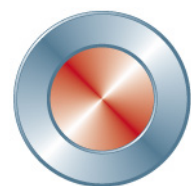
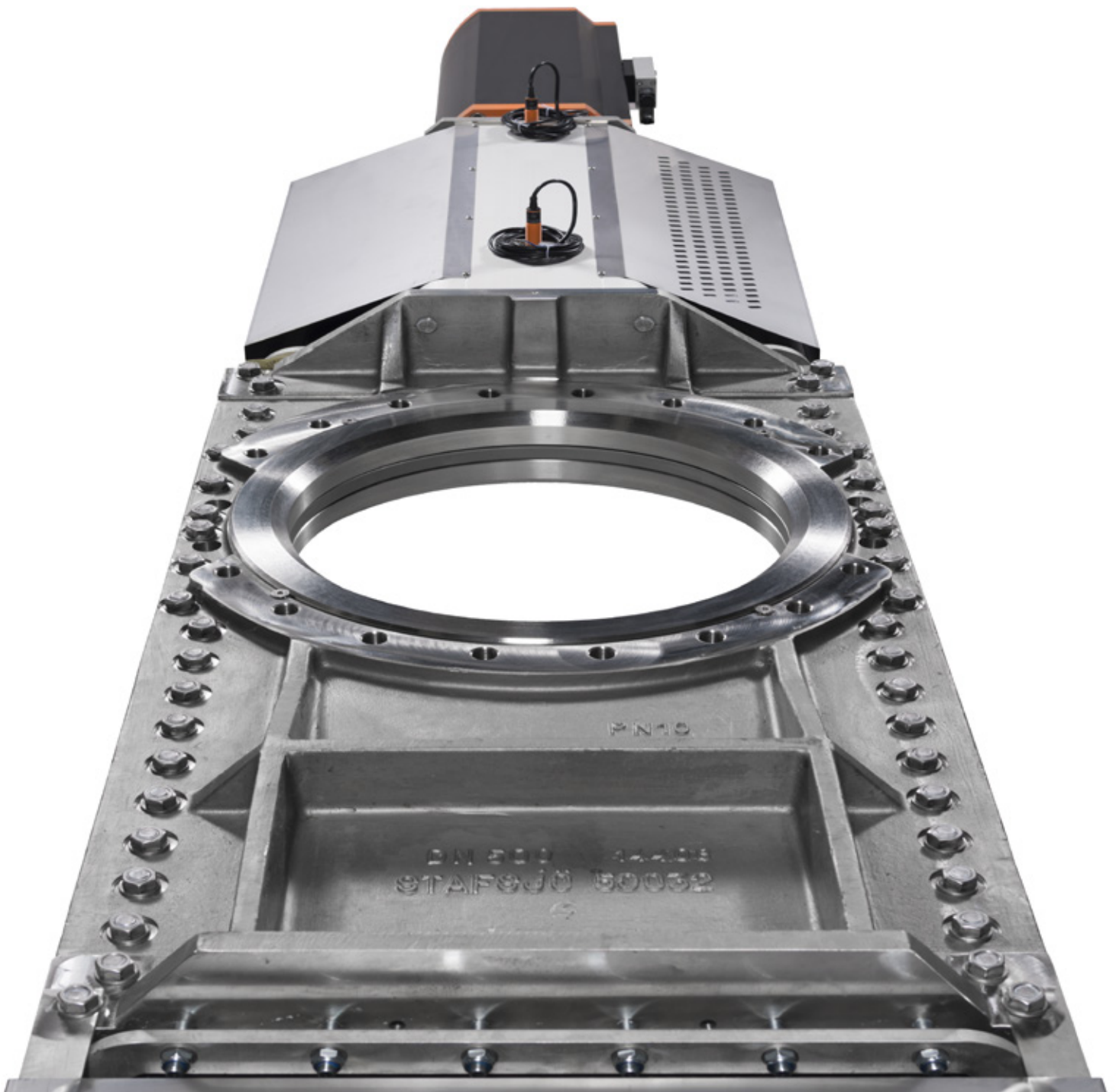


# Knife gate valve HP



**Stafsjö**  
SINCE 1666

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## Knife gate valve HP

Stafsjö's knife gate valve HP has excellent flow characteristics and gives a bi-directional tight high pressure 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 such as pulp (pulp concentration > 5%), liquor, reject, slurry, powder and ash.

HP is supplied as standard with a valve body in stainless steel, which has integrated purge ports and guiding strips. To enable bi-directional pressures, the HP has the retainer ring system on both body halves. The gate is as standard supplied in duplex stainless steel and an optional hard chromed surface further increase the wear resistance. The gland boxes are equipped with Stafsjö's box packing TwinPack™, to secure that no media reaches the 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.

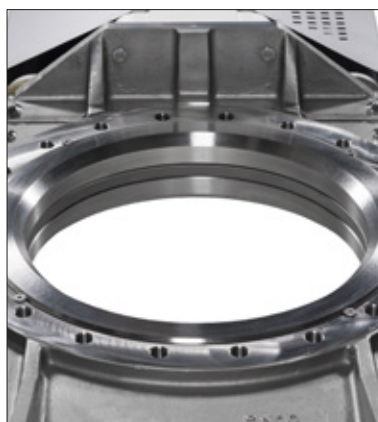
The HP valve is designed, manufactured, inspected and tested according to the European Pressure Equipment Directive (PED 97/23/EC) category I and II module A1. The valve is CE marked when it is applicable.

The HP valve is one out of five valves in Stafsjö's product range with through-going gates. HG represent the standard and HL is a slim line version of HG. HPT is a high pressure version entirely made in Titanium. Finally the HX is an extreme high pressure version.



### 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 HP 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 to preserve a first rate sealing

The gate is supported all the way from opened to closed position which, together with a proper dimensioned top works, makes the shut-off reliable and repeatable.

## Design data

Sizes	Flange drilling	Face-to-face dimension	ATEX design	Corrosion protection
DN 300 - DN 900	EN 1092 PN 10 EN 1092 PN 16 JIS B 2238 10K ASME/ANSI B16.5 Class 150, ASME/ANSI B16.47 Class 150, series A	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	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 12266-1:2012 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 12266-1:2012. Pressure for shell test: 1,5 times maximum allowable working pressure for open valve. Pressure for 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
300 - 800	10	300 - 800	10
900	6	900	6

## Basic equipment

A. Valve Body			
Material	Code	Type	Maximum temperature °C
Stainless steel	(E)	EN 1.4408	400
<i>The valve body is as standard supplied with purge ports G1/2"</i>			
B. Gate			
Material	Type	Option	
Duplex stainless steel	EN 1.4462/S32205	Hard chromed surface	
C. Retainer rings			
Material	Type		
Stainless steel	EN 1.4408		
D. Seats			
Material	Code	Maximum temperature °C	
PTFE with o-ring Nitrile	(P)	100	
PTFE with o-ring Viton	(PV)	180	
E. Box Packing			
Material	Code	Maximum temperature °C	
TwinPack™	(TY)	260	
WhitePack™	(WP)	260	

## Actuators

Manual	Code	Automatic	Code
Hand wheel <sup>1)</sup>	(HW)	Pneumatic cylinder	(EC)
Chain wheel <sup>2)</sup>	(CW)	Electrical motor	(EM)
		Hydraulic cylinder <sup>2)</sup>	(MH)

<sup>1)</sup> For recommended size, see page 5 column E

<sup>2)</sup> For recommended size, see separate data sheet

Double-acting pneumatic cylinder			Electric motor (AUMA multi-turn)		
DN valve	Size EC	Force at 5 bar (kN)	DN valve	AUMA	Attachment
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
900	On request		900	On request	

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.

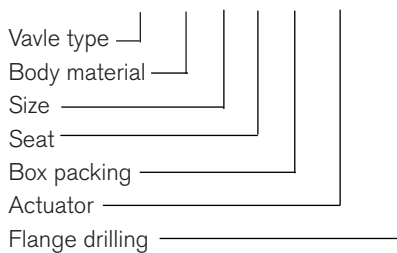
Electric motors are mounted according to standard ISO 5210. The table above gives recommended motor sizes at normal operation. For other operating conditions, please contact Stafsjö or your local representative for advice.

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

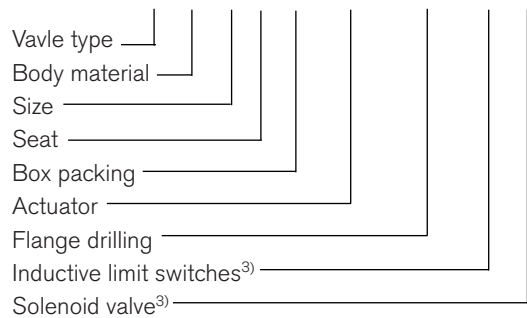
Stafsjö's valves are modular designed and they can easily be customized with gate, seat and box packings according to media and requirements, as well for actuators and accessories. Below are examples of how you can specify your Stafsjö valve. Further information is available on [www.stafsjo.com](http://www.stafsjo.com).

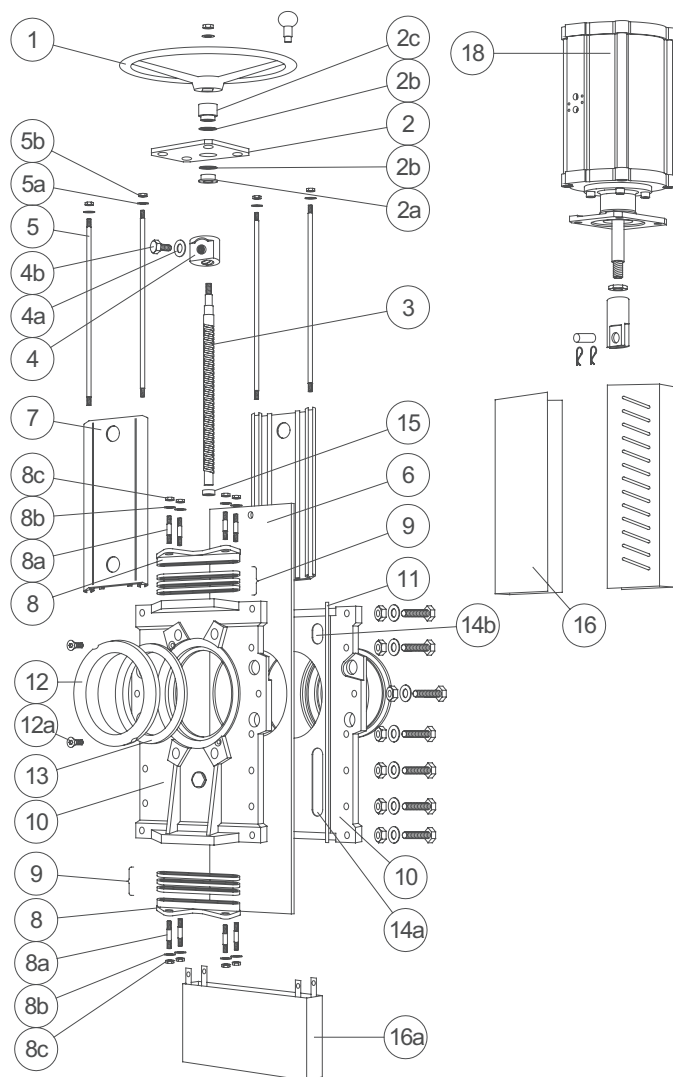
### HP-E-400-P-TY-HW-PN10



3) All electronics must be specified in detail.

### HP-E-500-P-TY-EC250-PN10-ILS-SV



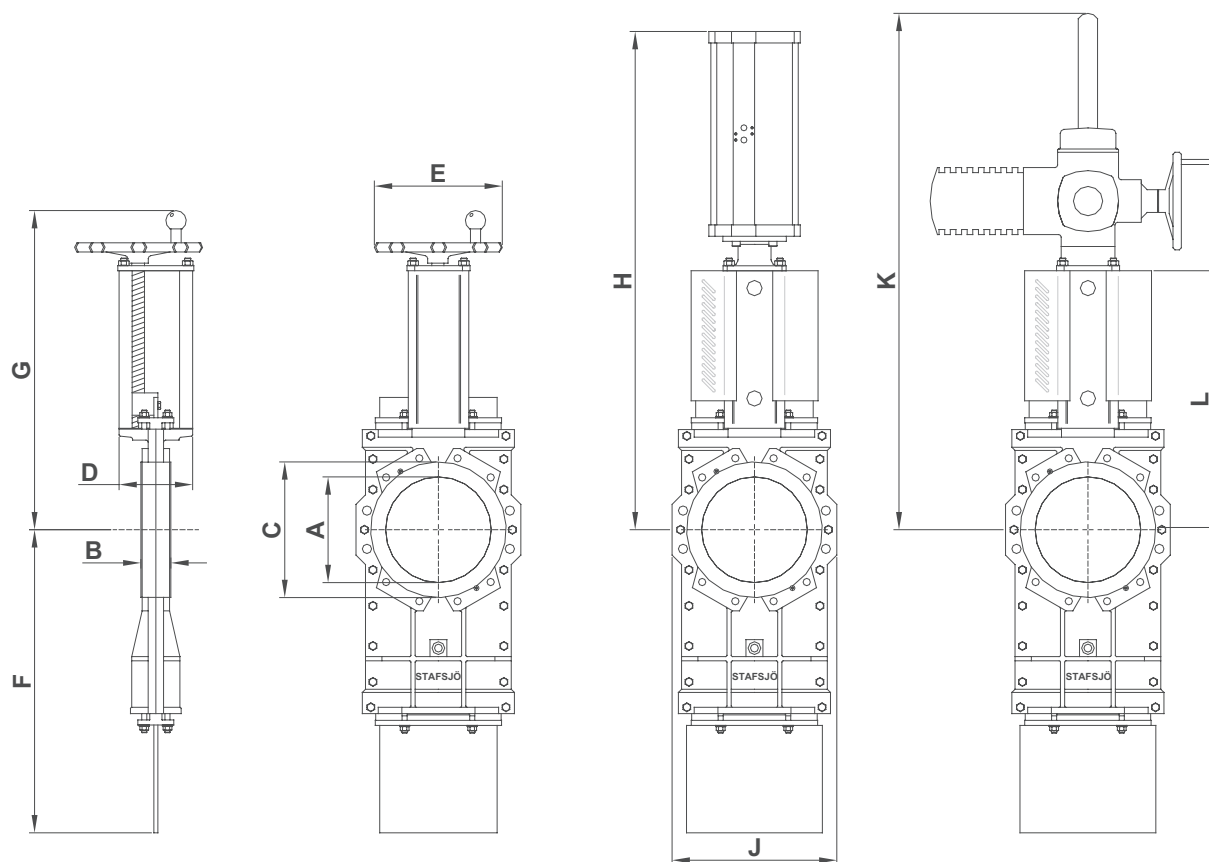


## Part list

Pos	Detail	Material (Type)
1	Hand wheel	Coated cast iron (EN-JL1030/GG20)
2	Yoke	Stainless steel (EN 1.4301)
3	Stem	Stainless steel (EN 1.4104)
4	Stem nut	Brass (CW603N alt. CW614N)
4a	Washer	Stainless steel (A2)
4b	Screw	Stainless steel (A2)
4c	Washer	Stainless steel (A2)
4d	Nut	Stainless steel (A2)
5	Tie rod	Stainless steel (EN 1.4301)
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 (EN 1.4408)
8a	Stud bolt	Stainless steel (A2), zinc coated

Pos	Detail	Material (Type)
8b	Washer	Stainless steel (A2)
8c	Nut	Stainless steel (A2), zinc coated
9 <sup>4)</sup>	Box packing	See equipment E
10	Valve body	See equipment A
11	Body gasket	PTFE
12	Retainer ring	See equipment C
12a	Locking screw	Stainless steel (A2)
13 <sup>4)</sup>	Seat	See equipment D
14a	Guide strip	PTFE
14b	Guide strip	PTFE
15	Bushing	Oil-bronze
16/a	Gate guard, not for HW	Stainless steel (EN 1.4301)
18	Pneumatic cylinder	See data sheet

<sup>4)</sup> Recommended spare parts



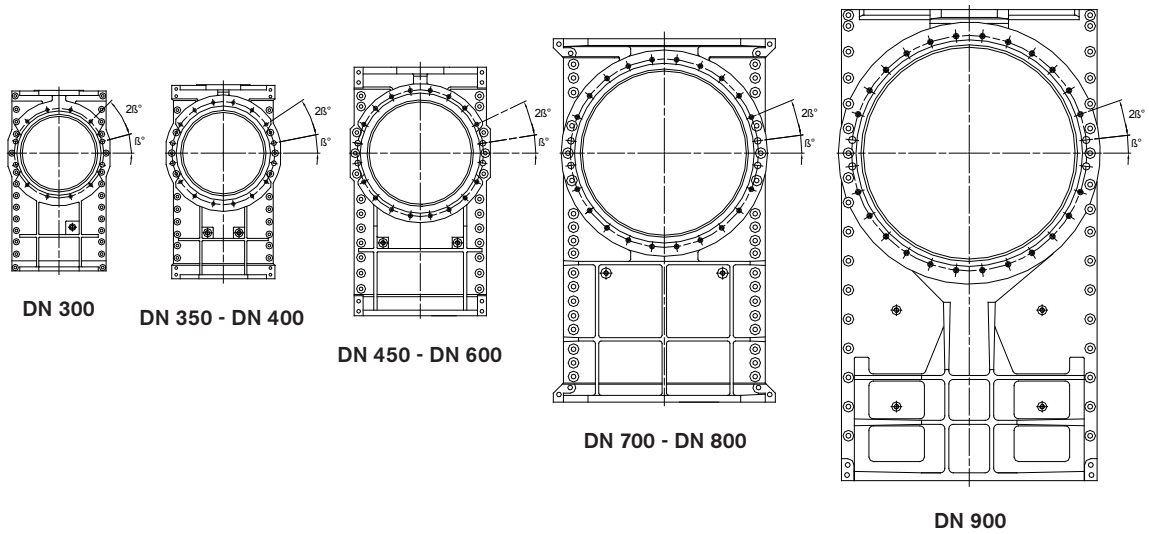
## Main dimensions

Dimensions (mm)												
DN	A	B	C	D	E	F	G	H	J	K	L	Weight <sup>1)</sup>
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	420	89	534	220	520	1210	1124	1657	625	1790	963	425
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
900	880	128	1010	310	-	2450	-	2886	1168	2940	1740	1960 <sup>2)</sup>

<sup>1)</sup> Weight in kg for valve equipped with hand wheel.

<sup>2)</sup> Weight in kg for valve equipped with double-acting pneumatic cylinder

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



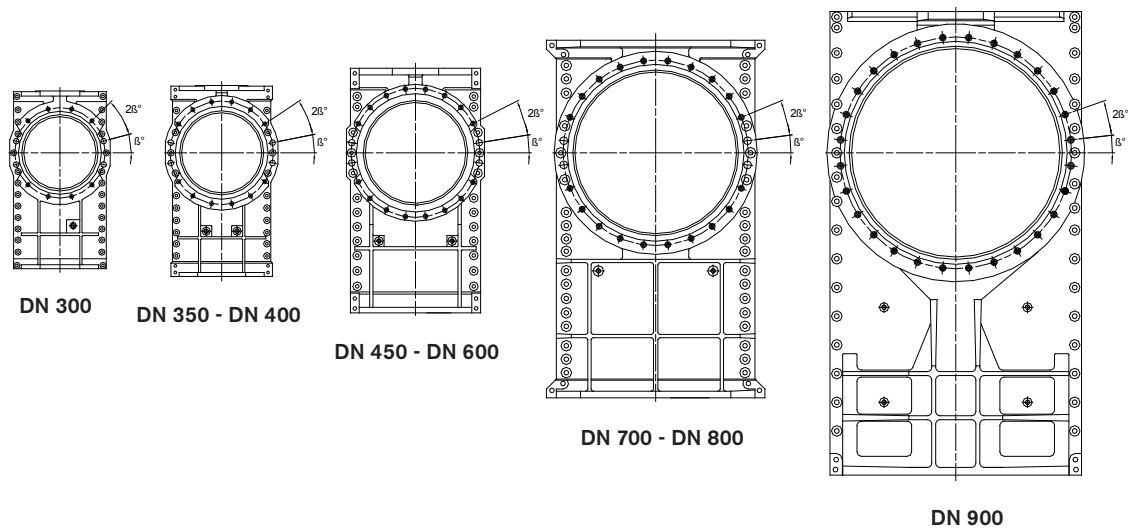
## Flange drilling according to EN 1092 PN10

Flange drilling information (mm)									
DN	300	350	400	450	500	600	700	800	900
Outside flange diameter	445	505	565	615	670	780	895	1015	1115
Bolt circle diameter	400	460	515	565	620	725	840	950	1050
Number of throughgoing bolts (◦)	4	4	4	4	4	4	4	4	4
Number of tapped hole/side (•)	8	12	12	16	16	16	20	20	24
Bolt size	M20	M20	M24	M24	M24	M27	M27	M30	M30
Size of throughgoing holes in flange	Ø22	Ø22	Ø26	Ø26	Ø26	Ø30	Ø30	Ø33	Ø33
β°	15	11,25	11,25	9	9	9	7,5	7,5	6,43
Screw lengths <sup>1)</sup>	20	20	25	25	27	28	28	31	31

<sup>1)</sup> Add the values with the thickness of flanges, washers and gaskets.

◦ Throughgoing holes

• Tapped holes



## Flange drilling according to EN 1092 PN16

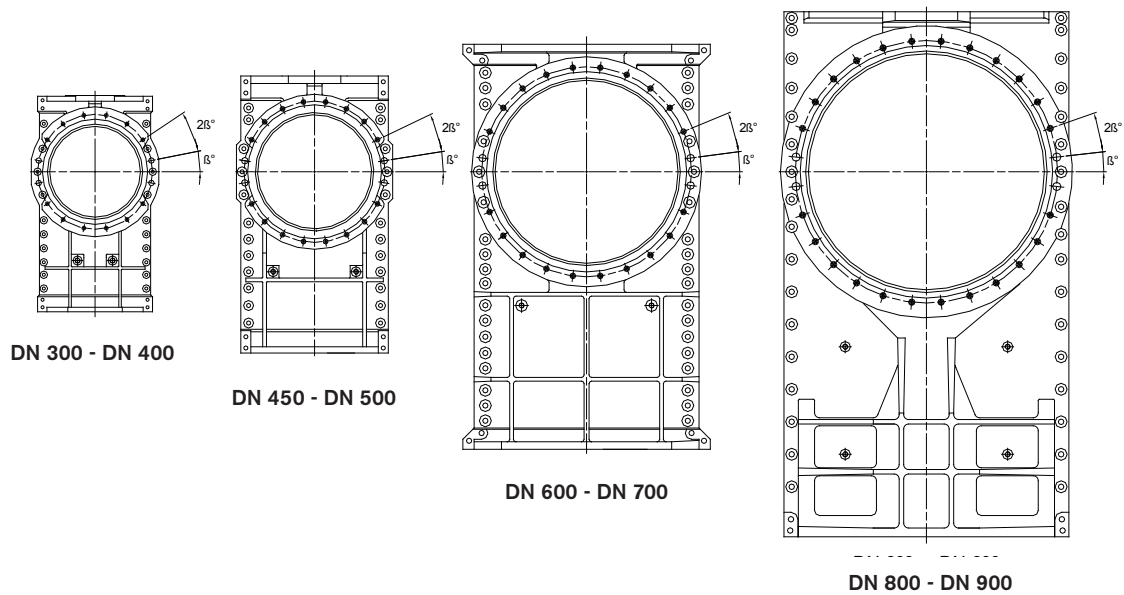
Flange drilling information								
DN	300	350	400	450	500	700	800	900
Outside flange diameter (mm)	460	520	580	640	715	910	1025	1125
Bolt circle diameter (mm)	410	470	525	585	650	840	950	1050
Number of throughgoing bolts (◦)	4	4	4	4	4	4	4	-
Number of tapped hole/side (•)	8	12	12	16	16	20	20	28
Bolt size	M24	M24	M27	M27	M30	M33	M36	M36
Size of throughgoing holes in flange	Ø26	Ø26	Ø30	Ø30	Ø33	Ø36	Ø39	Ø39
β°	15	11,25	11,25	9	9	7,5	7,5	6,43
Screw lengths <sup>1)</sup>	20	20	25	25	27	28	31	31

<sup>1)</sup> Add the values with the thickness of flanges, washers and gaskets.

◦ Throughgoing holes

• Tapped holes





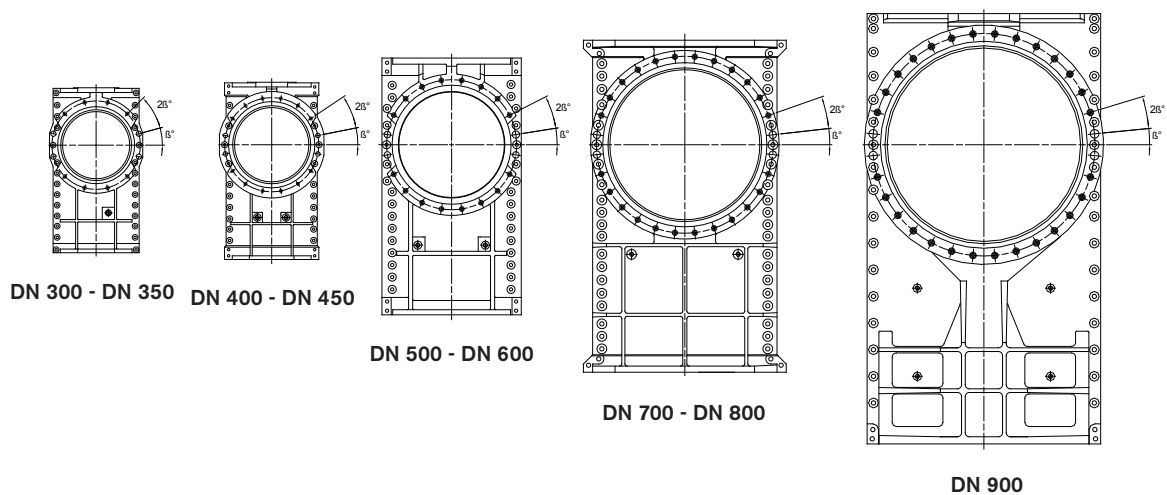
## Flange drilling according to JIS B 2238 10K

Flange drilling information									
DN	300	350	400	450	500	600	700	800	900
Outside flange diameter (mm)	445	490	550	620	675	795	905	1020	1120
Bolt circle diameter (mm)	400	445	510	565	620	730	840	950	1050
Number of throughgoing bolts (○)	4	4	4	4	4	4	4	4	4
Number of tapped hole/side (●)	12	12	12	16	16	20	20	24	24
Bolt size	M22	M22	M24	M24	M24	M30	M30	M30	M30
Size of throughgoing holes in flange	Ø26	Ø26	Ø26	Ø26	Ø27	Ø33	Ø33	Ø33	Ø33
β°	15	11,25	11,25	9	9	7,5	7,5	6,43	6,43
Screw lengths <sup>1)</sup>	20	20	25	25	27	28	28	31	31

<sup>1)</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 $\geq$ DN 700: ANSI B16.47 Class 150, series A.									
DN	300	350	400	450	500	600	700	800	900
Outside flange diameter (mm)	482,6	533	597	635	699	813	927,1	1060	1168,4
Bolt circle diameter (mm)	431,8	476,3	539,8	577,9	635	749,3	863,6	977,9	1085,9
Number of throughgoing bolts (○)	4	4	4	4	4	4	4	4	4
Number of tapped hole/side (●)	8	8	12	12	16	16	24	24	28
Bolt size (UNC)	7/8-9	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7	1 1/4-7	1 1/2-6	1 1/2-6
Size of throughgoing holes in flange	Ø26	Ø30	Ø30	Ø33	Ø33	Ø36	Ø36	Ø42	Ø42
$\beta^\circ$	15	15	11,25	11,25	9	9	6,43	6,43	5,625
Screw lengths <sup>1)</sup>	20	20	25	25	27	28	28	31	31

<sup>1)</sup> Add the values with the thickness of flanges, washers and gaskets.

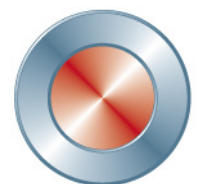
○ Throughgoing holes

● Tapped holes



## Globally active. Locally represented.

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