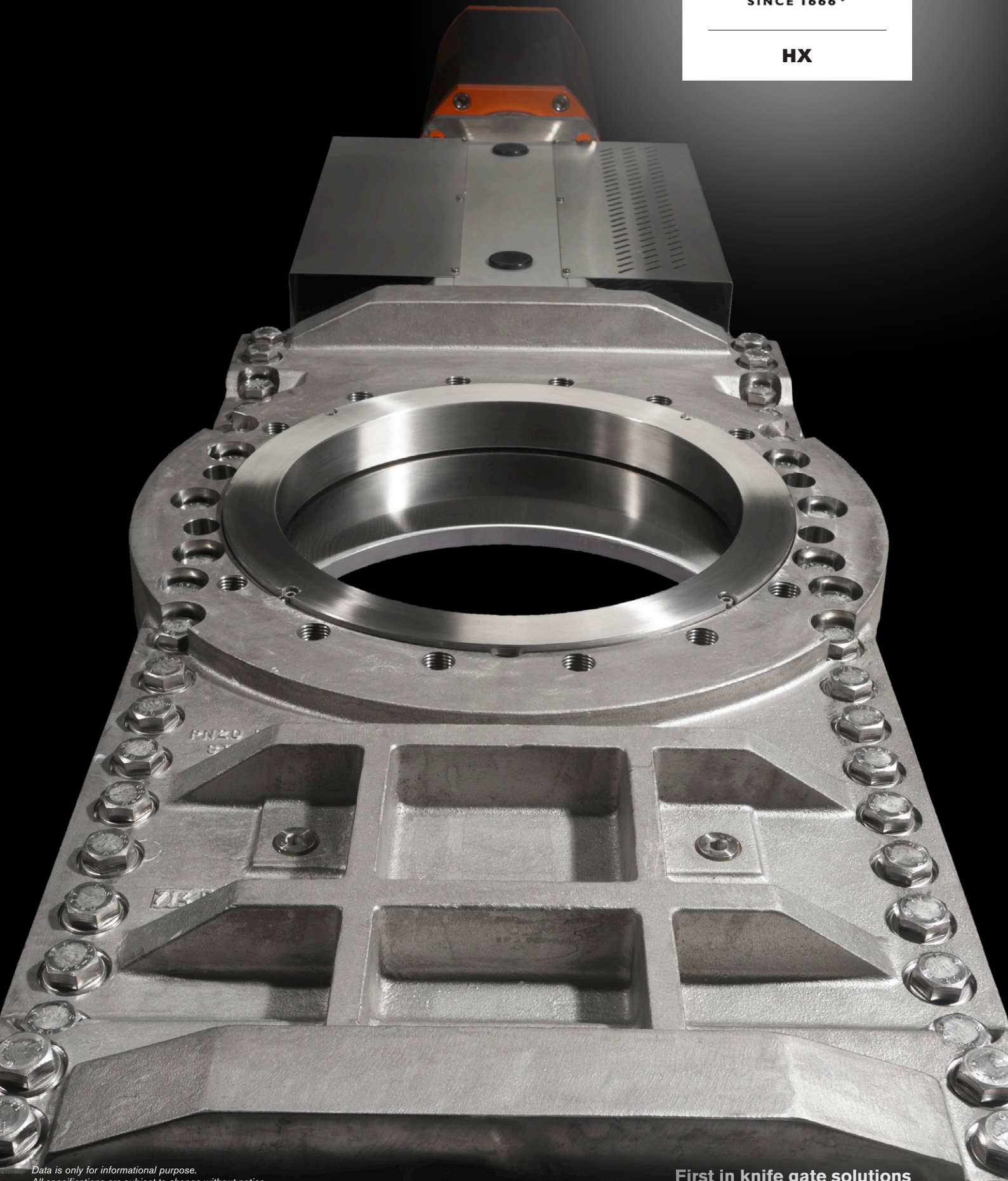


**Stafsjö**  
SINCE 1666

**HX**



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

**First in knife gate solutions**

## Knife gate valve HX

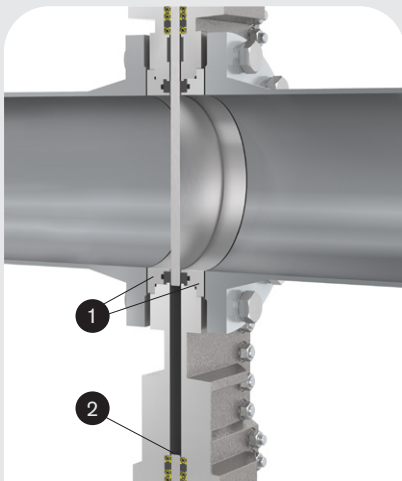
Stafsjö's knife gate valve HX is an extreme high pressure valve for really demanding applications. It features excellent flow characteristics and provide a tight seal independent of pressure direction. The through-going gate ensure reliable shut-off on highly concentrated media such as pulp stock up to 18 % concentrations, liquor, powder and ash.

The HX valve is modular designed and it can easily be customized in materials, with actuators and related automation accessories to different process conditions. The valve has an extra solid two piece precision machined valve body with a high strength top works that provide an essential and precise gate alignment. As standard it is available with a valve body in stainless steel, but it can also be supplied in a range of high alloy materials such as Duplex, 254 SMO and Titanium.

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

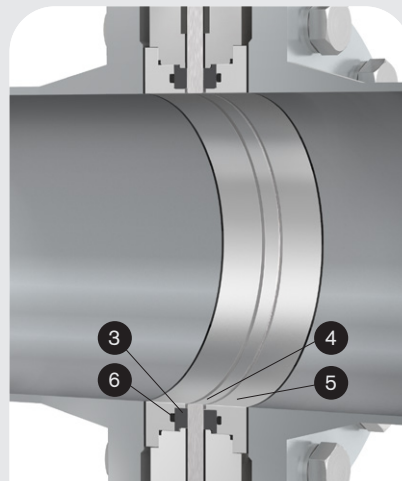


## Product features



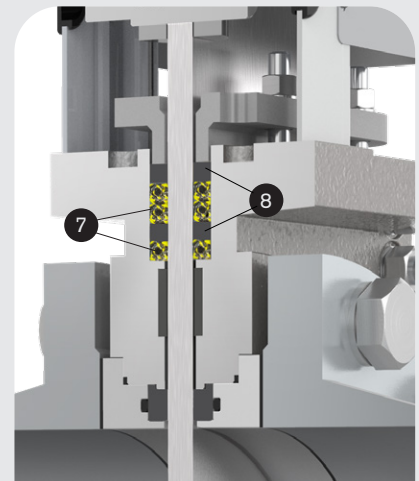
### Reliable through-going and bi-directional zero leakage shut-off

The through-going gate is guided and internally supported throughout the entire stroke. It can operate smoothly through difficult and highly concentrated media. The retainer ring system (1) on both side of the gate provide a tight seal independent of pressure direction. On each opening stroke the lower machined flat gate orifice (2) force media upward and back into the pipe.



### Full bore with outstanding flow characteristics

When the HX is in open position you have an unobstructed flow path where no media can collect. The enlarged and reinforced PTFE seats (3) are protected by the gate (4) and retainer rings (5). The internal backup o-rings (6) keep the seats pressurized against the gate.



### Reinforced gland box sealing system enable a tight seal to environment

The increased body and gate thickness makes the gland box sealing system steady and reliable at high pressure loads. Stafsjö's TwinPack (7) braids and dual reinforced PTFE scrapers (8) ensure no media reaches surrounding environment.



## Pressure class

Max working pressure at 110 °C		Max differential pressure at 110 °C	
DN	bar	DN	bar
200 - 800	20	200 - 800	20
900	16	900	16

## HX configurations

### Standard in stainless steel

Sizes: DN 200 - DN 900

Valve body: Stainless steel EN 1.4408

Retainer rings: Stainless steel EN 1.4408

Gate: Stainless steel EN 1.4404, AISI 316L

Gate: Duplex stainless steel EN 1.4462, S32205 (DN 400 - DN 900)

Box packing: TwinPack including extra PTFE scrapers

Top works: Stainless steel tie rods encapsulated in aluminum beams

including stainless steel gate guards on automated valves

Options and others from below.

### Options

#### Valve body<sup>1)</sup>

Stainless steel EN 1.4408 (Max +400 °C)

Duplex stainless steel EN 1.4470 (Max +250 °C)

254 SMO Stainless steel (Max +399 °C)

Titanium ASTM B265 Grade 2 (Max +220 °C)

#### Retainer rings

Stainless steel EN 1.4408

Duplex stainless steel EN 1.4470

254 SMO stainless steel

Titanium ASTM B265 Grade 2

#### Gate material and surface treatments

Stainless steel EN 1.4404, AISI 316L

Duplex stainless steel EN 1.4462, S32205

254 SMO stainless steel

Titanium ASTM B265 Grade 2

Hard chromed surface

Extra polished surface (max Ra 0,8)

#### Seats

PTFE with o-ring in Nitrile, EPDM or FKM

#### Box packings

TwinPack with PTFE scrapers

WhitePack with PTFE scrapers

#### Top works

Stainless steel tie rods encapsulated in aluminum beams

Stainless steel pillars<sup>2)</sup> or beams

#### Actuators

Hand wheel with non-rising stem

Chain wheel

Bevel gear

Double-acting pneumatic cylinder

Single-acting pneumatic cylinder

Electric actuator

Hydraulic actuator

#### Flange drillings

EN 1092 PN 16

EN 1092 PN 25

EN 1092 PN 50

ASME/ANSI B16.5 Class 150

ASME/ANSI B16.5 Class 300

#### Accessories

Limit switches, solenoid valves, positioners, mechanical lockouts, stem extensions etc. See Stafsjö's accessory data sheet for further information.

<sup>1)</sup> The valve body is as standard supplied with G1/2" purge ports.

<sup>2)</sup> Standard on valves supplied with valve body in Duplex, 254 SMO or Titanium.

## Design standards

### Face-to-face dimensions

Stafsjö manufacturing standard.

### 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 according to EN 10204.

### 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)

## Seat service temperatures

PTFE with o-ring Nitrile: -25 °C - +100 °C

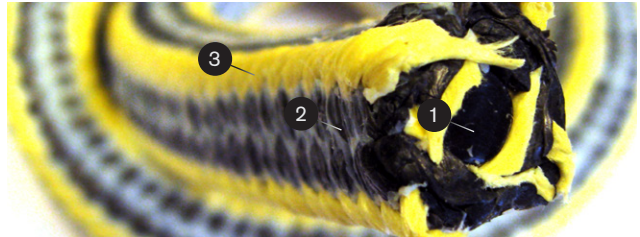
PTFE with o-ring FKM: -15 °C - +180 °C

## Box packing service temperatures

TwinPack with PTFE scrapers: -60 °C - +260 °C

WhitePack with PTFE scrapers: -60 °C - +260 °C

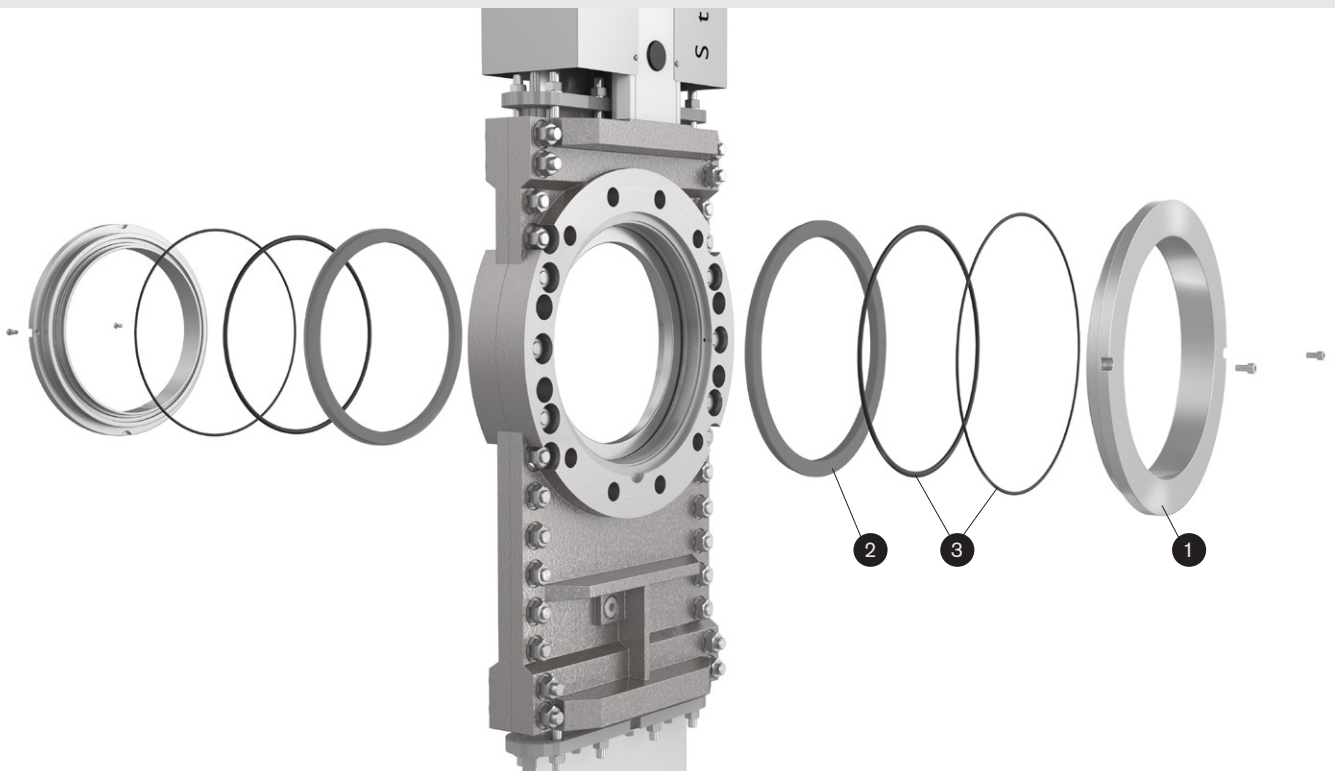
*Media type, pressure and operating intervals may also affect the seat and box packing material in different ways. Contact Stafsjö for advice.*



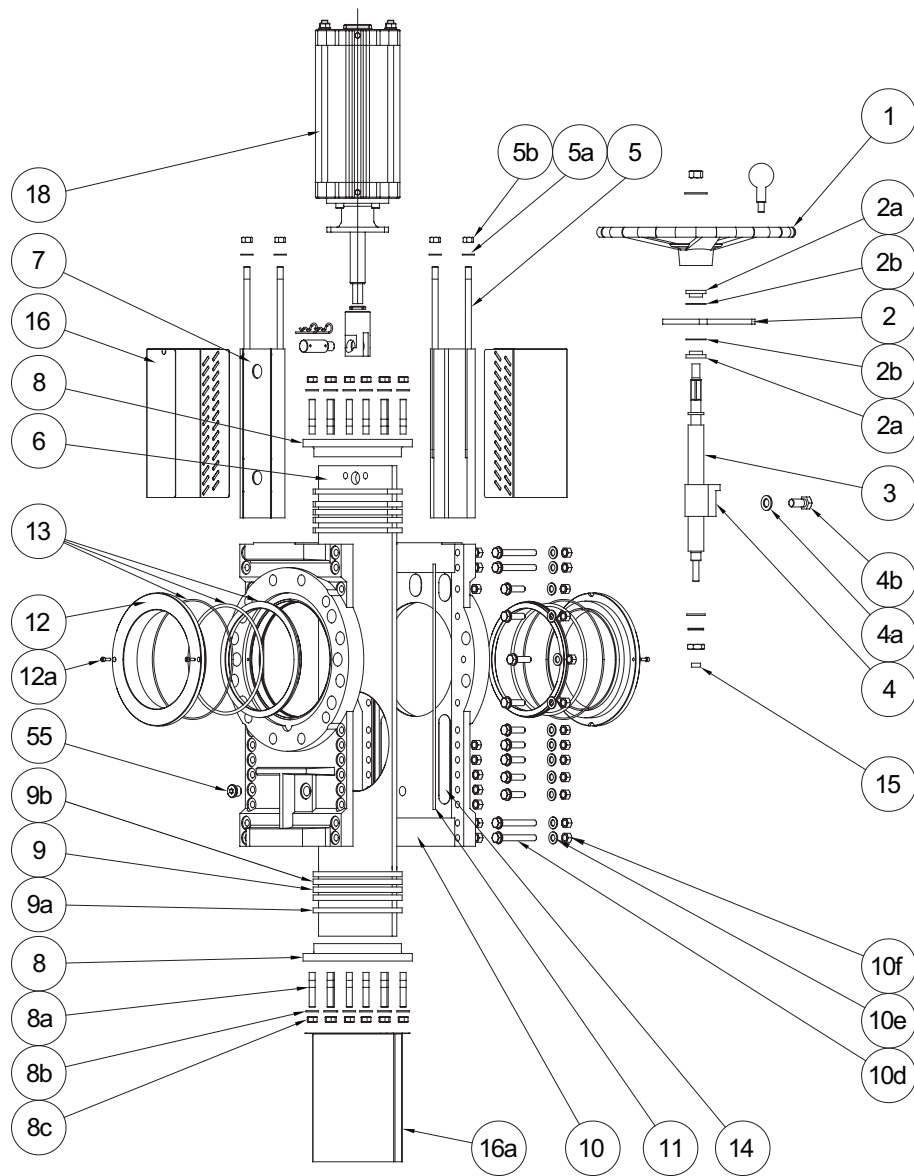
### A first rate external sealing with TwinPack

Stafsjö's TwinPack offers high mechanical strength, excellent chemical resistance and a tight seal to atmosphere. The TwinPack braid is made up by an elastic silicon rubber core (1) surrounded by diagonally interlocked graphite filled PTFE (2) with aramid fiber reinforced corners (3). The TwinPack braids resist pH 2-13 and temperatures -60 °C up to 260 °C.

## The retainer ring system lowers life cycle cost



Stafsjö's retainer ring system enable smooth and easy maintenance directly on the site. The retainer rings (1) hold the seats (2) and back-up o-rings (3) in exact correct position as the gate strokes. They are mechanically locked and can easily be removed for seat change.



## Part list

Pos.	Part	Material
1	Hand wheel	Coated cast iron EN-JL1030, GG20
2	Yoke	Stainless steel EN 1.4301
2a	Bearing	Brass
2b	Slide washer	POM
3	Stem	Stainless steel EN 1.4305
4	Stem nut	Brass
4a	Washer	Stainless steel A2
4b	Screw	Stainless steel A2
5 <sup>5)</sup>	Tie rod	Stainless steel EN 1.4301
5a	Washer	Stainless steel A2
5b	Nut	Stainless steel A2
6	Gate	See options on page 3
7	Beam	Anodized aluminium <sup>5)</sup>
8	Gland	Stainless steel EN 1.4408
8a <sup>6)</sup>	Stud bolt	Stainless steel A2

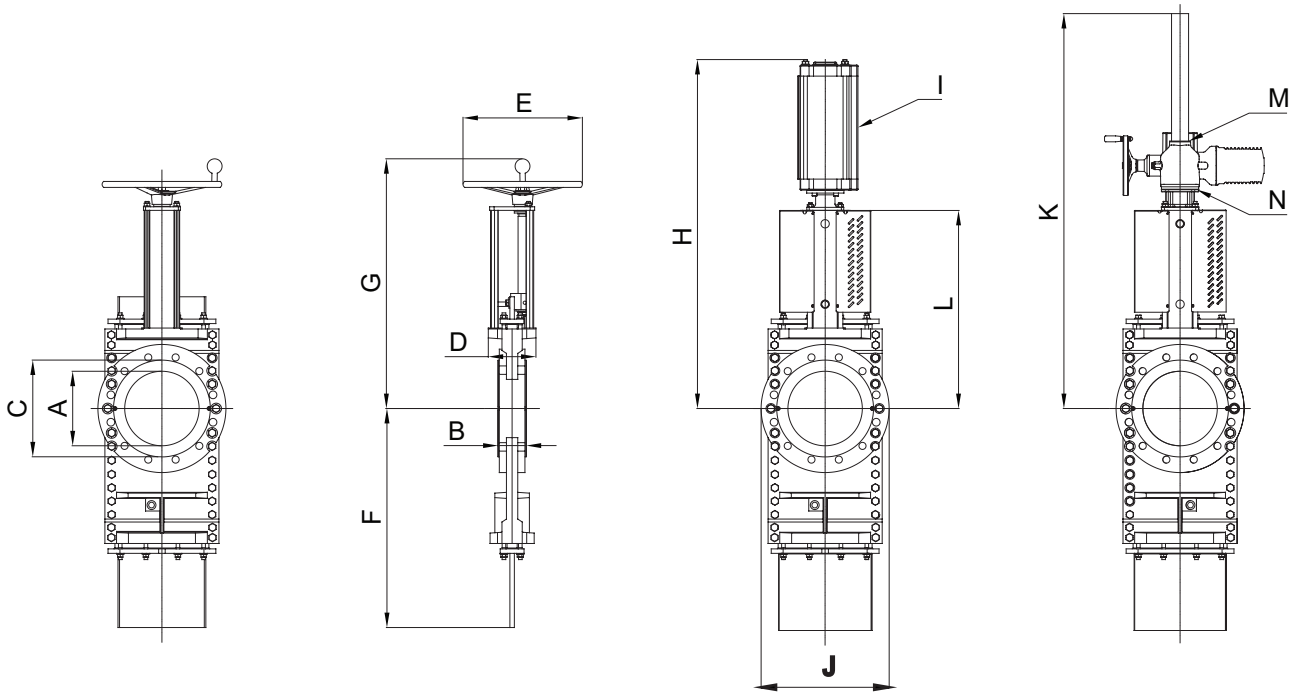
<sup>4)</sup> Recommended spare parts

<sup>5)</sup> Replaced by pillars in stainless steel (EN 1.4436 or EN 1.4404) on HX in Titanium and 254 SMO

Pos.	Part	Material
8b	Washer	Stainless steel A2 <sup>6)</sup>
8c	Nut	Stainless steel A2 <sup>6)</sup>
9/a/b <sup>4)</sup>	Box packing	See options on page 3
10	Valve body	See options on page 3
10d	Screw	Stainless steel A4
10e	Washer	Stainless steel A4
10f	Nut	Stainless steel A4
11	Body gasket	PTFE or FKM
12	Retainer rings	See options on page 3
12a	Locking screw	Stainless steel A4
13 <sup>4)</sup>	Seat and o-rings	See options on page 3
14a	Guide strip	PTFE
15	Bushing	Oil-bronze
16/a	Gate guards, not for HW	Stainless steel EN 1.4301 <sup>7)</sup>
18	Cylinder	See data sheet
55	Plug	Stainless steel A4

<sup>6)</sup> Replaced by Titanium or stainless steel A4 on HX in Titanium and 254 SMO

<sup>7)</sup> Replaced by stainless steel EN 1.4404 on HX in Titanium and 254 SMO



## Main dimensions (mm)

DN	A	B	C	D	E	F	G	H	I	J	L	K	M	N	kg <sup>1)</sup>
200	200	90	268	152	400	607	746	1029	SC160	370	575	775	SA 10.2	F10/A	115
250	250	95	324	160	400	735	838	1227	SC200	1152	665	915	SA 10.2	F10/A	180
300	300	114	378	184	400	910	922	1409	SC250	500	749	1049	SA 10.2	F10/A	290
350	350	125	438	192	-	1100	-	1670	SC250	575	910	1260	SA 10.2	F10/A	380
400	400	125	490	210	520	1200	1122	1808	SC250	650	998	1398	SA 14.2	F14/A	560
450	450	150	539	334	520	1380	1305	2036	SC320	698	1173	1673	SA 14.2	F14/A	890
500	500	150	596	310	520	1600	1380	2186	SC320	745	1248	1748	SA 14.2	F14/A	950
600	600	170	708	310	-	1740	-	2376	SC320	880	1383	1983	SA 14.2	F14/A	1250
700	700	180	796	450	-	1994	-	2626	SC320	1035	1533	2333	SA 14.2	F14/A	1550
800	780	190	903	320	-	2205	-	-	-	1130	1681	2481	or	or	1840
900	880	210	1028	340	-	2506	-	-	-	1270	1898	3115	or	or	3785

1) Weight in kg for the valve with double-acting pneumatic cylinder, DN 800-DN 900 with electric actuator.  
or: Sizing on request.

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

## Flange drilling according to EN 1092 PN16

DN	200	250	300	350	400	450	500	600	700	800	900
Bolt circle diameter (mm)	295	355	410	470	525	585	650	770	840	950	-
Number of throughgoing bolts	4	4	4	4	4	4	4	4	4	4	-
Number of tapped hole/side	8	8	8	12	12	16	16	16	16	20	-
Bolt size	M20	M24	M24	M24	M27	M27	M30	M33	M33	M36	-
Bolt lengths <sup>1)</sup> (mm)	29	29	34	38	41	44	44	44	49	50	-

## Flange drilling according to EN 1092 PN25

DN	200	250	300	350	400	450	500	600	700	800	900
Bolt circle diameter (mm)	310	370	430	490	550	600	660	770	875	990	1086
Number of throughgoing bolts	4	4	4	4	4	4	4	4	4	4	4
Number of tapped hole/side	8	8	12	12	12	16	16	16	20	20	24
Bolt size	M24	M27	M27	M30	M33	M33	M33	M36	M39	M45	M45
Bolt lengths <sup>1)</sup> (mm)	29	29	34	38	41	44	44	44	49	50	50

## Flange drilling according to EN 1092 PN50

DN	200	250	300	350	400	450	500	600	700	800	900
Bolt circle diameter (mm)	330	387,5	451	514,5	571,5	628,5	686	813	940	1054	1168
Number of throughgoing bolts	4	4	4	4	4	4	4	4	4	4	4
Number of tapped hole/side	8	12	12	16	16	20	20	20	24	24	28
Bolt size	M24	M27	M30	M30	M33	M33	M33	M39	M42	M48	M52
Bolt lengths <sup>1)</sup> (mm)	29	29	34	38	41	44	44	44	49	50	50

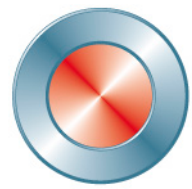
## Flange drilling according to ASME/ANSI B16.5 & B16.47 Class 150

DN	200	250	300	350	400	450	500	600	700	800	900
Bolt circle diameter (mm)	298,5	362	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	4	4
Number of tapped hole/side	4	8	8	8	12	12	16	16	24	24	28
Bolt size (UNC)	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	1 1/4-7	1 1/2-6	1 1/2-6
Bolt lengths <sup>1)</sup> (mm)	29	29	34	38	41	44	44	44	49	50	50

## Flange drilling according to ASME/ANSI B16.5 & B16.47 Class 300

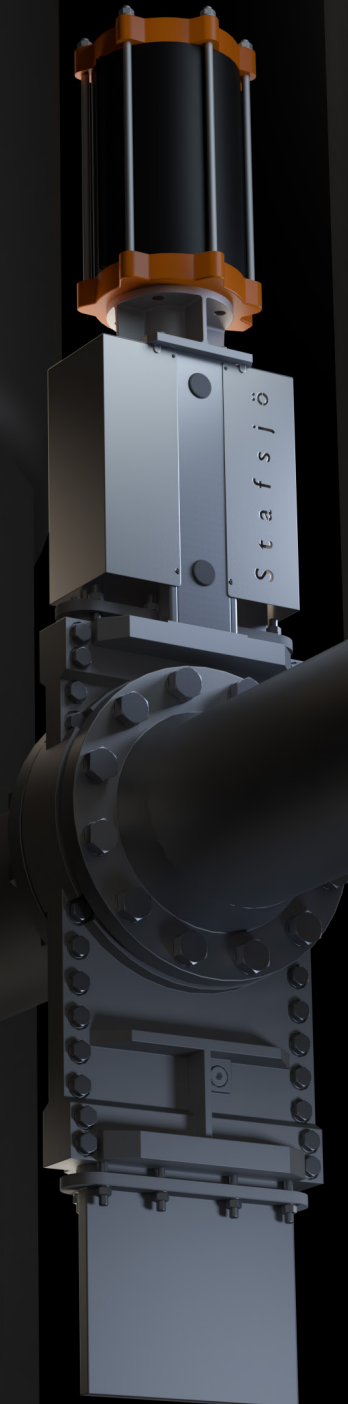
DN	200	250	300	350	400	450	500	600	700	800	900
Bolt circle diameter (mm)	330,2	387,4	450,9	514,4	571,5	628,7	685,8	812,8	939,8	1054,1	1168,4
Number of throughgoing bolts	4	4	4	4	4	4	4	4	4	4	4
Number of tapped hole/side	8	12	12	16	16	20	20	20	24	24	28
Bolt size (UNC)	7/8-9	1-8	1 1/8-7	1 1/8-7	1 1/4-7	1 1/4-7	1 1/4-7	1 1/2-6	1 5/8-6	1 7/8-6	2 - 4,5
Bolt lengths <sup>1)</sup> (mm)	29	29	34	38	41	44	44	44	49	50	50

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



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