Stafsjö
SINCE 1666

HP

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

First in knife gate solutions

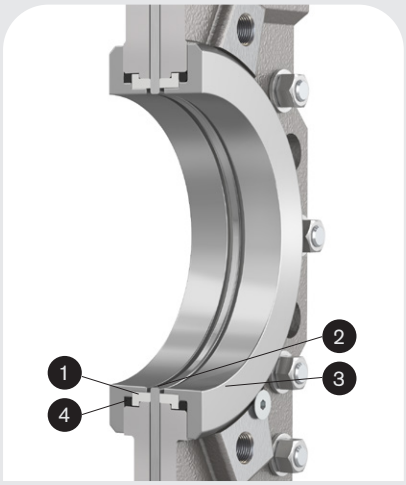
Knife gate valve HP

Stafsjö's HP is a high pressure through-going knife gate valve with superior flow characteristics, offering reliable bi-directional zero leakage shut-off on highly concentrated media and static media columns. It can operate on different media such as pulp stock up to 18 % concentrations, slurry, liqour, ash and granulate.

The HP 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 a rigid 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 and 254 SMO.

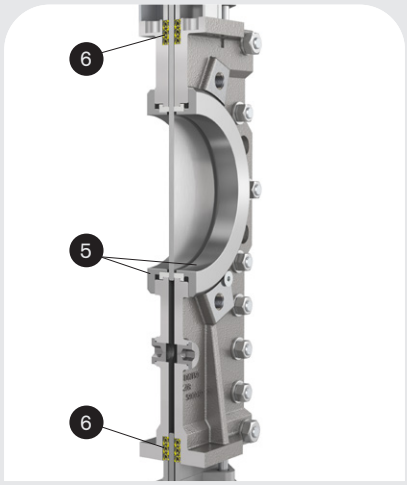
The HP valve is one out of five of Stafsjö's through-going knife gate valves. HG is the standard version while the HL is a slim line version. HPT is a high pressure version entirely made in Titanium and the HX is an extreme high pressure version.

Product features



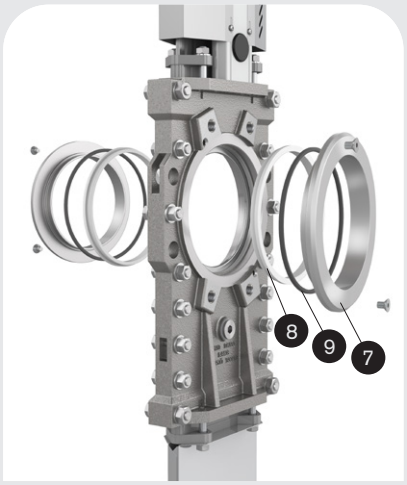
Full bore with outstanding flow characteristics

In opened position the HP provide an unobstructed flow path where no media can collect. The PTFE seats (1) are protected by the gate (2) and retainer rings (3) and the internal back-up o-rings (4) keep the seats constantly pressurized against the gate.



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

The gate is guided throughout the entire stroke and operates smoothly through difficult and highly concentrated media. The retainer ring system (5) on both side of the gate provide a tight seal independent of pressure direction. The gland box sealing system with three layers of Stafsjö's Twin-Pack (6) ensures that no media reaches surrounding environment.



The retainer ring system lowers life cycle cost

Stafsjö's retainer ring system enable smooth and easy maintance directly on the site. The retainer rings (7) hold the seats (8) and back-up o-rings (9) in exact correct position as the gate strokes. They are mechanically locked and can easily be removed for seat change.

Pressure class

Max working pressure at 20 °C		Max differential pressure at 20 °C	
DN	bar	DN	bar
300 - 800	10	300 - 800	10
900	6	900	6

HP configuration

Standard in stainless steel

Sizes: DN 300 - DN 900
Valve body: Stainless steel EN 1.4408
Retainer rings: Stainless steel EN 1.4408
Gate: Duplex stainless steel EN 1.4462, S32205
Box packing: TwinPack
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[1)]

Stainless steel EN 1.4408
Duplex stainless steel EN 1.4470
Stainless steel 254 SMO

Retainer rings

Stainless steel EN 1.4408
Duplex stainless steel EN 1.4470
Stainless steel 254 SMO

Gate material and surface treatments

Duplex stainless steel EN 1.4462, S32205
Stainless steel 254 SMO
Hard chromed surface
Extra polished surface (max Ra 0,8)

Seats

PTFE with o-ring in Nitrile, EPDM or FPM/FKM

Box packings

TwinPack, WhitePack
Extra scrapers in UHMW-PE, PTFE or brass

Top works

Stainless steel tie rods encapsulated in aluminum beams
Stainless steel pillars[2)] 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 10
EN 1092 PN 16
ASME/ANSI B16.5 Class 150 and B16.47 Class 150, series A
JIS B 2238 10K

Accessories

See Stafsjö's accessory data sheet for further information on optional limit switches, solenoid valves, positioners, mechanical lockouts etc.

Design standards

Face-to-face dimensions

Stafsjö manufacturing standard. Option in 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 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) or 1 D (Zone 20)

Seat service temperatures

PTFE with o-ring Nitrile: -25 °C - +100 °C
PTFE with o-ring EPDM: -25 °C - +120 °C
PTFE with o-ring FPM/FKM: -15 °C - +180 °C

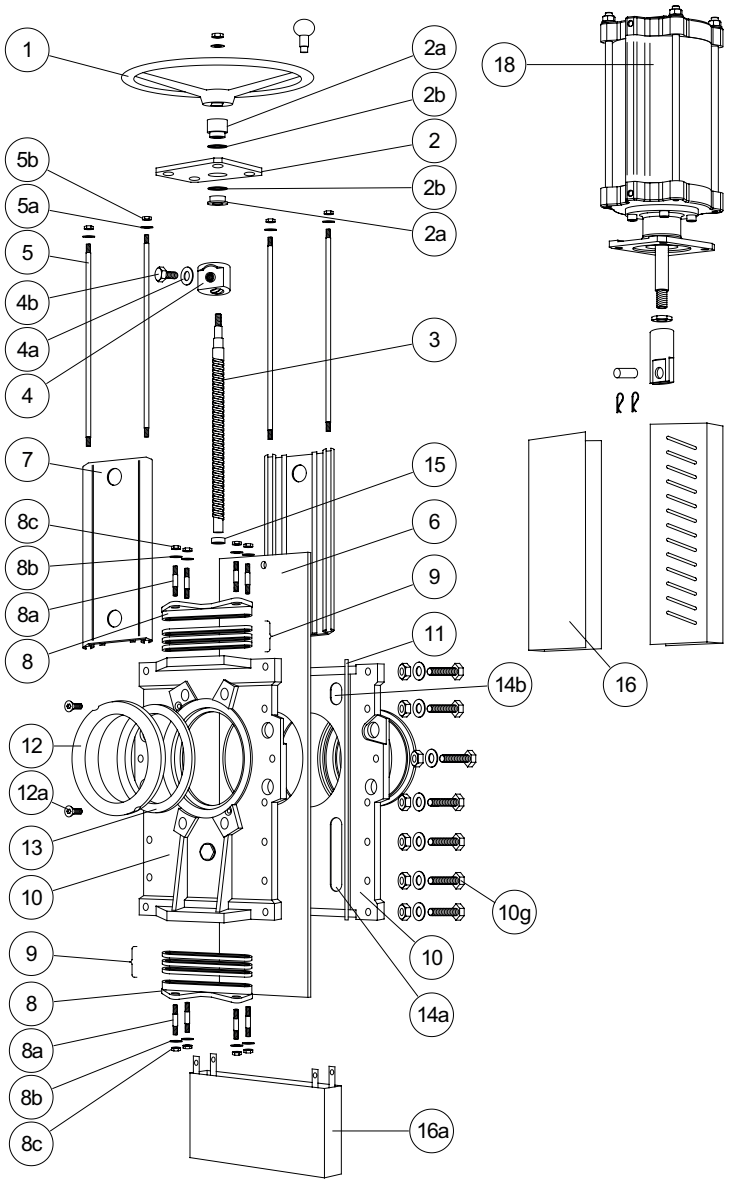
Box packing service temperatures

TwinPack: -60 °C - +260 °C
WhitePack: -60 °C - +260 °C

Additional scrapers in the gland box

UHMW-PE: -200 °C - +85 °C
PTFE: -80 °C - +260 °C
Brass: -125 °C - +200 °C

1) The valve body is as standard supplied with G1/2" purge ports
2) Standard on valves supplied with valve body in Duplex or 254 SMO

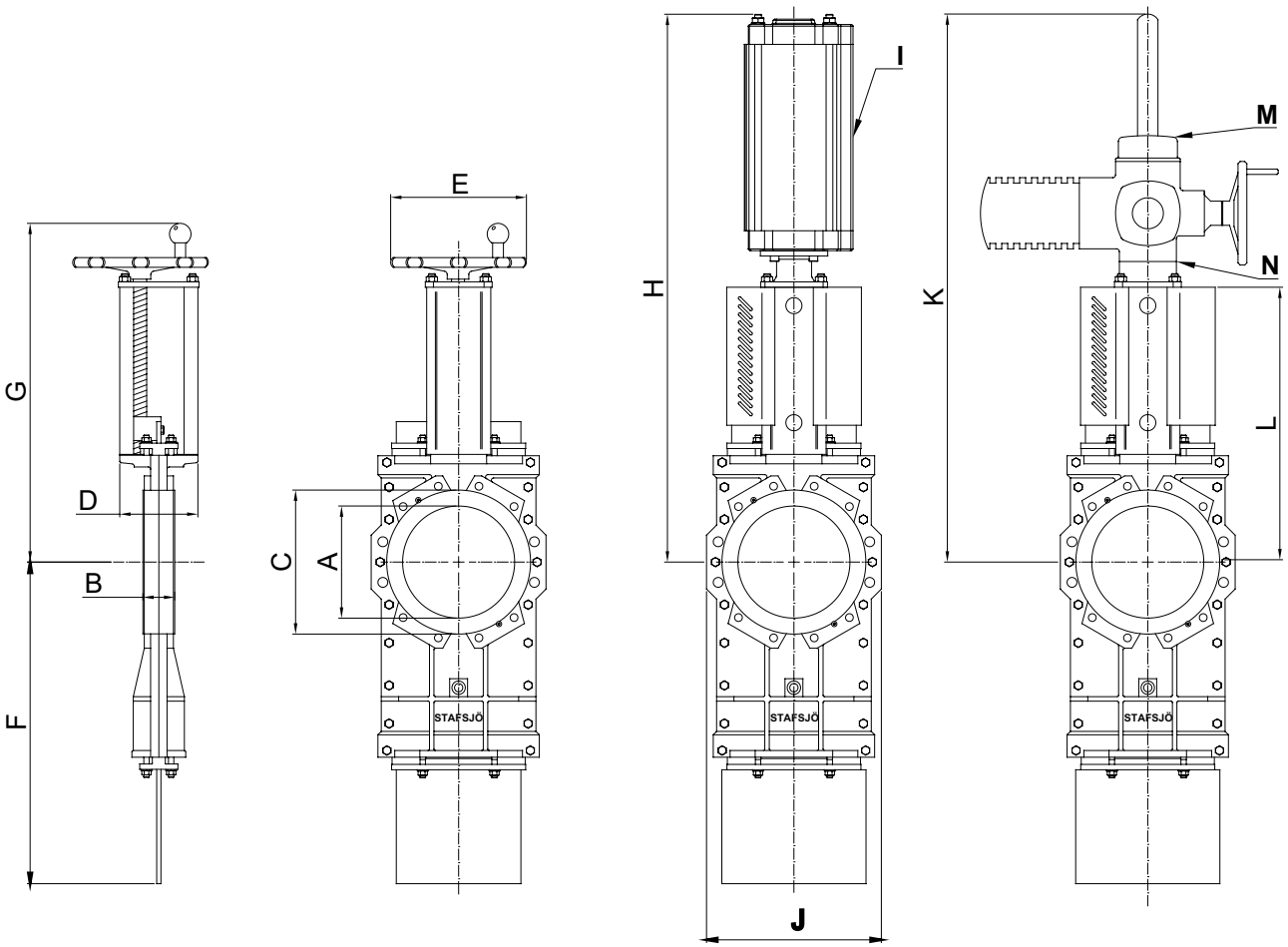


Part list

Pos	Detail	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 1.4104
4	Stem nut	Brass
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 options on page 3
7	Beam	Anodized aluminum
8	Gland	Stainless steel EN 1.4408

Pos	Detail	Material
8a	Stud bolt	Stainless steel A2
8b	Washer	Stainless steel A2
8c	Nut	Stainless steel A2
9[1)]	Box packing	See options on page 3
10	Valve body	See options on page 3
10g	Valve body boltings	Stainless steel A2
11	Body gasket	PTFE
12	Retainer ring	See options on page 3
12a	Locking screw	Stainless steel A2
13[1)]	Seat	See options on page 3
14a	Guiding pads	PTFE
14b	Guiding pads	PTFE
15	Bushing	Oil-bronze
16/a	Gate guards	Stainless steel EN 1.4301
18	Pneumatic cylinder	See data sheet

[1)] Recommended spare parts



Main dimensions (mm)

DN	A	B	C	D	E	F	G	H	I[1)]	J	K	L	M[2)]	N[3)]	kg[4)]
300	302	78	375	180	400	865	893	1332	SC200	455	1420	720	SA 10.2	F10/A	170
350	332	78	425	175	400	980	948	1417	SC200	510	1505	775	SA 10.2	F10/A	200
400	380	89	480	210	520	1070	1033	1633	SC200	570	1650	873	SA 10.2	F10/A	290
450	420	89	534	220	520	1210	1124	1773	SC250	625	1790	963	SA 10.2	F10/A	425
500	470	114	580	320	635	1412	1299	1990	SC250	690	2020	1138	SA 14.2	F14/A	670
600	540	122	679	350	635	1553	1336	2113	SC320	800	2135	1175	SA 14.2	F14/A	820
700	665	128	800	320	635	1891	1556	2458	SC320	995	2505	1395	SA 14.6	F14/A	1300
800	760	128	900	320	635	2132	1721	2723	SC320	1070	2770	1560	SA 14.6	F14/A	1700
900	880	128	1010	310	-	2450	-	3018	SC320	1168	2940	1740	SA 14.6	F14/A	1960

1) Recommended sizing of double-acting pneumatic cylinder type SC at normal operation with 5 bar air pressure. For other operating conditions, contact Stafsjö or your local representative for advice.
2) Recommended sizing of Auma SA electric motors at normal operation. For other operating conditions, contact Stafsjö or your local representative for advice.
3) Valve and Auma SA interface. The electric motors are mounted as standard according to ISO 5210 connection A (rising stem).
4) Weight in kg for valve with hand wheel (HW). DN 900 with double-acting pneumatic cylinder.
Main dimensions are only for information. Contact Stafsjö for certified drawings.

Flange drilling according to EN 1092 PN10

DN	300	350	400	450	500	600	700	800	900
Bolt circle diameter (mm)	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 holes/side	8	12	12	16	16	16	20	20	24
Bolt size	M20	M20	M24	M24	M24	M27	M27	M30	M30
Bolt lengths[1] (mm)	20	20	25	25	27	28	28	31	31

Flange drilling according to EN 1092 PN16

DN	300	350	400	450	500	700	800	900
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
Screw lengths[1] (mm)	20	20	25	25	27	28	31	31

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

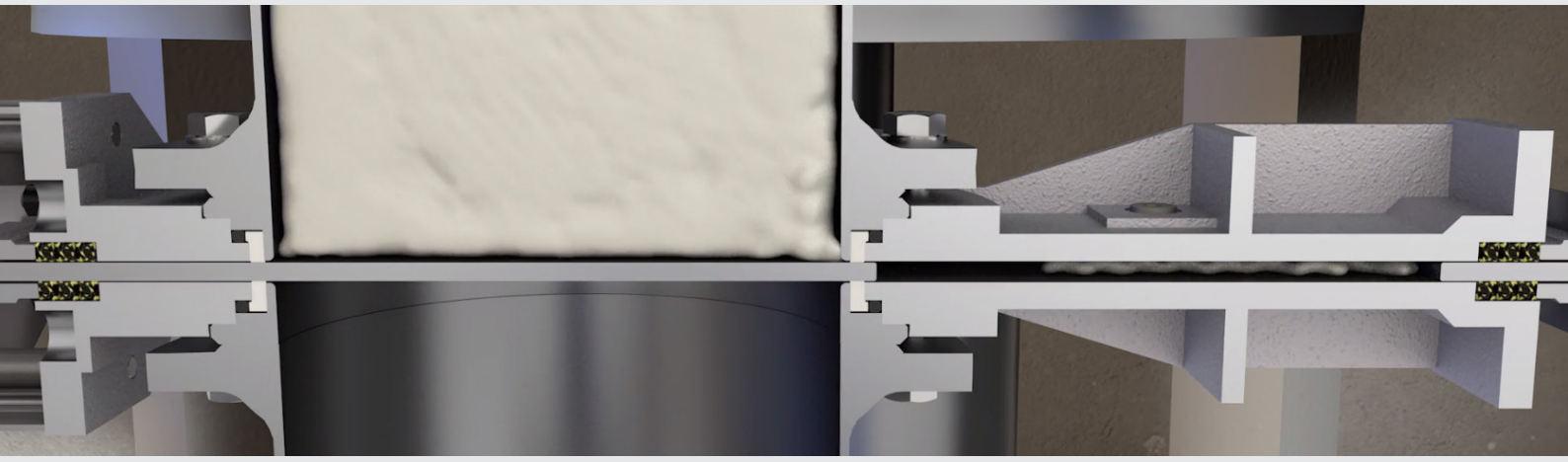
DN	300	350	400	450	500	600	700	800	900
Bolt circle diameter (mm)	431,8	476,3	539,8	577,9	635	749,3	863,6	977,9	1085,9
Number of throughgoing bolts	4	4	4	4	4	4	4	4	4
Number of tapped hole/side	8	8	12	12	16	16	24	24	28
Bolt size (UNC)	7/8-9	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7	1 1/4-7	1 1/2-6	11/2-6
Screw lengths[1] (mm)	20	20	25	25	27	28	28	31	31

Flange drilling according to JIS B 2238 10K

DN	300	350	400	450	500	600	700	800	900
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
Screw lengths[1] (mm)	20	20	25	25	27	28	28	31	31

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

Ideal pulp tower isolation valve



Pulp tower isolations require full bore and cavity free valves to assure a smooth pulp stock feed. It is crucial the valve ensure a safe and tight shut-off to avoid dewatering the pulp stock and at maintenance to guarantee the work can be performed safely on related process equipment. High pulp concentrations in the range 7 - 14 % are common and place special requirements on the knife gate valve. Stafsjö's HP has the technology to master the challenges.

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