

Stafsjö
SINCE 1666

HG



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All specifications are subject to change without notice.*

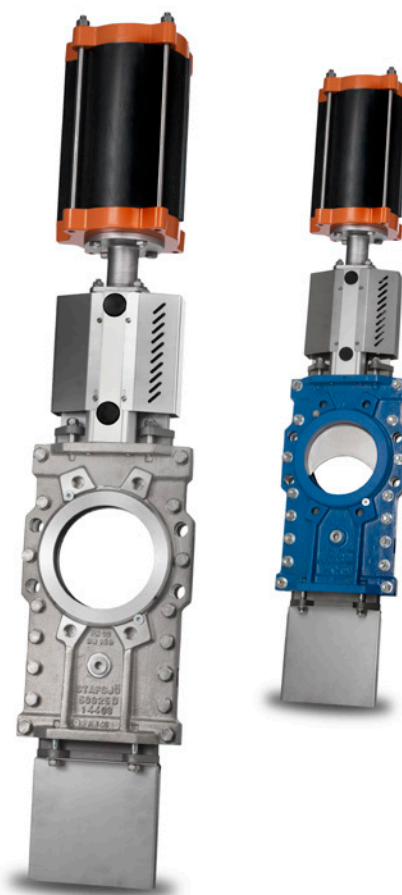
First in knife gate solutions

Knife gate valve HG

Stafsjö's HG is a 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, liquor, ash and granulate. It is also widely used in junc traps, mostly as inlet valve with our RKO as discharge valve.

The HG 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 or nodular iron, but it can also be supplied in a range of high alloy materials such as Duplex and 254 SMO.

The HG valve is one out of five of Stafsjö's through-going knife gate valves. 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 and the HX is an extreme high pressure version.

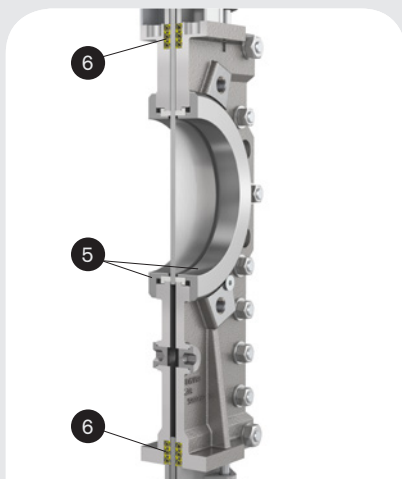


Product features



Full bore with outstanding flow characteristics

While the HG is in open position you have 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. Polyurethane retainers/seats is an option for abrasive processes while the metal only is an extreme high temperature option.



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. Extra scrapers or double gland can be used for the most demanding services.



The retainer ring system extend service life and makes it easy to process customize HG

The retainer rings (7) hold the seats (8) and the 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. Both the retainer rings and seats are available in different materials which makes it easy to customize HG to different process conditions.

Pressure class

Max working pressure at 68 °F		Max differential pressure at 68 °F	
DN	psi/bar	DN	psi/bar
80 - 250	150/10	80 - 250	150/10
300 - 800	90/6	300 - 800	90/6
900 - 1200	60/4	900 - 1200	60/4

HG configurations

Standard in stainless steel	Standard in nodular iron
<p>Sizes: 3" - 48"</p> <p>Valve body: Stainless steel EN 1.4408</p> <p>Retainer rings: Stainless steel EN 1.4408</p> <p>Gate: Stainless steel EN 1.4404, AISI 316L</p> <p>Box packing: TwinPack</p> <p>Top works: Stainless steel tie rods encapsulated in aluminum beams up to 40" and stainless steel beams on larger ones including stainless steel gate guards on automated valves</p> <p>Seat, actuator, flange drilling and accessories available from options below</p>	<p>Sizes: 3" - 24"</p> <p>Valve body: Nodular iron EN 5.3105</p> <p>Retainer rings: Nodular iron EN 5.3105, EN-JS1050, GGG50</p> <p>Gate: Stainless steel EN 1.4404, AISI 316L</p> <p>Box packing: TwinPack</p> <p>Top works: Stainless steel tie rods encapsulated in aluminum beams including stainless steel gate guards on automated valve</p> <p>Seat, actuator, flange drilling and accessories available from options below</p>
Options	
<p>Valve body¹⁾</p> <p>Stainless steel EN 1.4408 (Max +752 °F)</p> <p>Ductile iron EN 5.3105 (Max +662 °F)</p> <p>Duplex stainless steel EN 1.4470 (Max +482 °F)</p> <p>254 SMO Stainless steel (Max +750 °F)</p> <p>Retainer rings</p> <p>Stainless steel EN 1.4408</p> <p>Nodular iron EN 5.3105, EN-JS1050, GGG50</p> <p>Duplex stainless steel EN 1.4470</p> <p>254 SMO stainless steel</p> <p>Polyurethane</p> <p>Gate material and surface treatments</p> <p>Stainless steel EN 1.4404, AISI 316L</p> <p>Duplex stainless steel EN 1.4462, S32205</p> <p>254 SMO stainless steel</p> <p>Hard chromed surface</p> <p>Extra polished surface (max Ra 0,8)</p> <p>Seats</p> <p>PTFE with o-ring in Nitrile, EPDM or FKM</p> <p>FDA/EC 1935/2004 approved PTFE</p> <p>Polyurethane</p> <p>Stainless steel metal seat with grafoil tape or o-rings in Nitrile, EPDM or FKM</p> <p>Box packings</p> <p>TwinPack, WhitePack, Graphite or FDA/EC 1935/2004 approved PTFE</p> <p>Extra scrapers in UHMW-PE, PTFE or brass</p>	<p>Top works</p> <p>Stainless steel tie rods encapsulated in aluminum beams</p> <p>Stainless steel pillars²⁾ or beams</p> <p>Actuators</p> <p>Hand wheel with non-rising stem</p> <p>Chain wheel</p> <p>Bevel gear</p> <p>Double-acting pneumatic cylinders</p> <p>Single-acting pneumatic cylinders</p> <p>Electric actuators</p> <p>Hydraulic actuator</p> <p>Flange drillings</p> <p>EN 1092 PN 10</p> <p>EN 1092 PN 16</p> <p>ASME/ANSI B16.5 Class 150 and B16.47 Class 150, series A</p> <p>JIS B 2238 10K</p> <p>AS 2129 Table D and E</p> <p>BS 10 Table D</p> <p>Accessories</p> <p>Limit switches, solenoid valves, positioners, mechanical lockouts, V-port, double gland, stem extensions etc. See Stafsjö's accessory data sheet for further information.</p>

¹⁾ The valve body is as standard supplied with purge ports from 4": G1/2"

²⁾ Standard on valves supplied with valve body in Duplex or 254 SMO

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 68 °F according to EN 12266-1:2009 rate A. No visually detectable leakage is allowed for duration of the test. Rate A is not applicable on metal seated valves.

On request 2.2 test report and 3.1 inspection certificate according to EN 10204.

Corrosion protection

Non-corrosive resistant materials are coated in colour RAL5015 as standard to fulfill the requirements in EN ISO 12944 class C3. Optional coatings include EN ISO 12944 class C4 or C5.

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: -13 °F - +212 °F

PTFE with o-ring EPDM: -13 °F - +248 °F

PTFE with o-ring FKM: + 5 °F - +356 °F

Polyurethane: -13 °F - +194 °F

Box packing service temperatures

TwinPack: -76 °F - +500 °F

WhitePack: -76 °F - +500 °F

PTFE: -328 °F - +536 °F

Graphite: -328 °F - +1112 °F

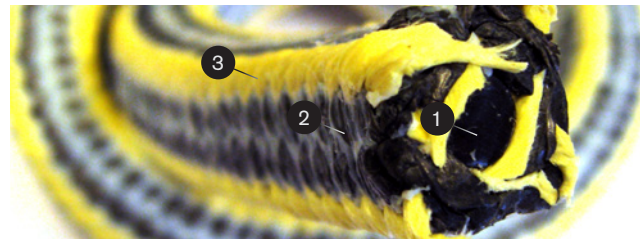
Additional scrapers in the gland box

UHMW-PE: -328 °F - +185 °F

PTFE: -112 °F - +500 °F

Brass: -193 °F - +392 °F

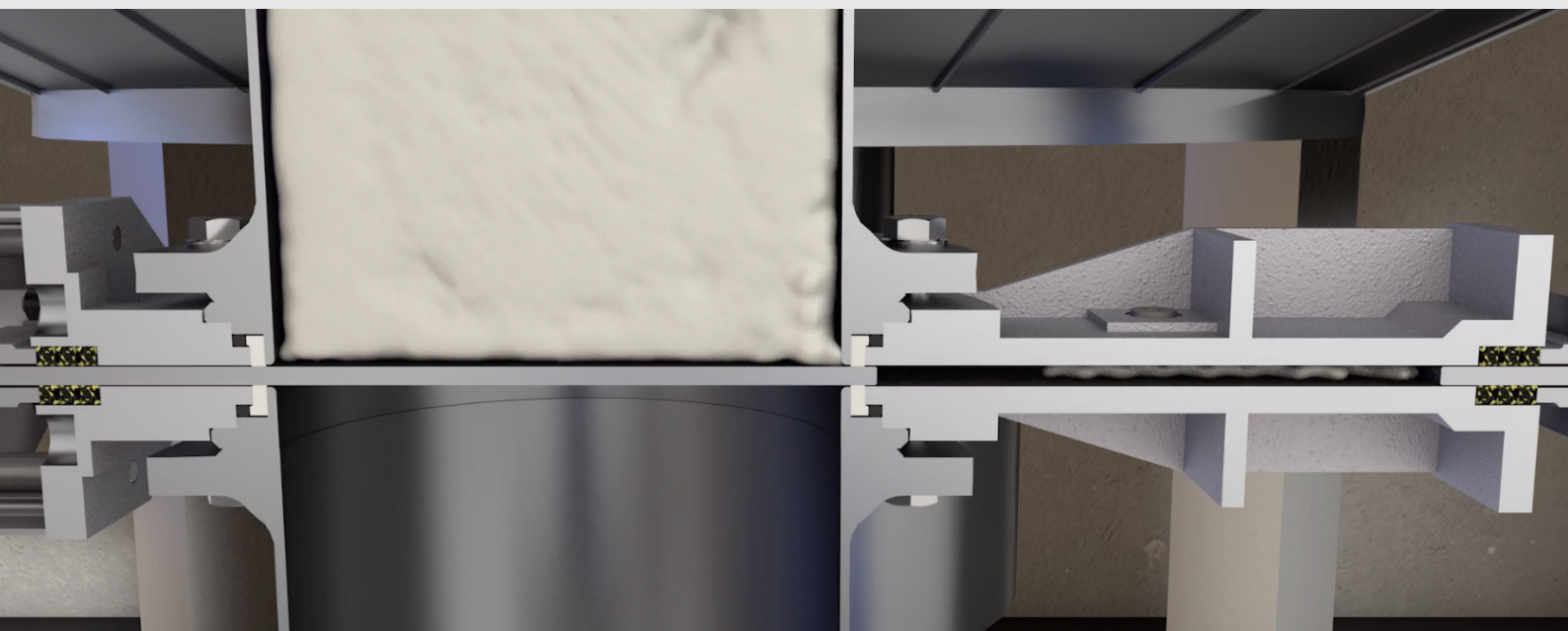
Media type, pressure and operating intervals may also affect the seat and box packing material in different ways. Contact Stafsjö for advice.



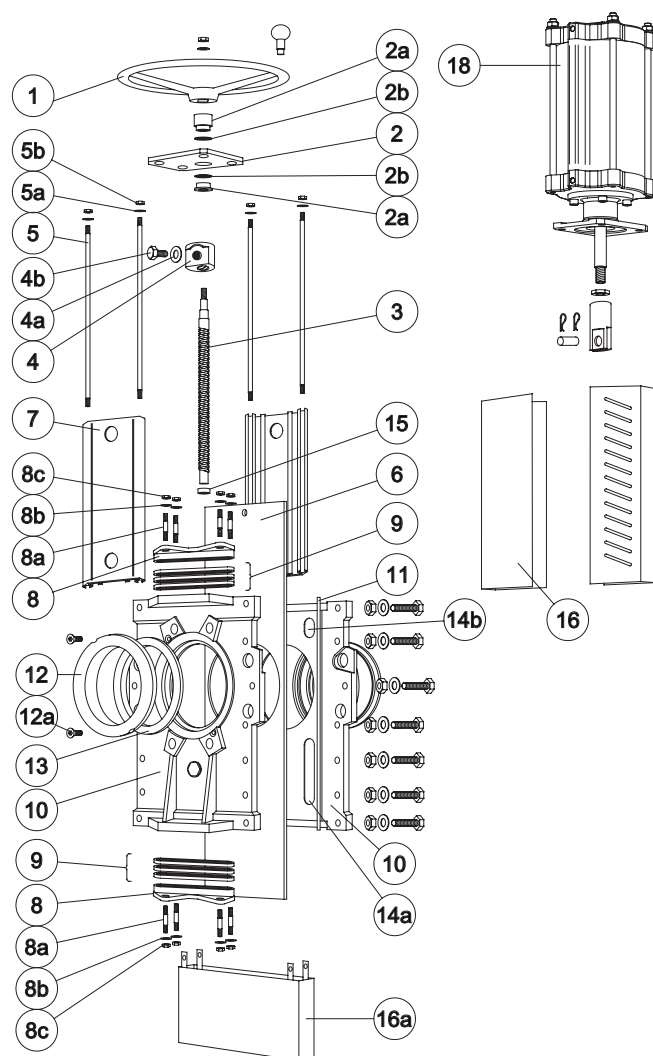
A first rate external sealing with TwinPack

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 -76 °F up to 500 °F.

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 HG has the technology to master the challenges.

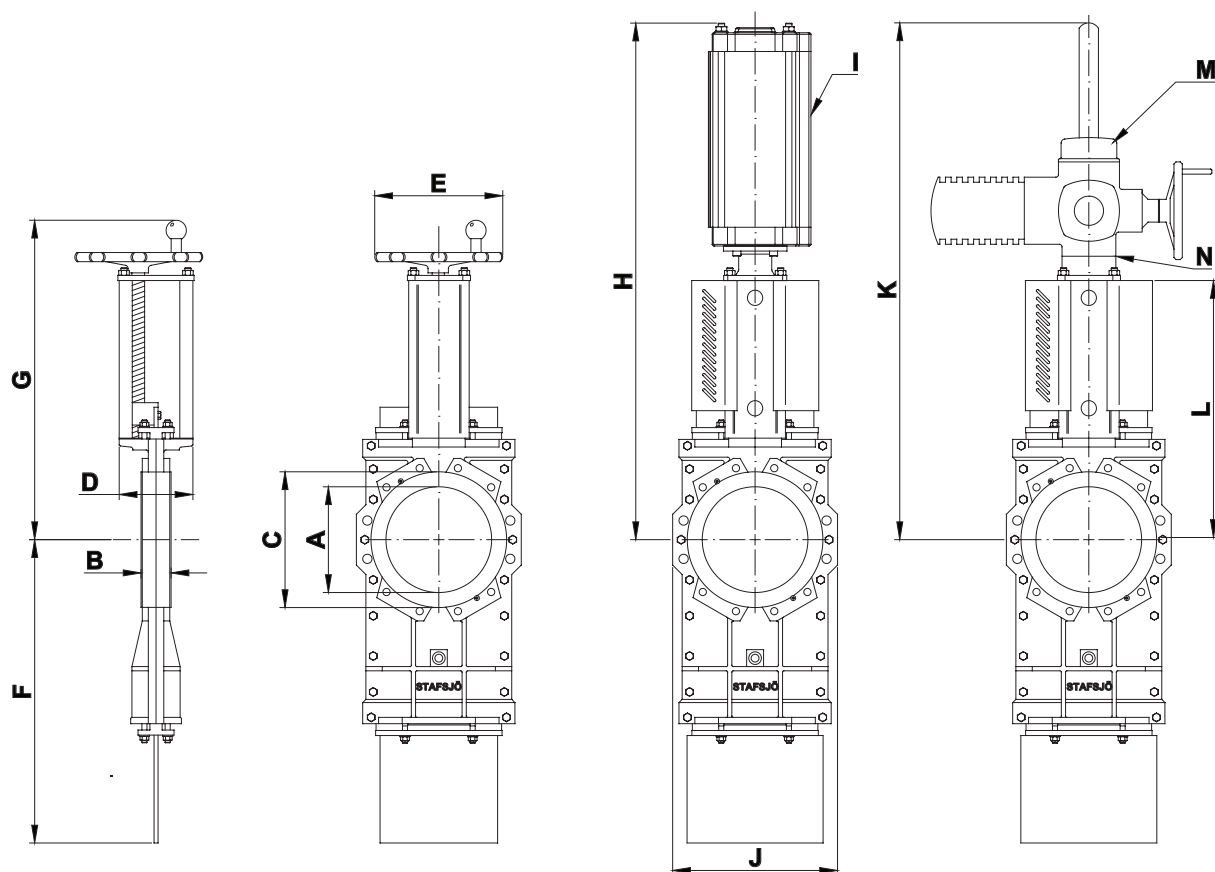


Part list

Pos.	Part	Material
1	Hand wheel	Coated cast iron Ø 8" - Ø 12" EN-JL1040, GG25, ≥ Ø 16" EN-JL1030, GG20
2	Yoke	Stainless steel EN 1.4301
2a	Bearing	Brass CuZn39Pb3
2b	Slide washer	POM
3	Stem	Stainless steel EN 1.4016 alt. EN 1.4305
4	Stem nut	Brass CW603N alt. CW614N
4a	Washer	Stainless steel A2
4b	Screw	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	Aluminium EN AW-6063-T6

1) Recommended spare part

Pos.	Part	Material
8	Gland	Stainless steel EN 1.4408 Coated nodular iron EN-JS1050, GGG50, GGG50 on HG-L ≤ 12"
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
11	Body gasket	Grafoil. DN ≥ 200: 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	Only DN ≥ 10": PTFE
14b	Guiding pads	Only DN ≥ 10": PTFE
15	Bushing	Oil-bronze
16	Gate guards	Stainless steel EN 1.4301
18	Pneumatic cylinder	See separate data sheet



Main dimensions (inch)

DN	A	B	C	D	E	F	G	H	I ¹⁾	J	K	L	M ²⁾	N ³⁾	W ⁴⁾
3	3.11	2.01	4.92	2.76	7.87	11.22	15.94	21.61	SC100	7.09	29.29	10.83	SA07.2	F10/A	8
4	4.06	2.01	6.02	2.83	7.87	15.16	17.52	24.17	SC100	8.27	31.85	12.40	SA07.2	F10/A	10
5	5.04	2.20	7.05	3.15	9.84	16.69	19.09	29.65	SC160	9.45	34.41	13.98	SA07.2	F10/A	13
6	6.02	2.36	8.07	3.15	9.84	17.91	20.87	32.40	SC160	10.24	37.17	15.75	SA07.6	F10/A	15
8	7.95	2.36	10.63	5.91	12.40	23.62	25.94	38.35	SC160	12.99	42.13	20.47	SA07.6	F10/A	34
10	9.84	2.72	12.60	5.91	12.40	28.54	29.09	43.66	SC160	15.35	47.24	23.62	SA07.6	F10/A	45
12	11.89	3.07	14.76	7.09	15.75	34.06	35.16	52.44	SC200	17.91	55.91	28.35	SA10.2	F10/A	77
14	13.07	3.07	16.73	6.89	15.75	38.58	37.32	55.79	SC200	20.08	59.25	30.51	SA10.2	F10/A	91
16	14.96	3.50	18.90	8.27	20.47	42.13	40.67	62.40	SC200	22.44	64.96	34.37	SA10.2	F10/A	132
18	16.85	3.50	21.02	8.66	20.47	47.64	44.25	70.47	SC250	24.61	70.47	37.91	SA10.2	F10/A	186
20	18.50	4.49	22.83	12.60	25.00	55.59	51.14	78.35	SC250	27.17	79.53	44.80	SA14.2	F14/A	304
24	21.26	4.80	26.73	13.78	25.00	61.14	52.60	83.19	SC320	31.50	84.06	46.26	SA14.2	F14/A	372
28	26.18	5.04	31.50	12.60	25.00	74.45	61.26	96.77	SC320	39.17	98.62	54.92	SA14.6	F14/A	590
32	29.92	5.04	35.43	12.60	25.00	83.94	67.76	107.20	SC320	42.13	109.06	61.42	SA14.6	F14/A	771
36	34.65	5.04	39.72	12.20	-	97.13	-	118.82	SC320	45.98	119.13	68.50	-	-	-
40	38.58	5.91	43.70	12.20	-	106.69	-	131.02	SC320	50.00	130.71	76.18	-	-	-
48	47.24	5.91	52.52	19.88	-	131.46	-	-	-	59.06	166.22	97.83	-	-	-

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).

7) 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

DN	3	4	5	6	8	10	12	14	16
Bolt circle diameter (inch)	6.30	7.09	8.27	9.45	11.61	13.78	15.75	18.11	20.28
Number of throughgoing bolts	4	4	4	4	4	4	4	4	4
Number of tapped holes/side	4	4	4	4	4	8	8	12	12
Bolt size	M16	M16	M16	M20	M20	M20	M20	M20	M24
Bolt lengths ¹⁾ (mm)	0.51	0.51	0.59	0.59	0.63	0.71	0.79	0.79	0.98

DN	18	20	24	28	32	36	40	48
Bolt circle diameter (inch)	22.24	24.41	28.54	33.07	37.40	41.34	45.67	54.33
Number of throughgoing bolts	4	4	4	4	4	4	4	4
Number of tapped holes/side	16	16	16	20	20	24	24	28
Bolt size	M24	M24	M27	M27	M30	M30	M33	M36
Bolt lengths ¹⁾ (inch)	0.98	1.06	1.10	1.10	1.22	1.22	1.50	1.57

Flange drilling according to EN 1092 PN 16

DN	3	4	5	6	8	10	12	14	16
Bolt circle diameter (inch)	6.30	7.09	8.27	9.45	11.61	13.98	16.14	18.50	20.67
Number of throughgoing bolts	4	4	4	4	4	4	4	4	4
Number of tapped holes/side	4	4	4	4	8	8	8	12	12
Bolt size	M16	M16	M16	M20	M20	M24	M24	M24	M27
Bolt lengths ¹⁾ (inch)	0.51	0.51	0.59	0.59	0.63	0.71	0.79	0.79	0.98

DN	18	20	28	32	36	40	48
Bolt circle diameter (inch)	23.03	25.59	33.07	37.40	41.34	46.06	57.72
Number of throughgoing bolts	4	4	4	4	0	4	4
Number of tapped holes/side	16	16	20	20	28	24	28
Bolt size	M27	M30	M33	M36	M36	M39	M45
Bolt lengths ¹⁾ (inch)	0.98	1.06	1.10	1.22	1.22	1.50	1.57

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

DN	3	4	5	6	8	10	12	14	16
Bolt circle diameter (inch)	6.00	7.50	8.50	9.50	11.75	14.25	17.00	18.75	21.25
Number of throughgoing bolts	2	4	4	4	4	4	4	4	4
Number of tapped holes/side	2	4	4	4	4	8	8	8	12
Bolt size (UNC)	5/8-11	5/8-11	3/4-10	3/4-10	3/4-10	7/8-9	7/8-9	1-8	1-8
Bolt lengths ¹⁾ (inch)	0.51	0.51	0.59	0.59	0.63 ²⁾	0.71	0.79	0.79	0.98

DN	18	20	24	28	32	36	40	48
Bolt circle diameter (inch)	22.75	25.00	29.50	34.00	38.50	42.75	47.25	56.00
Number of throughgoing bolts	4	4	4	4	4	4	4	8
Number of tapped holes/side	12	16	16	24	24	28	32	36
Bolt size (UNC)	1 1/8-7	1 1/8-7	1 1/4-7	1 1/4-7	1 1/2-6	1 1/2-6	1 1/2-6	1 1/2-6
Bolt lengths ¹⁾ (inch)	0.98	1.06	1.10	1.10	1.22	1.22	1.50	1.57

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

2) The screws on the seatside has to be 10 mm longer for face-to-face according to MSS-SP81.

OR = On request

Flange drilling according to JIS B 2238 10K

DN	3	4	5	6	8	10	12	14	16
Bolt circle diameter (inch)	5.91	6.89	8.27	9.45	11.42	13.98	15.75	17.52	20.08
Number of throughgoing bolts	4	4	4	4	4	4	4	4	4
Number of tapped holes/side	4	4	4	4	8	8	12	12	12
Bolt size	M16	M16	M20	M20	M20	M22	M22	M22	M24
Bolt lengths ¹⁾ (inch)	0.51	0.51	0.59	0.59	0.63	0.71	0.79	0.79	0.98

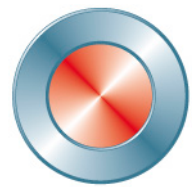
DN	450	500	600	700	800	900	1000	1200
Bolt circle diameter (inch)	565	620	730	840	950	1050	1160	1380
Number of throughgoing bolts	4	4	8	4	4	4	4	4
Number of tapped holes/side	16	16	16	20	24	24	24	28
Bolt size	M24	M24	M30	M30	M30	M30	M36	M36
Bolt lengths ¹⁾ (inch)	25	27	28	28	31	31	38	40

Flange drilling according to BS 10 Table D

DN	3	4	5	6	8	10	12	14	16
Bolt circle diameter (inch)	5.75	7.00	8.25	9.25	11.50	14.00	16.00	18.50	20.50
Number of throughgoing bolts	2	2	4	4	4	4	4	4	4
Number of tapped holes/side	2	2	4	4	4	4	8	8	8
Bolt size	5/8-11	5/8-11	5/8-11	5/8-11	5/8-11	3/4-10	3/4-10	7/8-9	7/8-9
Bolt lengths ¹⁾ (inch)	0.51	0.51	0.59	0.59	0.63	0.71	0.79	0.79	0.98

DN	18	20	24	28	32	36	40	1200
Bolt circle diameter (inch)	23.00	25.25	29.75	33.27	38.75	43.00	46.26	OR
Number of throughgoing bolts	4	4	4	4	4	4	4	OR
Number of tapped holes/side	8	12	12	16	16	20	20	OR
Bolt size	7/8-9	7/8-9	1-8	1-8	1 1/4-7	1 1/4-7	1 1/4-7	OR
Bolt lengths ¹⁾ (inch)	0.98	1.06	1.10	1.10	1.22	1.22	1.50	OR

1) Add the values with the thickness of flanges, washers and gaskets.
OR = On request



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