sup> Add the values with the thickness of flanges, washers and gaskets.

◦ Throughgoing holes

• Tapped holes

Further information is available on [www.stafsjo.com](http://www.stafsjo.com)



## Globally active. Locally represented.

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