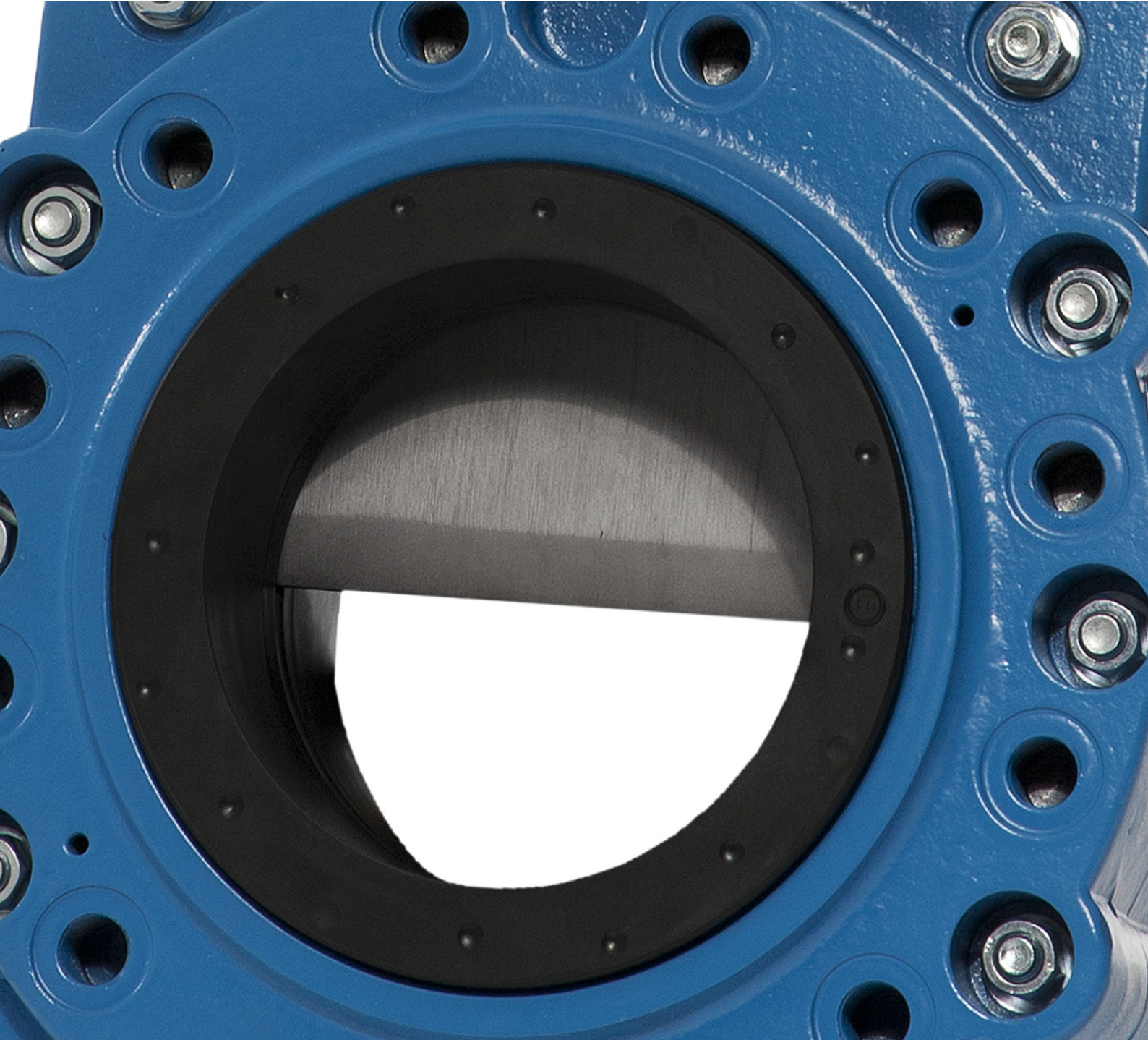


# Knife gate valve SLH and SLX



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

## Knife gate valves SLH and SLX

Stafsjö's knife gate valves SLH and SLX are designed for the most demanding high pressure applications with slurry and other abrasive media. The valves are bi-directional and gives a tight shut-off, independent of pressure direction. A full bore with minimal seat cavity gives excellent flow capacity, and it also reduces stresses and wear on the equipment.

The SLH and SLX have epoxy coated fully lugged valve bodies in nodular iron with integrated purge ports. The seats are flexible in an axial way and seals towards each other in the bore when the valve is in open position, thus protecting internal parts and the gate from the abrasive media. Upon closure, the seats are displaced axially, forming a seal with the gate until it forms a complete closure of the bore and gives a bi-directional tight shut-off. The seats also form a sealing face on the valve flanges saving the need for gaskets. The gate is supplied in high strength stainless steel, coated to give a hard and high wear and corrosion resistance surface. The gland box, with three layers of our TwinPack™ and a box bottom scraper, gives the gate guidance during operation and makes sure that a first-rate sealing is preserved.

Both SLH and SLX have solid top works to give excellent stability during operation. In our standard collection of actuators and accessories there are several types to choose from. For security reason the valves are always supplied ready to be locked in either opened or closed position.

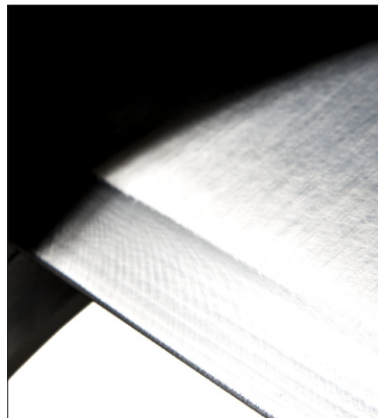
The SLH/SLX valve is designed, manufactured, inspected and tested according to the European Pressure Equipment Directive (PED 97/ 23/EC) category I and II module A1. The valve is CE marked when it is applicable.

Other slurry valves besides these two high pressure valves are the SLV and the fully flanged SLF.



### Optimal valve design for high pressure slurry

A robust valve body with a high strength and wear resistant gate in combination with a unique seat design that maximizes the flow capacity and minimizes the wear, making the SLH and SLX optimal for really demanding high pressure slurry.



### Design for maximized service life

The bevel edge on the gate, the machined gate support in the valve body and the suspension of the seats minimizes wear on the seats during operation, thus maximizing the valves' service life. Reinforcement rings embedded in seats ensure position, shape and strength during valve operation.



### Customized – a standard feature

The SLH/SLX are modular designed and can easily be customized with parts, materials, actuator types and accessories. A modular design also means simple on-site maintenance, which lowers the life cycle cost.

## Design data

Sizes	Flange drilling	Face-to-face dimension	ATEX Design
DN 80-DN 400	EN 1092 PN20 EN 1092 PN25 EN 1092 PN40 EN 1092 PN50 ASME/ANSI B16.5 Class 150 ASME/ANSI B16.5 Class 300 AS 2129 Table F/H	Stafsjö manufacturing standard	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 12266-1:2012 Rate A:</b> 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 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	
Valve type and sizes	bar	Valve type and sizes	bar
<b>SLH 80-400</b>	<b>20</b>	<b>SLH 80-400</b>	<b>20</b>
<b>SLX 80-400</b>	<b>50</b>	<b>SLX 80-400</b>	<b>50</b>

## Basic equipment

A. Valve Body			
Material	Code	Type	Maximum temperature °C
<b>Nodular iron</b>	<b>(L)</b>	<b>EN-JS1020/GGG40</b>	<b>200</b>

*Standard colour: epoxy colour. Thickness 140-200µm. RAL 5015.*

B. Gate			
Valve type	Material	Type	Surface treatment
<b>SLH</b>	<b>Duplex stainless steel</b>	<b>EN 1.4462/S32205/SS2377</b>	<b>Hard anti-stick coated</b>
<b>SLX</b>	<b>Stainless steel</b>	<b>EN 1.4542/S17400/17-4PH</b>	<b>Hard anti-stick coated</b>

*Other materials on request*

C. Seats		
Material	Code	Maximum temperature °C
<b>Natural rubber</b>	<b>(NR)</b>	<b>80</b>
<b>EPDM</b>	<b>(E)</b>	<b>120</b>

## Actuators

Manual	Code	Automatic	Code
<b>Hand wheel</b>	<b>(HWr)</b>	<b>Electrical motor</b>	<b>(EM)</b>
<b>Bevel gear</b>	<b>(BG)</b>	<b>Hydraulic cylinder</b>	<b>(MH)</b>
		<b>Double-acting pneumatic cylinder</b>	<b>(EC)</b>

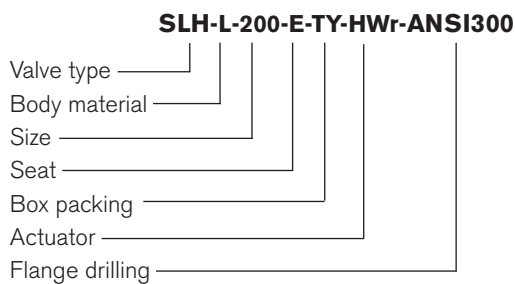
## Accessories

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
Purge ports	(PP)	Standard on all valve sizes	DN 80-DN 150: Rp 1/2", DN 200-DN 350: Rp 3/4", 400 Rp 1"
Locking pin	(LP)	For manually and automatic operated valves	See page 5
Load distribution rings	(LDR)	Available for DN 80 - DN 400	Materials on request
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, 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, IP 65
Magnetic limit switch	(MagLS)	KITA KT-50R for EC 100 - EC 320	2-wire, 5-250 V AC/DC, IP 65
		KITA KT-50N for EC 100 - EC 320	3-wire, 10-30 V DC, IP 65

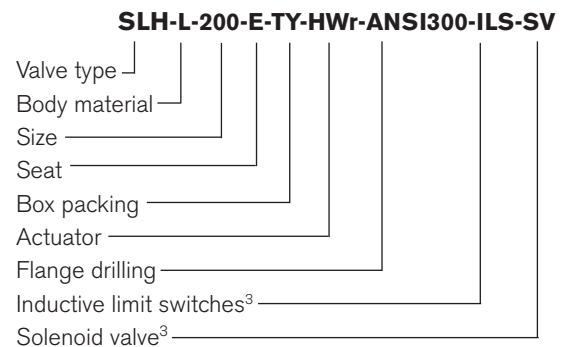
The accessories are described in detail in separate data sheets. For accessories classified according to ATEX, please contact Stafsjö or your local representative.

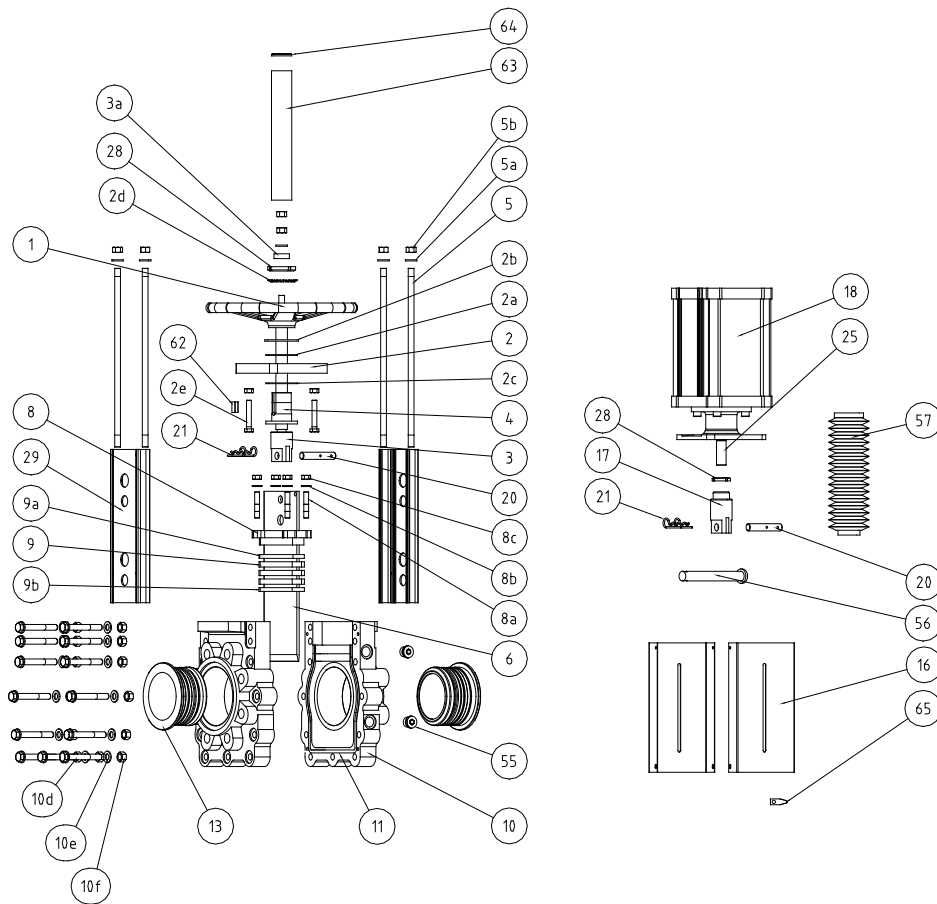
## Specify the Stafsjö valve

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](http://www.stafsjo.com).



<sup>3)</sup> All electronics must be specified in detail.





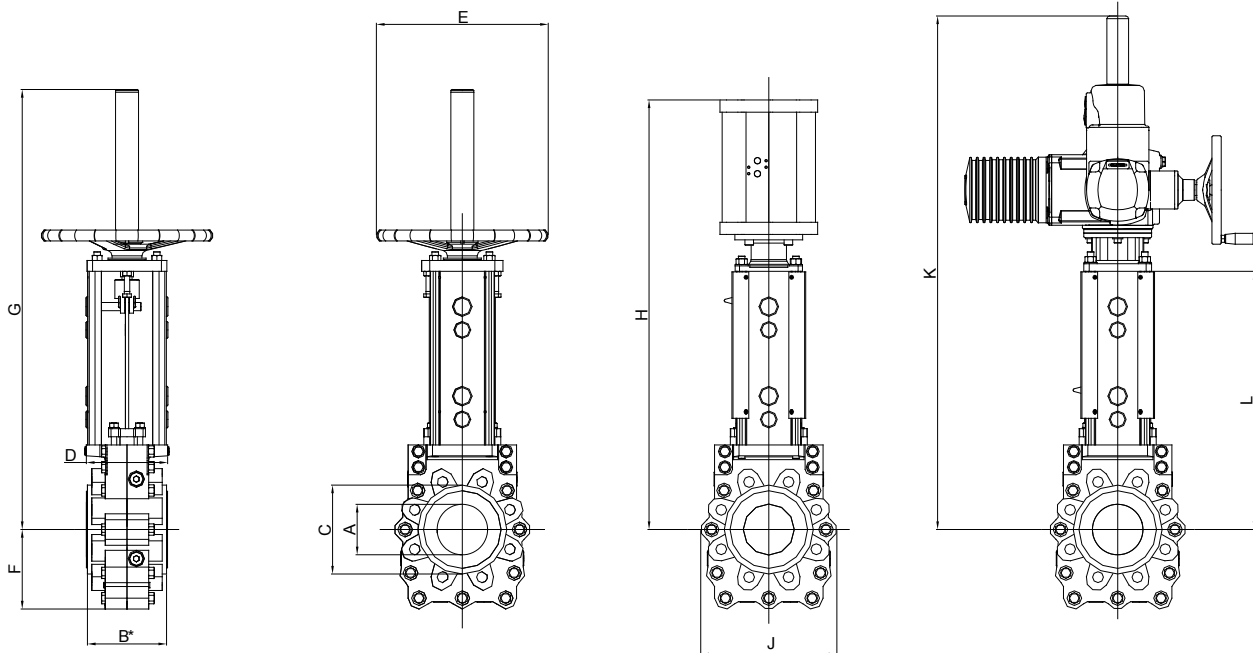
## Part list

Pos.	Part	Material (Name)
1	Hand wheel	Epoxy coated cast iron Ø 200 - Ø 315 (EN-JL1040/GG25), ≥ Ø 400 (EN-JL1030/GG20)
2	Yoke	Epoxy coated steel (1.0038/SS1312)
2a	Bearing	Iglidur XTM
2b	Slide washer	Brass (CW614N/SS 5170)
2c	Bearing	Iglidur XTM
2d	Washer	Stainless steel (EN 1.40305/SS 2346)
2e	Locking nut	Steel, zinc coated
3	Stem with gate clevis	Stainless steel (EN 1.4305/SS 2346) ≥ DN 300: Gate clevis in epoxy coated carbon steel (EN 1.0045/SS 2172)
3a	Stop washer	Stainless steel (EN 1.4301/SS 2333)
3b	Screw	Stainless steel (A2)
3c	Washer	Stainless steel (A2)
4	Stem nut	Brass (CW614N/SS 5170)
5 <sup>3)</sup>	Tie rod	≤ DN 250: Stainless steel (EN 1.4301/SS 2333)
5a	Washer	Stainless steel (A2)
5b	Nut	Stainless steel (A2)
6	Gate	See equipment B
7	Beam	≤ DN 250: Aluminium (EN AW-6063-T6) ≥ DN 300: Epoxy coated steel (EN 1.0038/SS 1312)
8	Gland	Epoxy coated nodular iron (EN-JS1050/GGG50)
8a	Stud bolt	Stainless steel (A2), zinc coated
8b	Washer	Stainless steel (A2), zinc coated
8c	Nut	Stainless steel (A2), zinc coated
9 <sup>2)</sup>	Box packing	See equipment D
9a <sup>2)</sup>	Box bottom scraper	UHMWPE

Pos.	Part	Material (Name)
9b <sup>2)</sup>	Scraper with o-ring	UHMWPE
10/a/b	Valve body	See equipment A
10d	Screw	Steel, zinc coated
10e	Washer	Steel, zinc coated
10f	Nut	Steel, zinc coated
11	Body gasket	PTFE
13 <sup>2)</sup>	Seat	See equipment C
16	Gate guard, not for HW	Epoxy coated carbon steel
17	Gate clevis	Stainless steel (EN 1.4305/SS 2346) ≥ DN 350: Epoxy coated carbon steel (EN 1.0045/SS 2172)
18	Cylinder	See data sheet
20	Clevis pin	Stainless steel (EN 1.4305/SS 2346)
21	Split pin	Stainless steel (EN 1.4305/SS 2343)
25	Piston rod	Stainless steel (EN 1.4305/SS 2346)
28	Locking nut	Stainless steel (EN 1.4305/SS 2346)
29	Beam	≤ DN 250: Aluminium (EN AW-6063-T6) ≥ DN 300: Epoxy coated steel (EN 1.0038/SS 1312)
55	Plug	Steel, zinc coated
56 <sup>1)</sup>	Locking pin	Stainless steel (EN 1.4301/SS 2333) Two is needed for ≥ DN 300.
57 <sup>1)</sup>	Stem protection	Rubber
62	Wedge	Stainless steel
63	Stemtube	Epoxy coated stainless steel (EN 1.0038/SS 1312)
64	Plug	Plastic
65	Gate indicator	Stainless steel (EN 1.4301/SS 2333)

<sup>1)</sup> Optional accessories

<sup>2)</sup> Recommended spare parts



## Main dimensions for SLH/SLX

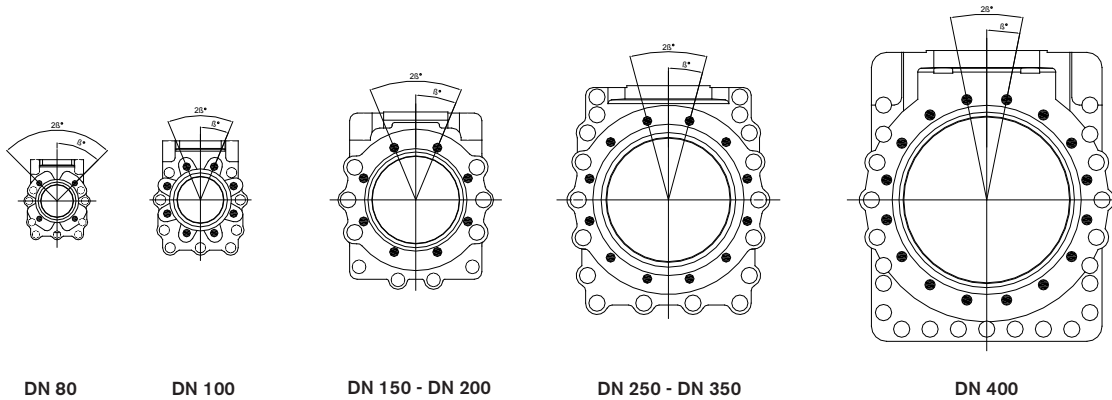
Dimensions (mm)																
DN	A <sup>1</sup>	A <sup>2</sup>	B <sup>1</sup>	B <sup>2</sup>	C	D	E	F	G	H	J	K	L	Weight <sup>3)</sup>	Weight <sup>4)</sup>	
80	80	75	151	146	130	150	315	123	614	730	210	590	420	39	41	
100	100	93	151	146	164	150	400	147	812	858	251	660	476	46	64	
150	150	145	154	149	216	150	520	191	900	1004	323	820	565	87	110	
200	200	190	161	156	271	175	520	237	1133	1177	412	990	683	130	152	
250	250	240	226	221	331	175	630	267	1215	1316	467	1170	765	192	222	
300	300	285	248	242	400	210	-	303	-	1497	537	1350	859	-	324	
350	350	335	257	251	442	210	-	239	-	1641	571	1490	961	-	426	
400	400	385	280	273	500	310	-	374	-	1824	675	1630	1094	-	568	

A<sup>1</sup> Inlet diameter. A<sup>2</sup> Bore diameter.

B<sup>1</sup> Minimum for installation. B<sup>2</sup> face-to-face for installed valve.

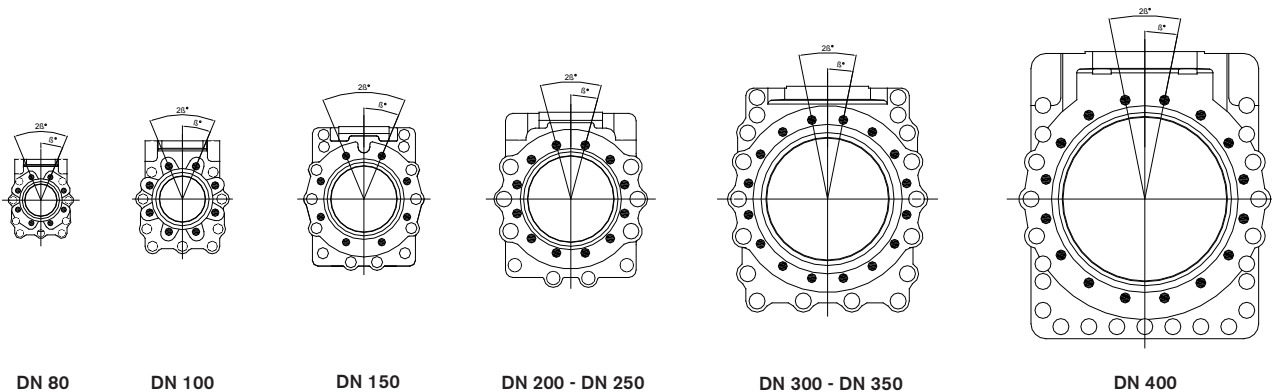
<sup>3)</sup>Weight in kg for valve including hand wheel.

<sup>4)</sup>Weight in kg for valve including double-acting pneumatic cylinder type EC.



## Flange drilling according to EN 1092 PN 20

Flange drilling information (mm)								
DN	80	100	150	200	250	300	350	400
Outside flange diameter	190	230	280	345	405	485	535	600
Bolt circle diameter	152,5	190,5	241,5	298,5	362	432	476	540
Number of tapped holes (●)	4	8	8	8	12	12	12	16
Bolt size	M16	M16	M20	M20	M24	M24	M27	M27
$\beta^\circ$	45	22,5	22,5	22,5	15	15	15	11,25
Depth of tapped holes <sup>1)</sup>	33	33	34	29	57	61	65	70

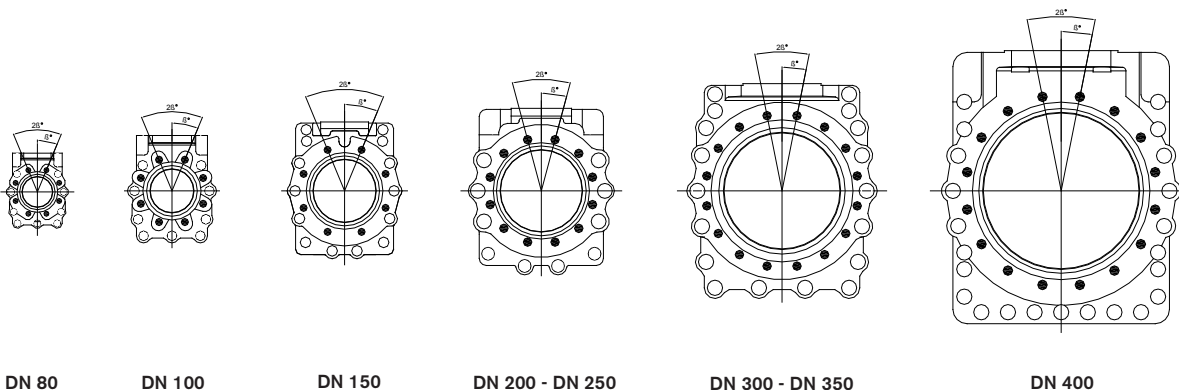


## Flange drilling according to EN 1092 PN 25

Flange drilling information (mm)								
DN	80	100	150	200	250	300	350	400
Outside flange diameter	200	235	300	360	425	485	555	620
Bolt circle diameter	160	190	250	310	370	430	490	550
Number of tapped holes (●)	8	8	8	12	12	16	16	16
Bolt size	M16	M20	M24	M1624	M27	M27	M30	M33
$\beta^\circ$	22,5	22,5	22,5	15	15	11,25	11,25	11,25
Depth of tapped holes <sup>1)</sup>	33	33	34	29	57	61	65	70

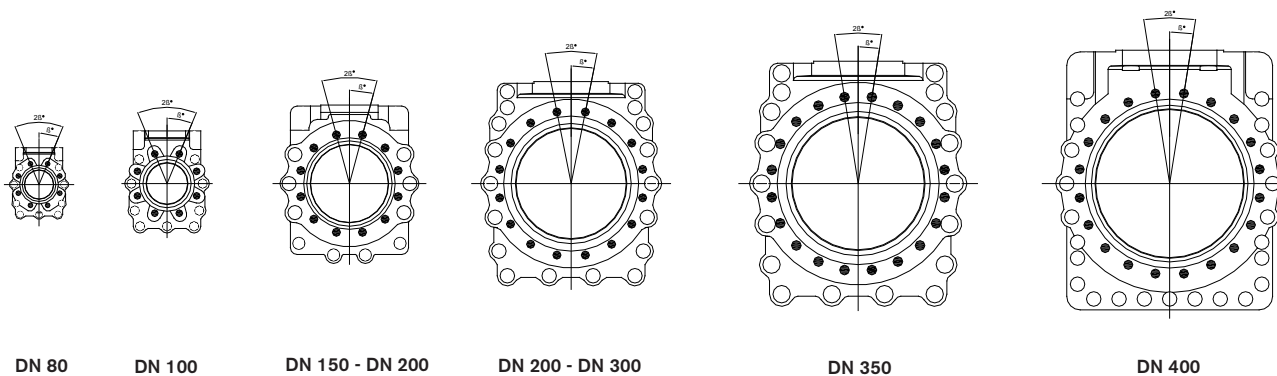
<sup>1)</sup> Add the values with the thickness of flanges and washers.

● Tapped holes



## Flange drilling according to EN 1092 PN 40

Flange drilling information (mm)								
DN	80	100	150	200	250	300	350	400
Outside flange diameter	200	235	300	375	450	515	580	660
Bolt circle diameter	160	190	250	320	385	450	510	585
Number of tapped holes (●)	8	8	8	12	12	16	16	16
Bolt size	M16	M20	M24	M27	M30	M30	M33	M36
$\beta^\circ$	22,5	22,5	22,5	15	15	11,25	11,25	11,25
Depth of tapped holes <sup>1)</sup>	33	33	34	29	57	61	65	70



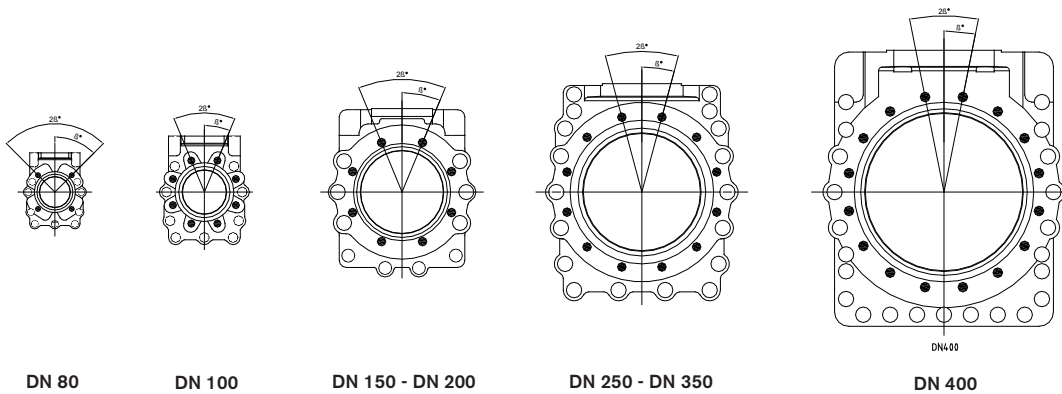
## Flange drilling according to EN 1092 PN 50

Flange drilling information (mm)								
DN	80	100	150	200	250	300	350	400
Outside flange diameter	210	255	320	380	445	520	585	650
Bolt circle diameter	168,5	200	270	330	387,5	451	514,5	571,5
Number of tapped holes (●)	8	8	12	12	16	16	20	20
Bolt size	M20	M20	M20	M24	M27	M30	M30	M33
$\beta^\circ$	22,5	22,5	15	15	11,25	11,25	9	9
Depth of tapped holes <sup>1)</sup>	33	33	34	29	57	61	65	70

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

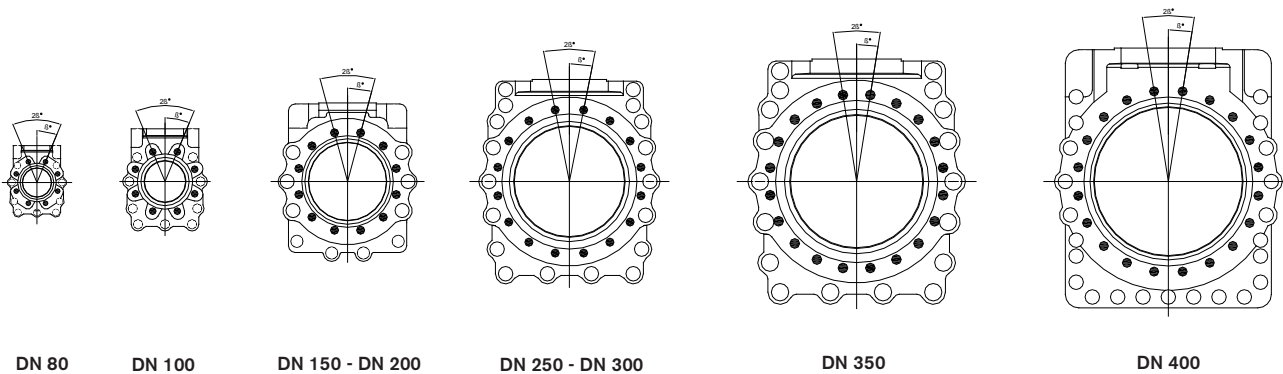
● Tapped holes





## Flange drilling according to ASME/ANSI B16.5 Class 150

Flange drilling information (mm)								
DN	80	100	150	200	250	300	350	400
Outside flange diameter	190,5	228,6	279,4	342,9	406,4	482,6	533,4	596,9
Bolt circle diameter	152,4	190,5	241,3	298,5	362	431,8	476,3	539,8
Number of tapped holes (●)	4	8	8	8	12	12	12	16
Bolt size (UNC)	5/8"-11	5/8"-11	3/4"-10	3/4"-10	7/8"-9	7/8"-9	1"-8	1"-8
$\beta^\circ$	45	22,5	22,5	22,5	15	15	15	11,25
Depth of tapped holes <sup>1)</sup>	33	33	34	29	57	61	65	70

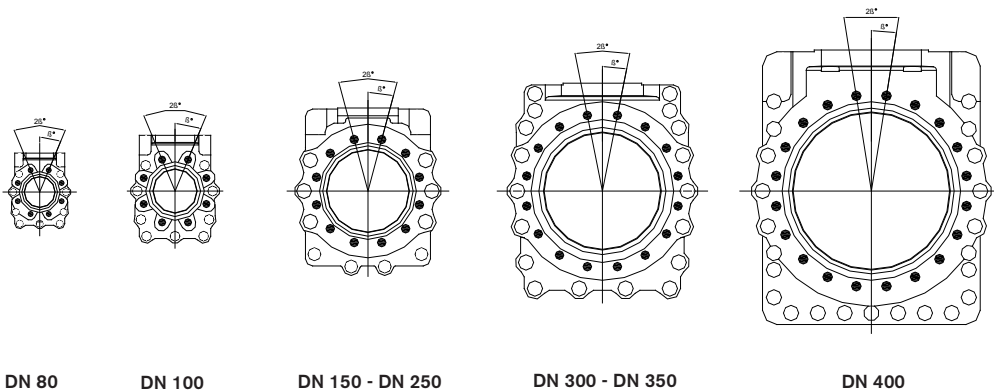


## Flange drilling according to ASME/ANSI B16.5 Class 300

Flange drilling information (mm)								
DN	80	100	150	200	250	300	350	400
Outside flange diameter	209,6	254	317,5	381	444,5	520,7	584,2	647,7
Bolt circle diameter	168,1	200,2	269,7	330,2	387,4	450,9	514,4	571,5
Number of tapped holes (●)	8	8	12	12	16	16	20	20
Bolt size (UNC)	3/4"-10	3/4"-10	3/4"-10	7/8"-9	1"-8	1 1/8"-7	1 1/8"-7	1 1/4"-7
$\beta^\circ$	22,5	22,5	15	15	11,25	11,25	9	9
Depth of tapped holes <sup>1)</sup>	33	33	34	29	57	61	65	70

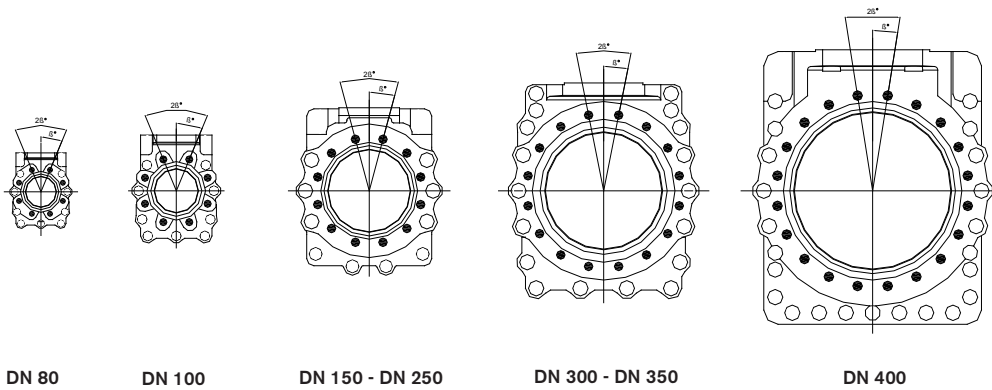
<sup>1)</sup> Add the values with the thickness of flanges and washers.

● Tapped holes



## Flange drilling according to AS Table F

Flange drilling information (mm)								
DN	80	100	150	200	250	300	350	400
Outside flange diameter	205	230	305	370	430	490	550	610
Bolt circle diameter	165	191	260	324	381	438	495	552
Number of tapped holes (●)	8	8	12	12	12	16	16	20
Bolt size	M16	M16	M20	M20	M24	M24	M27	M27
$\beta^\circ$	22,5	22,5	15	15	15	11,25	11,25	9
Depth of tapped holes <sup>1)</sup>	33	33	34	29	57	61	65	70



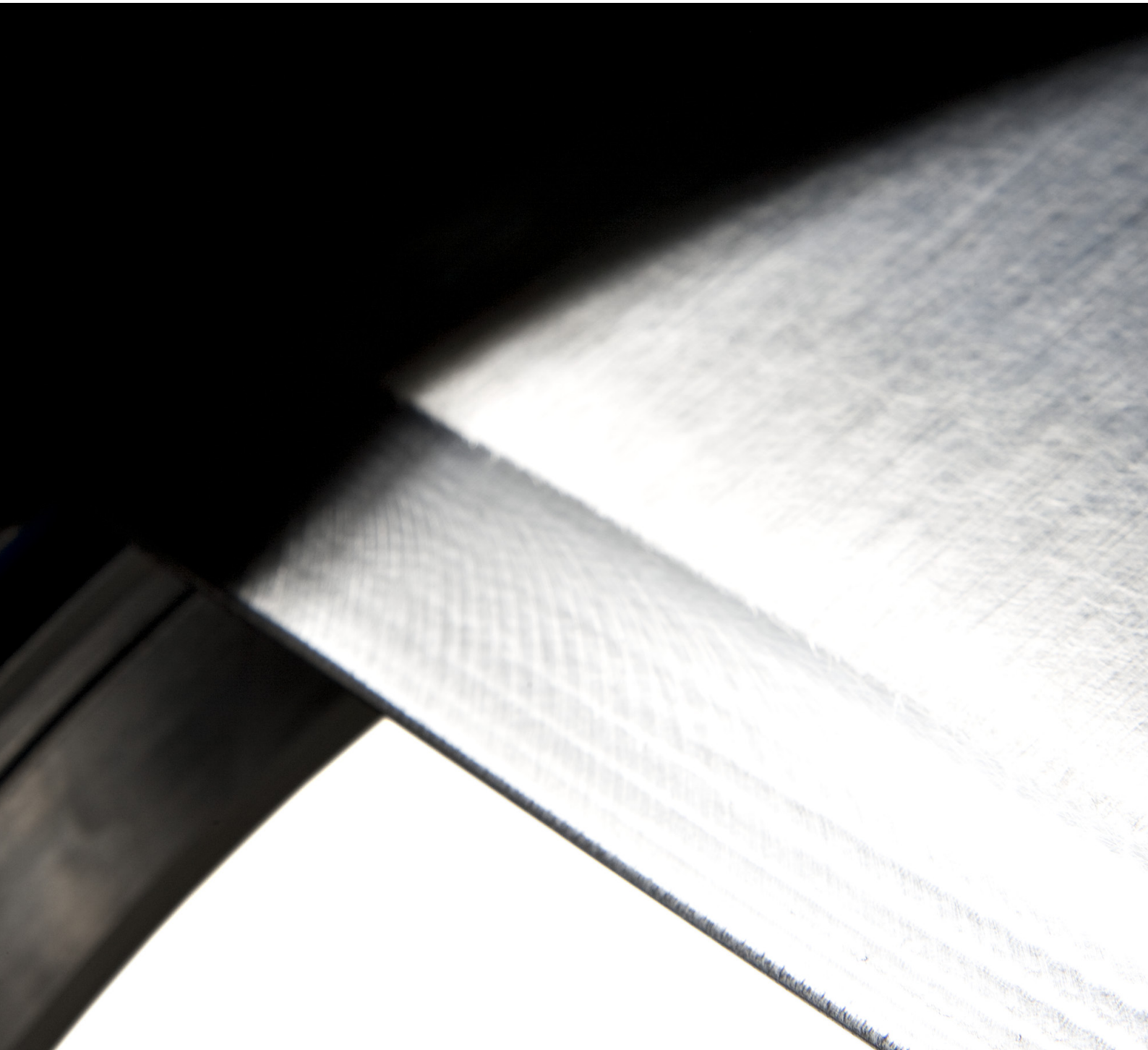
## Flange drilling according to AS Table H

Flange drilling information (mm)								
DN	80	100	150	200	250	300	350	400
Outside flange diameter	205	230	305	370	430	490	550	610
Bolt circle diameter	165	191	260	324	381	438	495	552
Number of tapped holes (●)	8	8	12	12	12	16	16	20
Bolt size	M16	M16	M20	M20	M24	M24	M27	M27
$\beta^\circ$	22,5	22,5	15	15	15	11,25	11,25	9
Depth of tapped holes <sup>1)</sup>	33	33	34	29	57	61	65	70

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

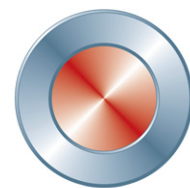
● Tapped holes

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



## Globally active. Locally represented.

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