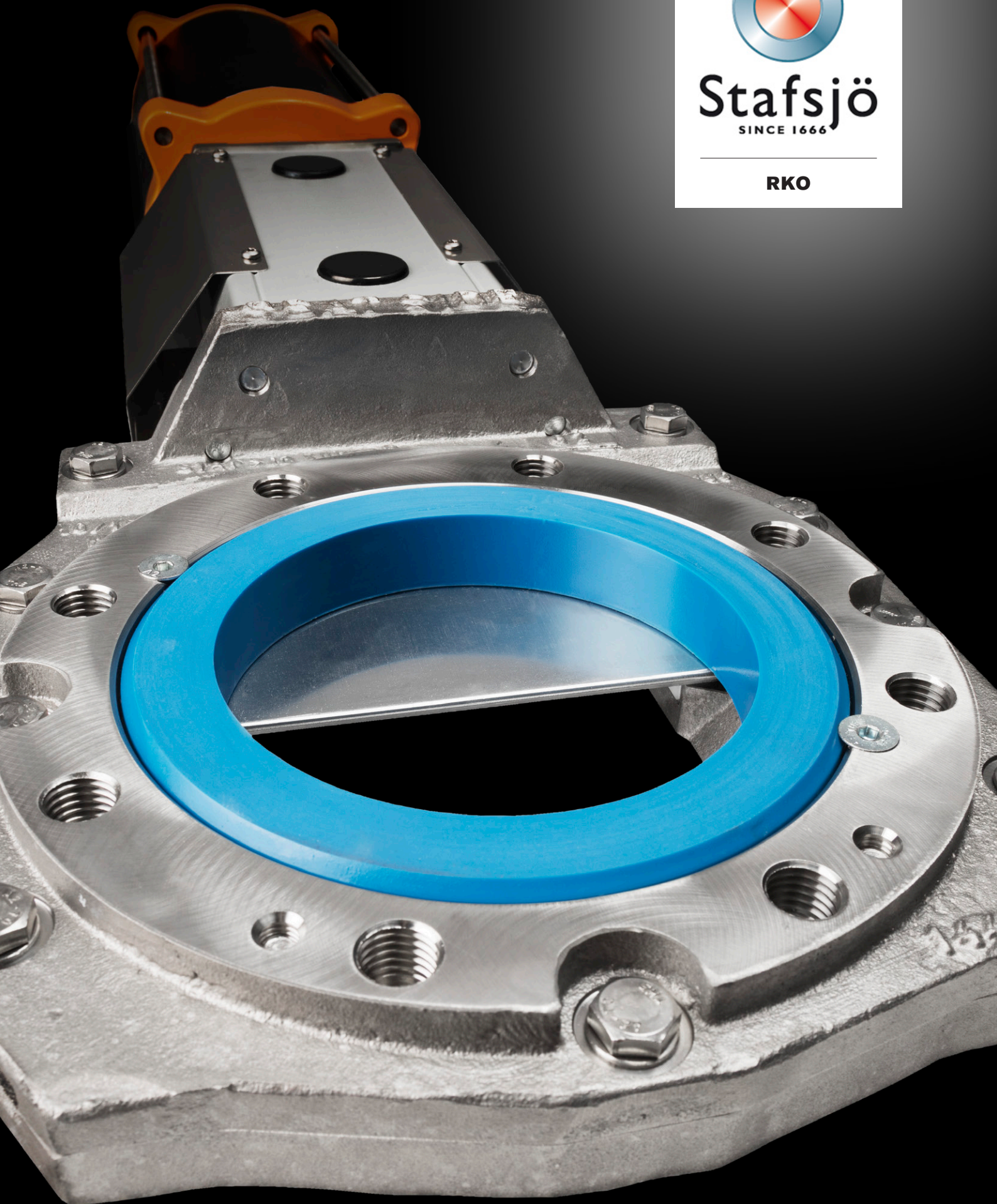


Stafsjö
SINCE 1666

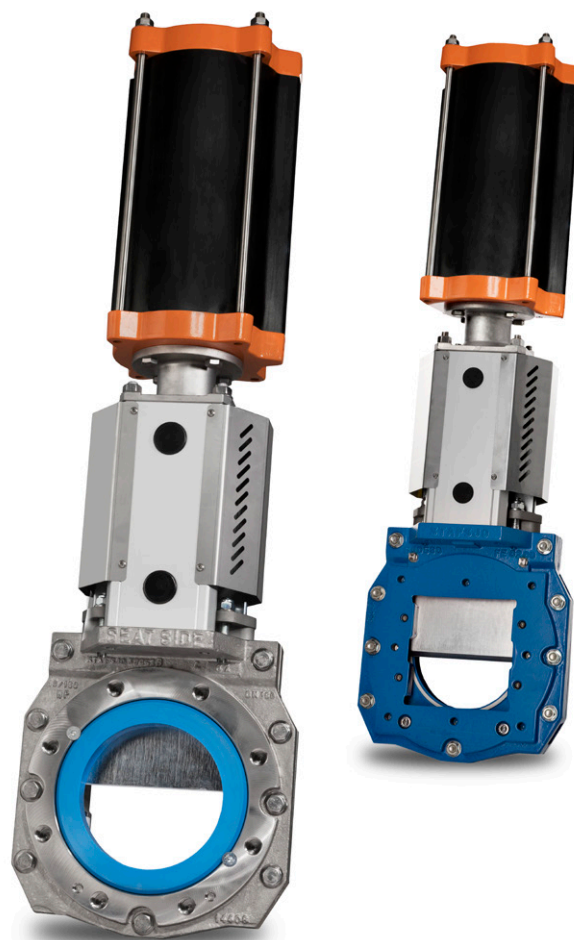
RKO



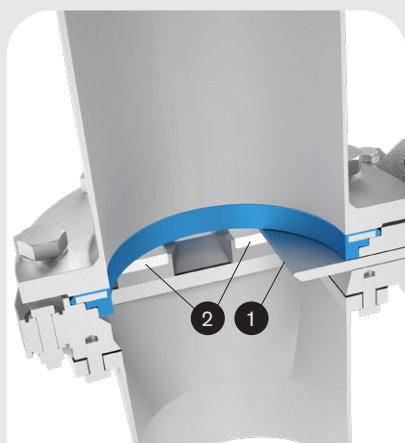
Knife gate valve RKO

Stafsjö's knife gate valve RKO is the optimal performer for junc traps and high density cleaners separating abrasive materials such as sand, stones, staples, glass and other type of rejects from the process media.

The RKO valve is modular designed and it can easily be customized in materials, with actuators and related automation accessories to different process conditions. It got a round inlet with an enlarged square outlet to avoid difficult solids will settle inside. An adaptor cone for the square outlet side can be supplied on request for weld or flange connection. Some sizes can also be supplied with standard flange pattern on the outlet side. As standard RKO is available in a stainless steel and a nodular iron version. The top works is solid to perform during long periods of time in horizontal high cycling applications.

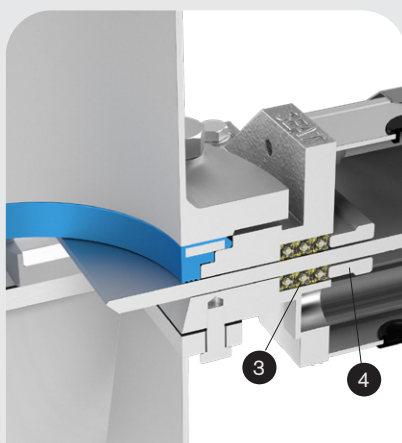


Product features



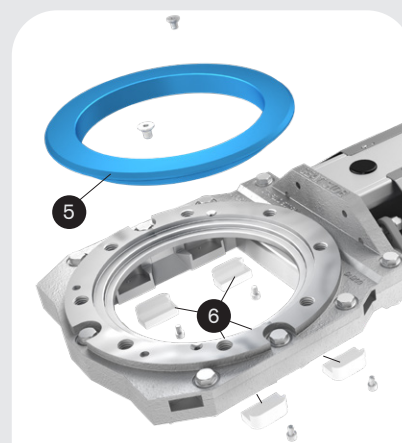
Performance shut-off on heavy coarse reject

The straight bevel edged gate (1) efficiently cut through heavy coarse materials. The gate supports (2) assure gate guidance throughout the full stroke and support the gate in closed position to maintain a 100% liquid tight shut-off. The enlarged square outlet enable full release of difficult solids when cycling to open position.



A first rate external sealing

Stafsjö's TwinPack braids (3) perform the main external sealing operation in the system. The gland box is precision machined with tight tolerances to provide optimal room for the TwinPack braids while the gland (4) and position of stud bolts provide a uniform load. For the most challenging duties the gland sealing system can be reinforced with a box bottom scraper or with a double gland.



Extend the service life with an easy maintenance

The RKO is often installed on severe abrasive applications. Quick and easy maintenance is important. The retainer ring system enable an easy exchange of the seat (5) and the gate supports (6) can also be switched over to new ones without dismantling the entire valve. With this solution it is easy to achieve low cost of ownership.

Pressure class

Max working pressure at 20 °C		Max differential pressure at 20 °C	
DN	bar	DN	bar
100 - 450	10	100 - 450	6,2
500 - 600	6	500 - 600	4

RKO configurations

Standard in stainless steel	Standard in nodular iron
<p>Sizes: DN 100 - DN 600</p> <p>Valve body: Stainless steel EN 1.4408</p> <p>Gate: Hard chromed duplex stainless steel EN 1.4462</p> <p>Box packing: TwinPack</p> <p>Top works: Stainless steel tie rods encapsulated in aluminum beams including stainless steel gate guards on automated valves</p> <p>Options and others from below</p>	<p>Sizes: DN 150 - DN 300, DN 400</p> <p>Valve body: Nodular iron EN 5.3105</p> <p>Gate: Hard chromed duplex stainless steel EN 1.4462</p> <p>Box packing: TwinPack</p> <p>Top works: Stainless steel tie rods encapsulated in aluminum beams including stainless steel gate guards on automated valves</p> <p>Options and others from below</p>

Options	
<p>Valve body¹⁾</p> <p>Stainless steel EN 1.4408</p> <p>Nodular iron EN 5.3105</p>	<p>Top works</p> <p>Stainless steel tie rods encapsulated in aluminum beams</p> <p>Stainless steel pillars or beams</p>
<p>Retainer rings</p> <p>Polyurethane</p> <p>Stainless steel EN 1.4408</p> <p>Duplex stainless steel EN 1.4470</p> <p>Nodular iron EN 5.3105, EN-JS1050, GGG50</p>	<p>Actuators</p> <p>Hand wheel with non-rising stem</p> <p>Chain wheel</p> <p>Bevel gear</p> <p>Double-acting pneumatic cylinder</p> <p>Single-acting pneumatic cylinder</p> <p>Electric actuator</p> <p>Hydraulic actuator</p>
<p>Gate material and surface treatments</p> <p>Hard chromed duplex stainless steel EN 1.4462, S32205</p>	
<p>Seats</p> <p>Polyurethane</p> <p>PTFE with o-ring in Nitrile, EPDM or FKM</p>	<p>Flange drillings</p> <p>EN 1092 PN 10</p> <p>ASME/ANSI B16.5 Class 150 Class 150 series A</p> <p>JIS B 2238 10K</p> <p>AS 2129 Table D and E on request</p> <p>BS 10 Table D on request</p>
<p>Box packings</p> <p>TwinPack</p> <p>Extra scrapers in UHMW-PE, PTFE or brass</p>	<p>Accessories</p> <p>Limit switches, solenoid valves, positioners, mechanical lockouts, double gland etc. See our accessory datasheet for further information.</p> <p>For adapter cone see page 6.</p>

Seat service temperatures	Box packing service temperatures
<p>Polyurethane: +90 °C</p> <p>PTFE with o-ring Nitrile: +100 °C</p> <p>PTFE with o-ring EPDM: +120 °C</p> <p>PTFE with o-ring FKM: +180 °C</p>	<p>TwinPack: +260 °C</p>
Guiding pads	<p>Additional scraper in the gland box</p> <p>UHMW-PE: +85 °C</p> <p>PTFE: +260 °C</p> <p>Brass: +200 °C</p>
<p>POM: +120 °C (standard)</p> <p>Brass: +200 °C</p>	<p><i>Media type, pressure and operating intervals may also affect the seat and box packing material in different ways. Contact Stafsjö for advice.</i></p>

¹⁾ The valve body is as standard supplied with purge ports: DN 100 1/8", DN 150 - DN 250 1/4", DN 300 - DN 600 1/2"

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.

Corrosion protection

Coated valve parts fulfill the requirements in EN ISO 12944 class C3 in applicable areas. Optional coatings include EN ISO 12944 class C4 or C5.

ATEX designs

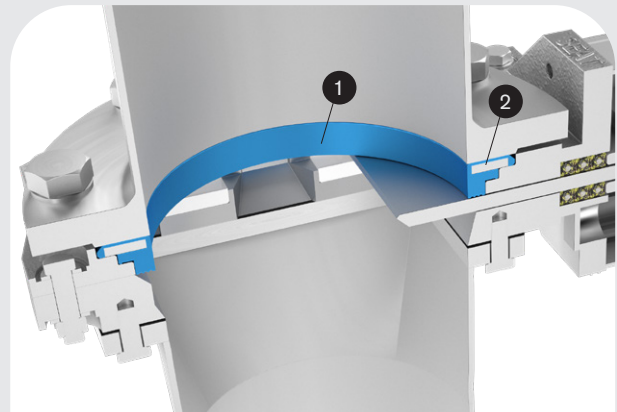
On request directive 2014/34/EU Group II category:

3 G/D (zone 2 or 22)

2 G/D (zone 1 or 21)

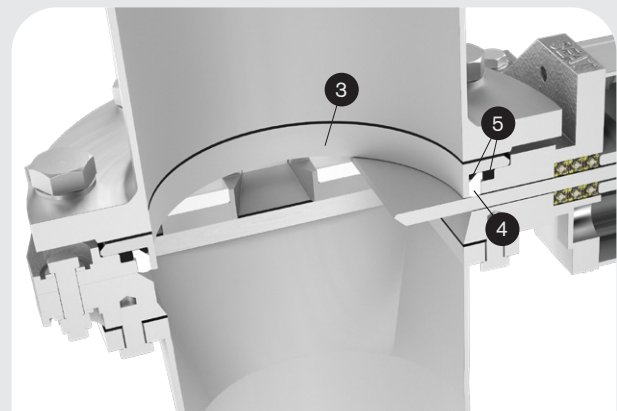
1 D (Zone 20)

Seat sealing options



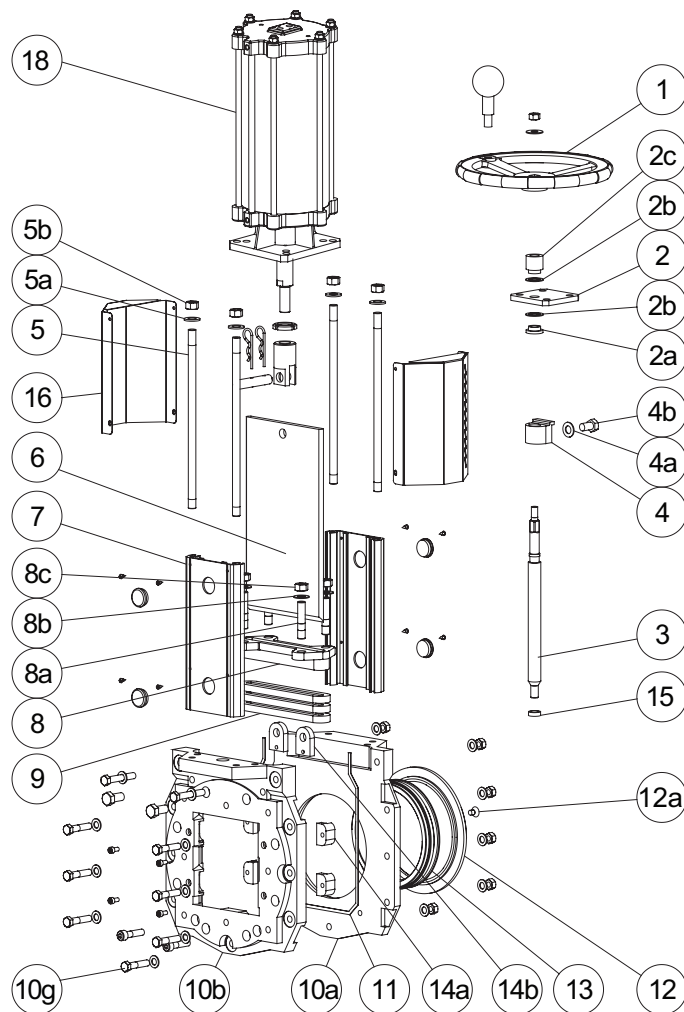
Polyurethane seat

The retainer ring and seat (1) is vulcanized around a stainless steel core (2). This is an extremely abrasive resistance sealing solution and the most widely used on RKO. Known for its ability to perform during long periods of time.



Stainless steel retainer ring with PTFE seat

In applications with reject, chemicals and high temperatures, the hard face duplex or stainless steel retainer ring (3) with PTFE seat (4) and back-up o-rings (5) is the optimal high performer for liquid tight shut-off.

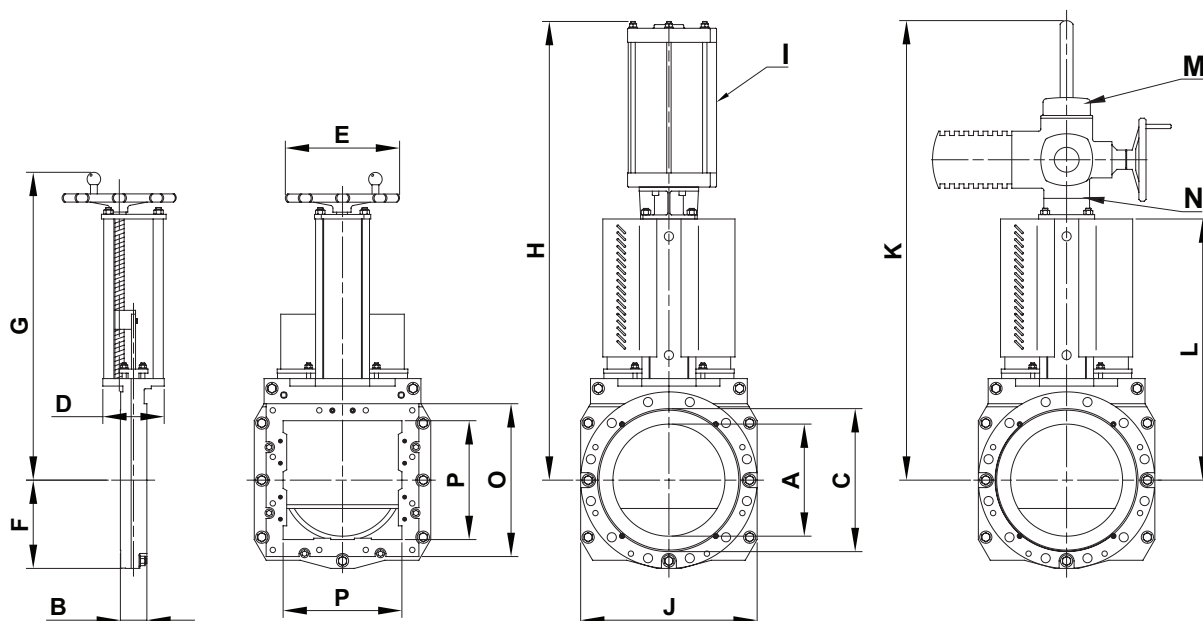


Part list

Pos.	Part	Material
1	Hand wheel	Coated cast iron Ø 200 - Ø 315 EN-JL1040, GG25, ≥ Ø 400 EN-JL1030, GG20
2	Yoke	Stainless steel EN 1.4301
2a	Bearing	Brass
2b	Slide washer	POM
3	Stem	Stainless steel EN 1.4016, EN 1.4305
4	Stem nut	Brass
4a	Washer	Stainless steel A2
4b	Screw	Stainless steel A2
5	Tie rods	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
8	Gland	Stainless steel EN 1.4408

Pos.	Part	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 a/b	Valve body	See options on page 3
10g	Valve body boltings	Stainless steel A2 Body in nodular iron: Zinc plated steel
11	Body gasket	Grafoil tape, ≥ DN 300: PTFE
12 ¹⁾	Retainer ring	See options on page 3
12a	Locking screw	Stainless steel A2
13 ¹⁾	Seat	See options on page 3
14a ¹⁾	Guiding pads	POM
14b ¹⁾	Top guiding pads	≥ DN 300: POM
15	Bushing	Oil-bronze
16	Gate guards	Stainless steel EN 1.4301
18	Pneumatic cylinder	See separate data sheet

1) Recommended spare part



Main dimensions (mm)

DN	A	B	C	D	E	F	G	H	I ¹⁾	J	K	L	M ²⁾	N ³⁾	O	P	kg ⁴⁾
100	97	52	153	80	200	112	446	616	SC100	224	649	317	SA 07.2	F10/A	180	100	18
150	146	60	204	150	315	148	554	871	SC160	296	749	417	SA 07.6	F10/A	230	150	25
200	194	60	267	150	315	175	647	964	SC160	350	790	510	SA 07.6	F10/A	280	200	45
250	247	69	319	150	315	206	752	1210	SC200	412	878	598	SA 07.6	F10/A	340	250	60
300	298	78	374	180	-	232	867	1327	SC200	464	1026	715	SA 10.2	F10/A	400	300	80
350	330	78	419	180	-	260	921	1461	SC200	520	1080	769	SA 10.2	F10/A	450	350	90
400	380	89	480	206	-	287	1069	1622	SC250	574	1177	862	SA 10.2	F10/A	500	400	140
450	428	89	535	208	-	315	1130	1800	SC250	629	1450	940	SA 10.2	F10/A	555	483	300
500	500	96	586	320	-	355	-	2081	SC250	710	-	1099	SA 14.2	F14/A	656	519	330
600	600	100	685	306	-	396	-	2344	SC320	792	-	1226	SA 14.2	F14/A	742	614	400

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 equipped with hand wheel, pneumatic actuator on DN 500-DN 600.

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

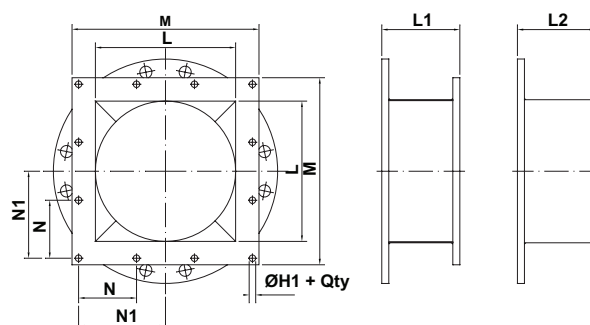
Adapter cone to RKO

RKO can be equipped with an adapter cone on the square outlet side. There are two types of adapters; one for flange connection and one for weld connection. Adapter cone for DN 600 can be supplied on request. Material: Stainless steel (EN 1.4436).



Main dimensions (mm)

DN	L	M	N	N1	ØH1	Qty	L1	L2
100	100	180	70	70	14	8	90	150
150	150	230	95	95	14	8	140	200
200	200	280	122,5	122,5	14	8	140	200
250	250	340	150	150	14	8	150	210
300	300	400	124	186	14	12	167	227
350	350	450	137	205,5	18	12	165	225
400	400	500	154	231	18	12	155	215
450	483	555	174	261	18	12	155	215
500	558	658	124	310	18	20	190	325



Flange drilling round inlet side according to EN 1092 PN 10

DN	100	150	200	250	300	350	400	450	500	600
Bolt circle diameter (mm)	180	240	295	350	400	460	515	565	620	725
Number of tapped holes	8	8	8	12	12	16	16	20	20	20
Bolt size	M16	M20	M20	M20	M20	M20	M24	M24	M24	M27
Bolt lengths ¹⁾ (mm)	15	15	15	18	22	20	25	25	33	36

Flange drilling square outlet side

DN	100	150	200	250	300	350	400	450	500	600
Number of tapped holes	8	8	8	8	12	12	12	12	20	28
N ²⁾	70	95	122,5	150	124	137	154	174	124	100
Bolt size	M12	M12	M12	M12	M12	M16	M16	M16	M16	M16
Bolt length ¹⁾ (mm)	15	15	15	20	23	23	28	24	20	20

Flange drilling square outlet side according to EN 1092 PN 10 (optional)

DN	100	150	200
Bolt circle diameter (mm)	180	240	295
Number of tapped holes	8	8	8
Bolt size	M16	M20	M20
Bolt length ¹⁾ (mm)	15	15	15

Flange drilling round inlet side according to ASME/ANSI B16.5 Class 150

DN	100	150	200	250	300	350	400	450	500	600
Bolt circle diameter (mm)	190,5	241,3	298,5	362	431,8	476,3	539,8	578	635	749
Number of tapped holes	8	8	8	12	12	12	16	16	20	20
Bolt size (UNC)	5/8-11	3/4-10	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
Bolt length ¹⁾ (mm)	15	15	15	18	22	20	18	23	33	36

Flange drilling square outlet side

DN	100	150	200	250	300	350	400	450	500	600
Number of tapped holes	8	8	8	8	12	12	12	12	20	28
N ²⁾	70	95	122,5	150	124	137	154	174	124	100
Bolt size (UNC)	1/2-13	1/2-13	1/2-13	1/2-13	1/2-13	5/8-11	5/8-11	5/8-11	5/8-11	5/8-11
Bolt length ¹⁾ (mm)	15	15	15	20	23	23	28	24	20	20

Flange drilling square outlet side according to ASME/ANSI B16.5 Class 150 (optional)

DN	100	150	200
Bolt circle diameter (mm)	190,5	241,3	298,5
Number of tapped holes	8	8	8
Bolt size (UNC)	5/8-11	3/4-10	3/4-10
Bolt length ¹⁾ (mm)	15	15	15

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

2) See reference picture on p. 6.

Flange drilling round inlet side according to JIS B 2238 10K

DN	100	150	200	250	300	350	400	450	500	600
Bolt circle diameter (mm)	175	240	290	355	400	455	510	565	620	730
Number of tapped holes	8	8	12	12	12	16	16	20	20	24
Bolt size	M16	M20	M20	M22	M22	M22	M24	M24	M24	M30
Bolt length ¹⁾ (mm)	15	15	15	18	22	20	18	23	33	36

Flange drilling square outlet side

DN	100	150	200	250	300	350	400	450	500	600
Number of tapped holes	8	8	8	8	12	12	12	12	20	28
N ²⁾	70	95	122,5	150	124	137	154	174	124	100
Bolt size	M12	M12	M12	M12	M12	M16	M16	M16	M16	M16
Bolt length ¹⁾ (mm)	15	15	15	20	23	23	28	24	20	20

Flange drilling square outlet side according to JIS B 2238 10K (optional)

DN	100	150	200
Bolt circle diameter (mm)	175 ²⁾	240 ²⁾	290 ²⁾
Number of tapped holes	8	8	12
Bolt size	M16	M20	M20
Bolt length ¹⁾ (mm)	15	15	15

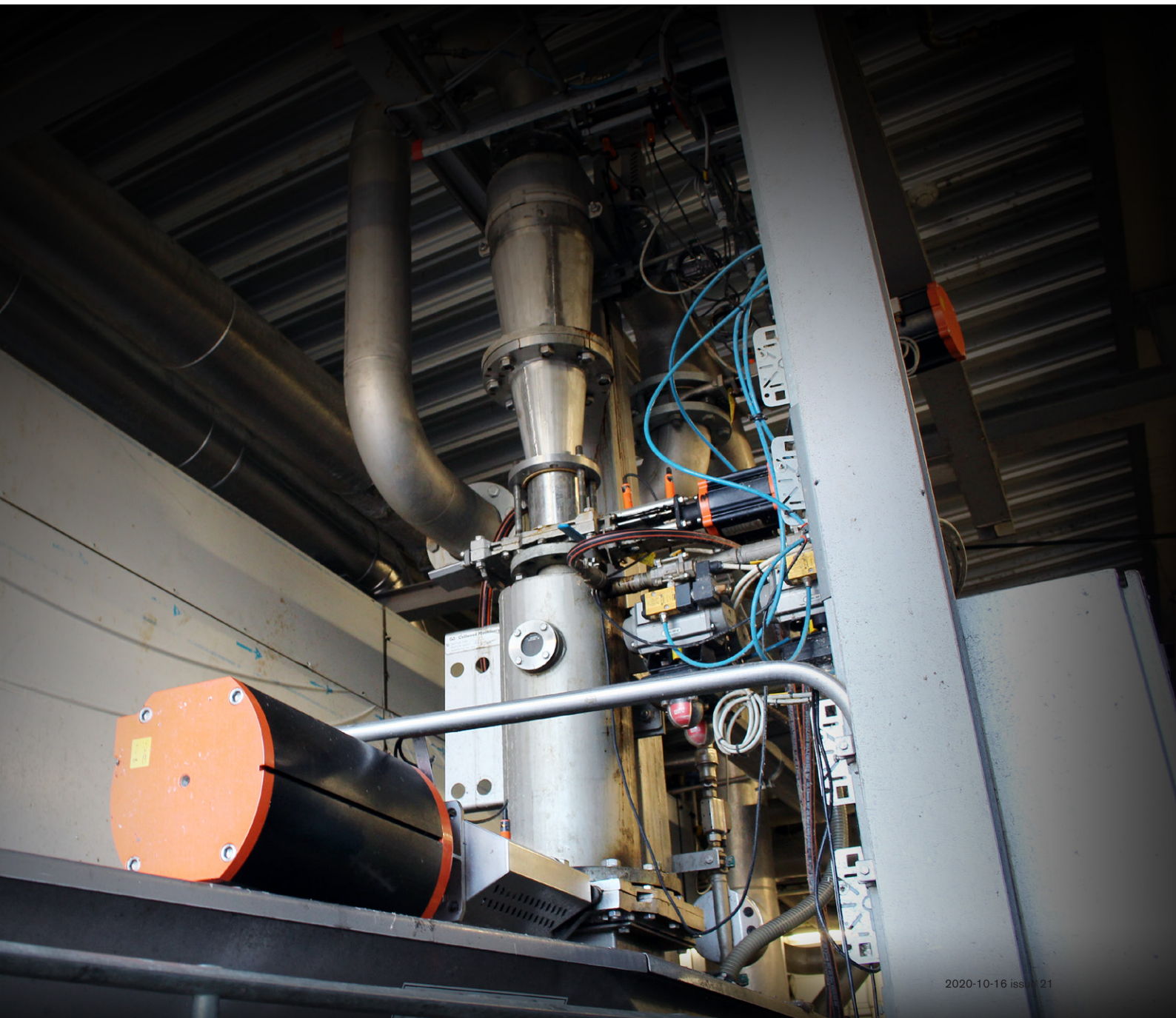
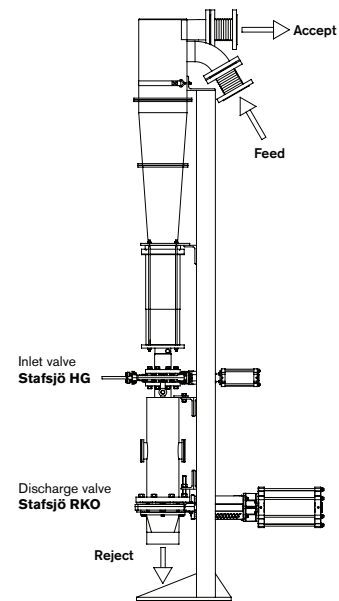
1) Add the values with the thickness of pipe flanges, washers and gaskets.

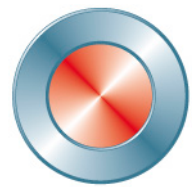
2) See reference picture on p. 6.

Optimized valve for high density cleaners

High density cleaners separate sand, stones, staples, glass and other type of reject from the process media. It is often a high cycling application subject to severe wear and vibrations. Choosing the right valve type and configuration is crucial to avoid unexpected process interruptions. Stafsjö's RKO is robust all the way through, originally designed to this type of process conditions. On recycled fibre lines it is often used as both inlet and discharge valve to the reject tank while on virgin fibre lines it is also used in combination with MV and HG as inlet valves.

Contact Stafsjö for further information on valve solutions to your high density cleaner.





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