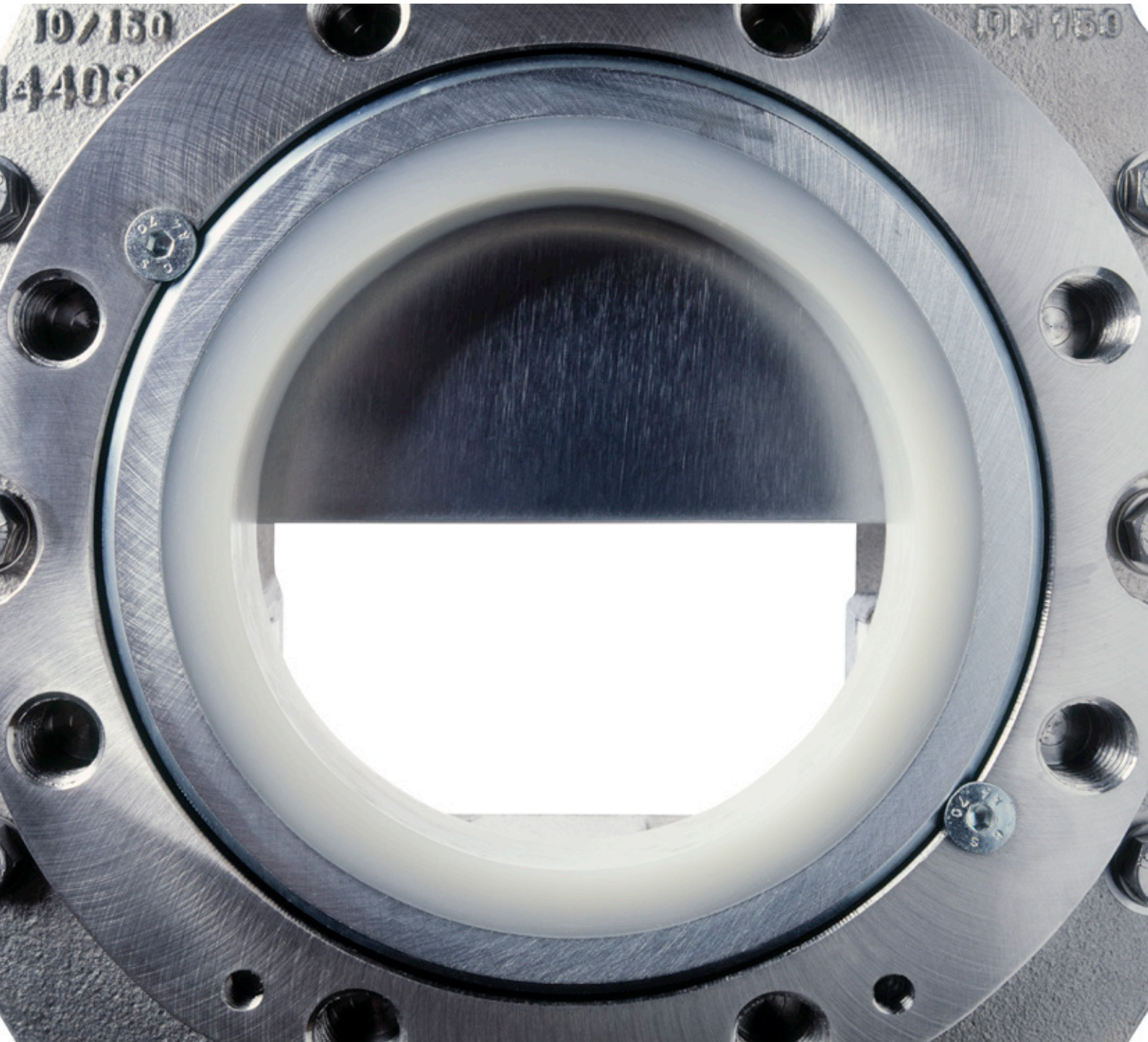


# Knife gate valve RKO



**Stafsjö**  
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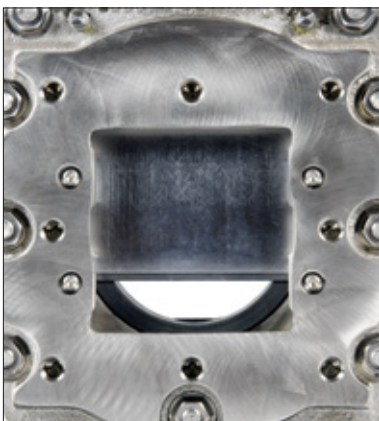
## Knife gate valve RKO

Stafsjö's knife gate valve RKO is reliable and particularly well suited for demanding reject and other abrasive media. The valve's circular inlet and square outlet together with the gate, that has a rectangular shape and a bevel edge, counteracts clogging and blockages, which often is a problem in combination with junk traps, coarse reject and cleaners. If needed, the valve can be supplied with an adaptor cone on the square side with weld connection or flange connection.

RKO has a robust valve body with integrated purge ports, which is available in stainless steel, coated cast iron or carbon steel. As standard the valve comes with a wear resistant hard chromed gate in duplex stainless steel, exchangeable guide strips and the retainer ring system, which makes the maintenance simple and cost-efficient. RKO is supplied with a polyurethane seat or a retainer ring in stainless steel with a PTFE seat. The glandbox is supplied with Stafsjö's unique gland box packing, TwinPack™, to secure that no media reaches surrounding environment. The valve can also be supplied with double gland for the most demanding applications.

The top work consist of aluminium beams and stainless steel tie rods, which gives good corrosion resistance and a stable operation. There are several actuator types and accessories to choose from in Stafsjö's standard collection.

The RKO 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.



### Proven design for abrasive and demanding applications

Upon closure the gate cut-off the media effectively. The bore design, with a circular inlet and a larger square outlet, assures a non-clogging shut-off.



### Easy maintenance lowers the life cycle cost

The RKO can easily be maintained to extend the service life. For example, Stafsjö's retainer ring that hold the seat in place is locked with screws just as the guide strips are, making these parts extremely easy to change if needed.



### A solid top works assures stability and a preserved sealing

A stable operation and a proper dimensioned top works makes the shut-off reliable and repeatable. It also minimizes wear on the equipment.

## Design data

Sizes	Flange drilling	Face-to-face dimension	ATEX Design	Corrosion protection
DN 100 - DN 600	EN 1092 PN 10 JIS B 2238 10K ASME/ANSI B16.5 Class 150 AS Table D & E BS Table D	Stafsjö manufacturing standard TAPPI TIS 405-8 MSS SP-81	ATEX 94/ 9/EC II cat 3 G/D for zone 2 and 22 on request	Non-corrosive resistant materials are coated in colour RAL5015 acc. to Stafsjö's standard, which fulfill the requirements in EN ISO 12944 class C3.

Other sizes, flange drillings, ATEX zones and corrosion protection on request.

Leakage rate	Pressure tests		
EN 12266-1:2012 rate A: 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 for shell test: 1,5 times maximum allowable working pressure for open valve. Pressure for seat tightness test: 1,1 times maximum allowable differential pressure for closed valve.		
Maximum working pressure body at 20°C	Maximum differential pressure in preferred direction at 20°C		
DN	bar	DN	bar
100 - 450	10	100 - 450	6,2
500 - 600	6	500 - 600	4

## Basic equipment

A. Valve Body				
DN	Material	Code	Type	Maximum temperature °C
100 - 600	Stainless steel	(E)	EN 1.4408	400
100 - 400	Cast iron	(A)	EN-JL1030/GG20	150
500 - 600	Carbon steel	(C)	WCC/ASTM A216	425

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"

B. Gate		
Material	Type	Surface treatment
Duplex stainless steel	EN 1.4462/S32205	Hard chromed surface

C. Retainer ring	
Material	Type
Stainless steel <sup>2)</sup>	EN 1.4408
Cast iron <sup>3)</sup>	EN-JL1030/GG20

<sup>2)</sup> Standard on RKO-E.

<sup>3)</sup> Standard on RKO-A.

D. Seat		
Material	Code	Maximum temperature °C
PTFE with o-ring Nitrile	(P)	100
PTFE with o-ring Viton	(PV)	180
Polyurethane	(U)	90

E. Box packing		
Material	Code	Maximum temperature °C
TwinPack™	(TY)	260
PTFE	(TF)	280
Graphite	(TG)	450

# Actuators

Manual	Code	Automatic	Code
Hand wheel <sup>4)</sup>	(HW)	Pneumatic cylinder	(EC)
Chain wheel <sup>5)</sup>	(CW)	Electrical motor	(EM)
		Hydraulic cylinder <sup>5)</sup>	(MH)

<sup>4)</sup> For recommended size, see page 5 column E.

<sup>5)</sup> For recommended size, see separate data sheet.

Pneumatic cylinder			Electric motor – AUMA multi-turn		
DN valve	Size EC	Maximum Force (kN)	DN valve	AUMA	Attachment
100	EC 100	3,5	100	SA 07.2	F10/A
150 - 200	EC 160	9,0	150 - 250	SA 07.2	F10/A
250 - 350	EC 200	14,1	300 - 450	SA 10.2	F10/A
400 - 500	EC 250	22,1	500 - 600	SA 14.2	F14/A
600	EC 320	36,2			

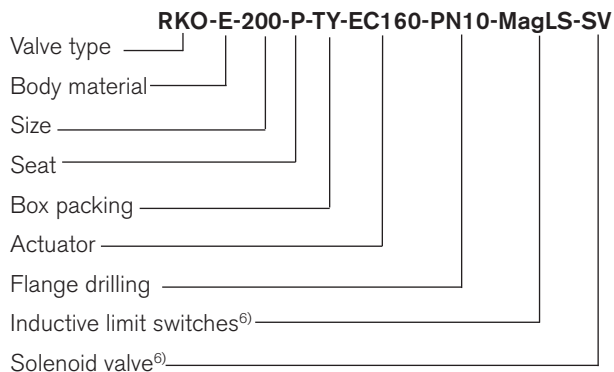
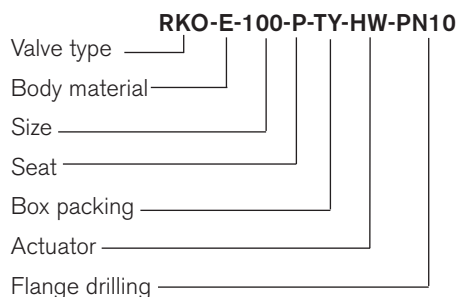
The table above gives recommended cylinder sizes at normal operation with 5 bar air pressure. For other operating conditions, please contact Stafsjö or your local representative for advice.

Electric motors are mounted according to standard ISO 5210. The table above gives recommended motor sizes at normal operation. For other operating conditions, please contact Stafsjö or your local representative for advice.

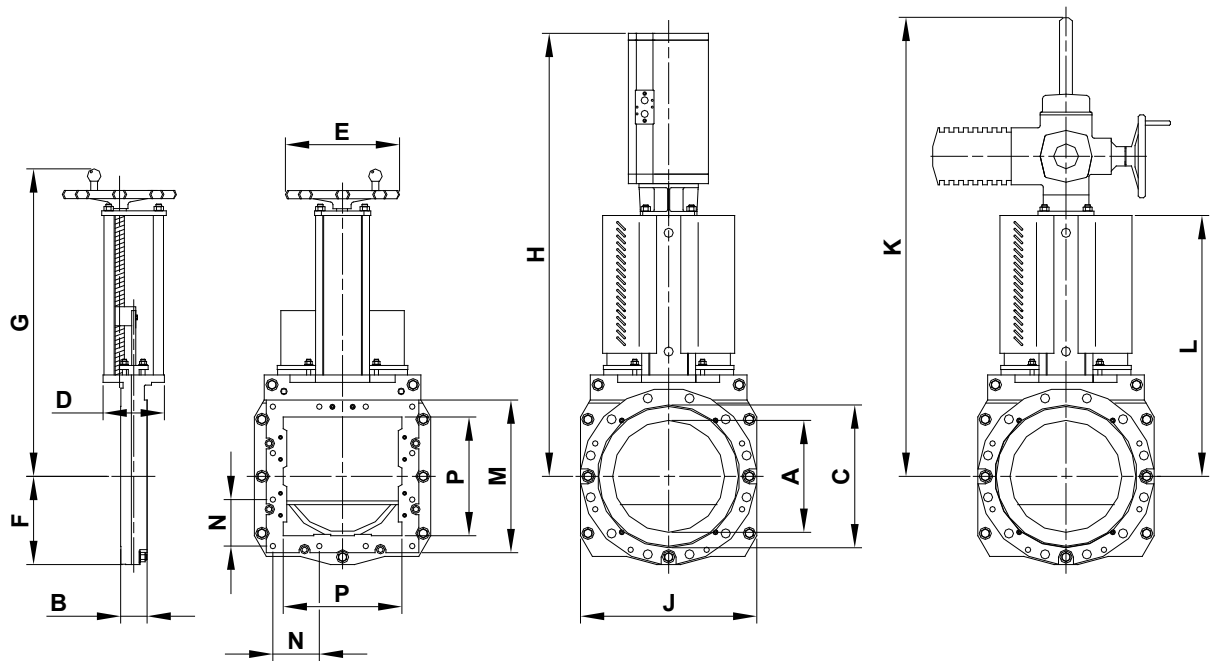
The actuators are described in detail in separate data sheets. For actuators classified according to ATEX, please contact Stafsjö or your local representative.

## Specify the Stafsjö valve

Stafsjö's valves are modular designed and they can easily be customized with gate, seat 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).



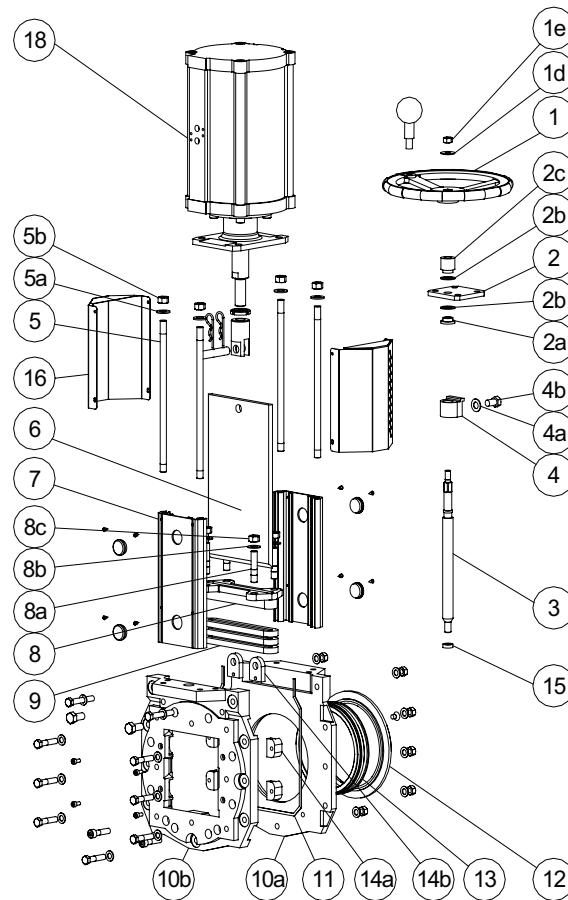
<sup>6)</sup>All electronics must be specified in detail.



## Main dimensions

Dimension (mm)														
DN	A	B	C	D	E	F	G	H	J	K	L	M	P	kg <sup>7)</sup>
100	97	52	153	80	200	112	446	555	224	649	317	180	100	18
150	146	60	204	150	315	148	554	783	296	749	417	230	150	25
200	194	60	267	150	315	175	647	876	350	790	510	280	200	45
250	247	69	319	150	315	206	752	1135	412	878	598	340	250	60
300	298	78	374	180	400	232	867	1252	464	1026	715	400	300	80
350	330	78	419	180	400	260	921	1436	520	1080	769	450	350	90
400	380	89	480	206	520	287	1069	1506	574	1177	862	500	400	140
450	428	89	535	208	520	315	1130	1684	629	1450	940	555	483	300
500	500	96	586	320	-	355	-	1973	710	-	1099	656	519	330 <sup>8)</sup>
600	600	100	685	306	-	396	-	2180	792	-	1226	742	614	400 <sup>9)</sup>

<sup>7)</sup> Weight of valve including hand wheel (HW). <sup>8)</sup> Weight of valve including EC 250. <sup>9)</sup> Weight valve including EC 320  
Main dimensions are only for information. Contact Stafsjö for certified drawings.

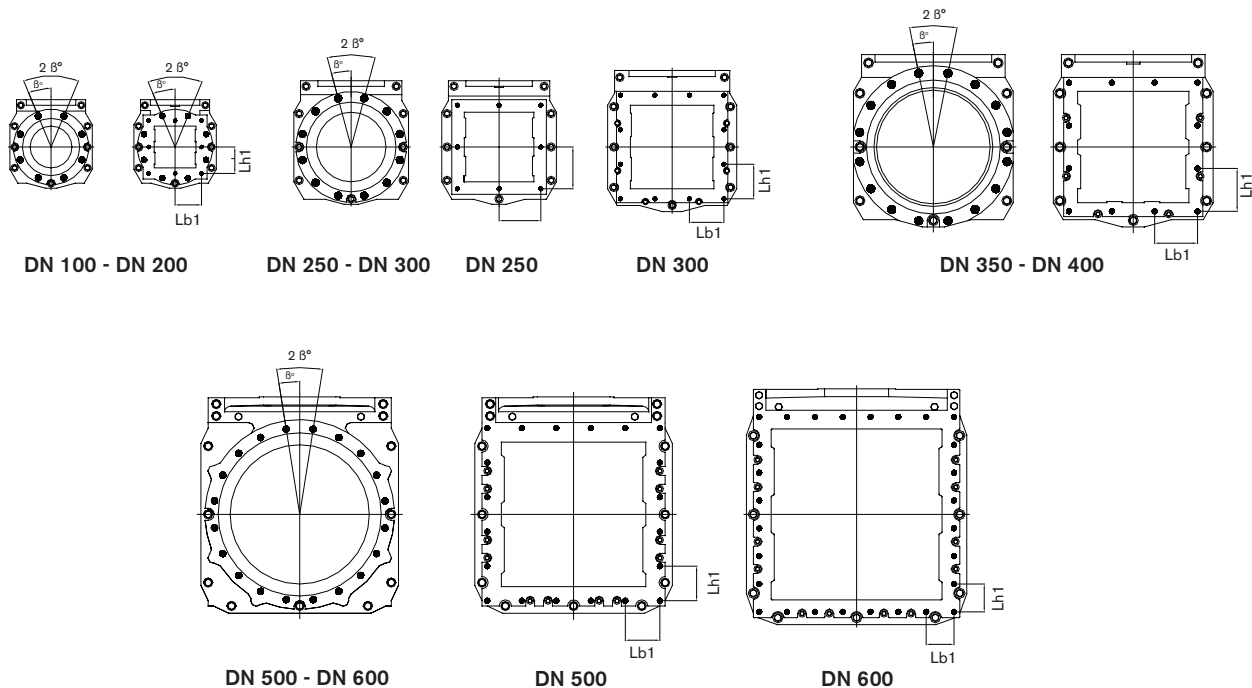


## Part List

Pos.	Part	Material (Name)
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 (CuZn39Pb3)
2b	Slide washer	POM
2c	Bearing	Brass (CuZn39Pb3)
3	Stem	Stainless steel (EN 1.4305) ≥ DN 300 (EN 1.4104)
4	Stem nut	Brass (CuZn39Pb3)
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	Se equipment B
7	Beam	Aluminium (EN AW-6063-T6)

Pos.	Part	Material (Name)
8	Gland	Stainless steel (EN 1.4408)
8a	Stud bolt	Stainless steel (A2), zinc coated
8b	Washer	Stainless steel (A2)
8c	Nut	Stainless steel (A2), zinc coated
9 <sup>10)</sup>	Box packing	See equipment E
10a	Valve body	See equipment A
10b	Valve body	See equipment A
11	Body gasket	Grafoil ≥ DN 300 PTFE
12	Retainer ring	See equipment C
13 <sup>10)</sup>	Seat	See equipment D
14a <sup>10)</sup>	Guide strip	POM
14b <sup>10)</sup>	Top guide strip	≥ DN 300 POM
15	Bushing	Oil-bronze
16	Gate guard, not for HW	Stainless steel (EN 1.4301)
18	Cylinder	Se data sheet

<sup>10)</sup> Recommended spare parts



## Flange drilling

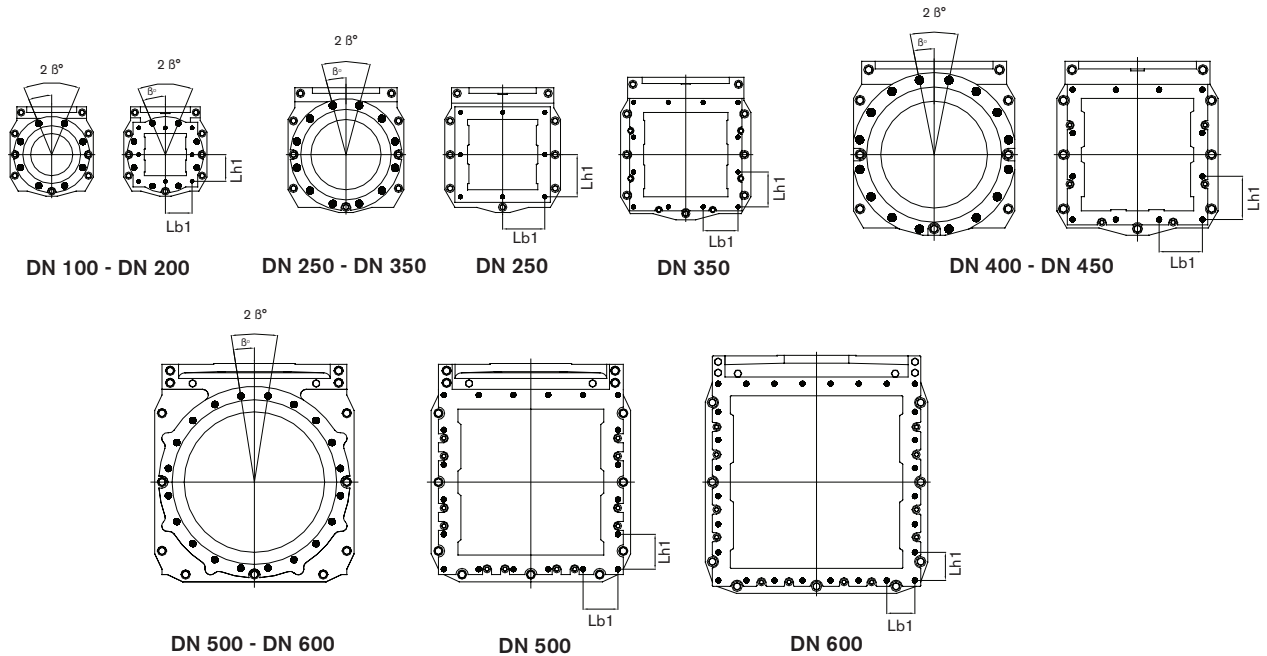
Circular inlet: EN 1092 PN10 (mm)										
DN	100	150	200	250	300	350	400	450	500	600
Outside flange diameter	220	285	340	395	445	505	565	615	670	780
Bolt circle diameter	180	240	295	350	400	460	515	565	620	725
Number of tapped holes (•)	8	8	8	12	12	16	16	20	20	20
Bolt size	M16	M20	M20	M20	M20	M20	M24	M24	M24	M27
β°	45	45	45	30	30	22,5	22,5	18	9	9
Screw lengths <sup>1)</sup>	15	15	15	18	22	20	25	25	33	36

Square outlet: Stafsjö manufacturing standard or EN 1092 PN10 for DN 100 - DN 200 (mm)										
DN	100	150	200	250	300	350	400	450	500	600
Bolt circle diameter	180 <sup>2)</sup>	240 <sup>2)</sup>	295 <sup>2)</sup>	-	-	-	-	-	-	-
Number of tapped holes (•)	8	8	8	8	12	12	12	12	20	28
Lb1 and Lh1	70	95	122,5	150	124	137	154	174	124	100
Bolt size	M12/M16 <sup>2)</sup>	M12/M20 <sup>2)</sup>	M12/M20 <sup>2)</sup>	M12	M12	M16	M16	M16	M16	M16
Screw lengths <sup>1)</sup>	15	15	15	20	23	23	28	24	20	20

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

<sup>2)</sup> Body side with square outlet for sizes DN 100 - DN 200 can be drilled according to EN 1092 PN10.

• Tapped holes



## Flange drilling

### Circular inlet: ASME/ANSI B16.5 Class 150 (mm)

DN	100	150	200	250	300	350	400	450	500	600
Outside flange diameter	228,6	279,4	342,9	406,4	482,6	533	597	635	699	813
Bolt circle diameter	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	11/8"-7	11/8"-7	11/4"-7
β°	45	45	45	30	30	30	22,5	11,25	9	9
Screw lengths <sup>1)</sup>	15	15	15	18	22	20	18	23	33	36

### Square outlet: Stafsjö manufacturing standard or ANSI/ASME B16.5 Class 150 for DN 100 - DN 200 (mm)

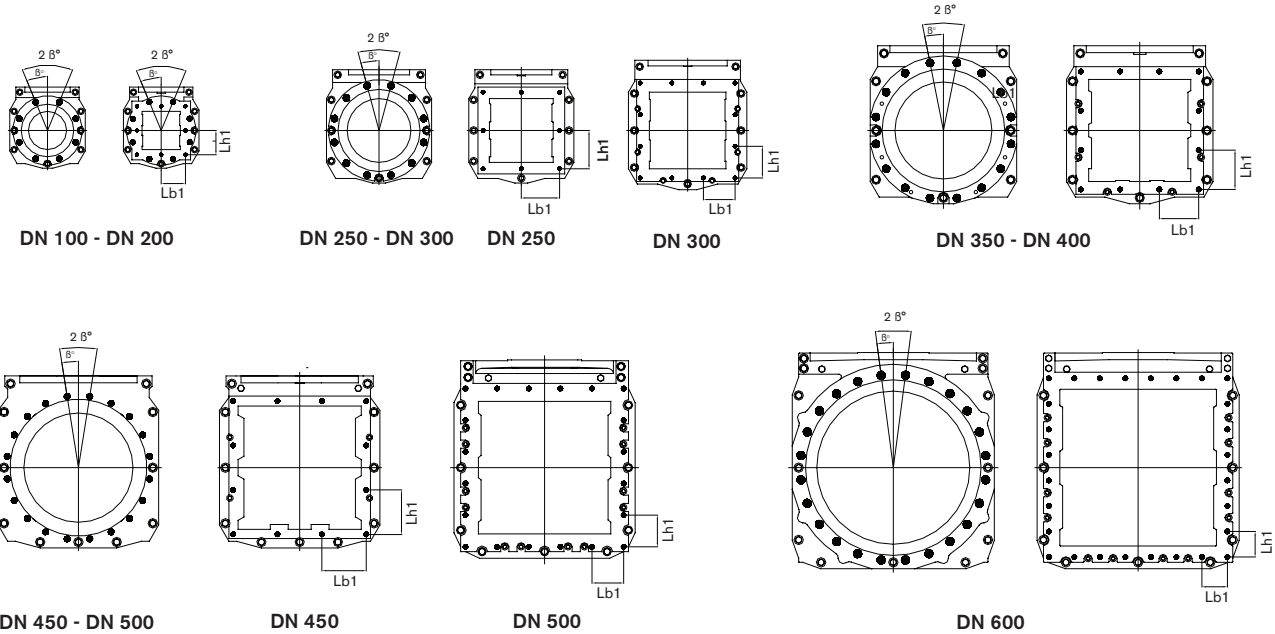
DN	100	150	200	250	300	350	400	450	500	600
Bolt circle diameter	190,5 <sup>2)</sup>	241,3 <sup>2)</sup>	298,5 <sup>2)</sup>	-	-	-	-	-	-	-
Number of tapped holes (•)	8	8	8	8	12	12	12	12	20	28
Lb1 and Lh1	70	95	122,5	150	124	137	154	174	124	100
Bolt size (UNC)	1/2-13 alt. 5/8-11 <sup>2)</sup>	1/2-13 alt. 3/4-10 <sup>2)</sup>	1/2-13 alt. 3/4-10 <sup>2)</sup>	1/2-13	1/2-13	5/8-11	5/8-11	5/8-11	5/8-11	5/8-11
Screw lengths <sup>1)</sup>	15	15	15	20	23	23	28	24	20	20

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

<sup>2)</sup> Body side with square outlet for sizes DN 100 - DN 200 can be drilled according to ANSI/ASME B16.5 Class 150.

• Tapped holes





## Flange drilling

### Circular inlet: JIS B 2238 10K (mm)

DN	100	150	200	250	300	350	400	450	500	600
Outside flange diameter	210	280	330	400	445	490	550	620	675	795
Bolt circle diameter	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
β°	22,5	22,5	15	15	15	11,25	11,25	9	9	7,5
Screw lengths <sup>1)</sup>	15	15	15	18	22	20	18	23	33	36

### Square outlet: Stafsjö manufacturing standard or JIS B 2238 10K for DN 100 - DN 200 (mm)

DN	100	150	200	250	300	350	400	450	500	600
Bolt circle diameter	175 <sup>2)</sup>	240 <sup>2)</sup>	290 <sup>2)</sup>	-	-	-	-	-	-	-
Number of tapped holes (•)	8	8	8	8	12	12	12	12	20	28
Lb1 and Lh1	70	95	122,5	150	124	137	154	174	124	100
Bolt size	M12/M16 <sup>2)</sup>	M12/M20 <sup>2)</sup>	M12	M12	M12	M16	M16	M16	M16	M16
Screw lengths <sup>1)</sup>	15	15	15	20	23	23	28	24	20	20

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

<sup>2)</sup> Body side with square outlet for sizes DN 100 - DN 150 can be drilled according to JIS B 2238 10K

- Tapped holes

## Adapter cone for RKO

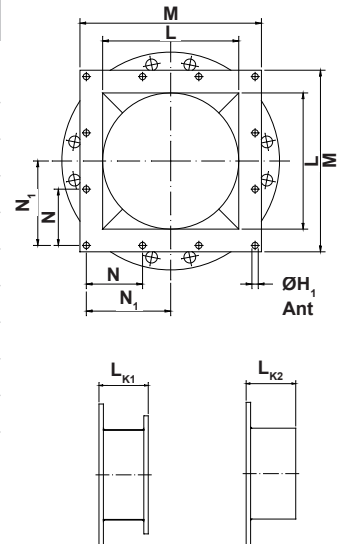
RKO can be equipped with an adapter cone on the square side (outlet). There are two types of adapters; one for flange connection and one for weld connection. Adapter cone for DN 600 can be supplied on request. Material: Stainless steel (EN 1.4436).



## Main dimensions

### Dimensions (mm)

DN	L	M	N	N <sub>1</sub>	ØH <sub>1</sub>	Ant	L <sub>K1</sub>	L <sub>K1</sub> + valve	L <sub>K2</sub>	L <sub>K2</sub> + valve
100	100	180	70	70	14	8	90	142	150	202
150	150	230	95	95	14	8	140	200	200	260
200	200	280	122,5	122,5	14	8	140	200	200	260
250	250	340	150	150	14	8	150	219	210	279
300	300	400	124	186	14	12	167	245	227	305
350	350	450	137	205,5	18	12	165	243	225	303
400	400	500	154	231	18	12	155	244	215	304
450	483	555	174	261	18	12	155	244	215	304
500	558	658	124	310	18	20	190	286	325	421



## Flange drilling

### EN 1092 PN10 (mm)

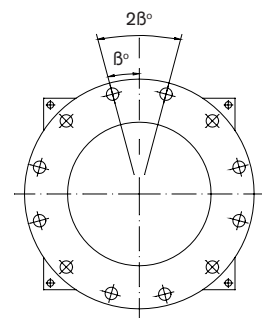
DN	100	150	200	250	300	350	400	450	500
Outside flange diameter	224	280	340	405	480	530	565	615	705
Bolt circle diameter	180	240	295	350	400	460	515	565	620
Number of throughgoing holes	8	8	8	12	12	16	16	20	20
Hole size	18	22	22	22	22	22	26	26	26
β°	22,5	22,5	22,5	15	15	11,25	11,25	9	9

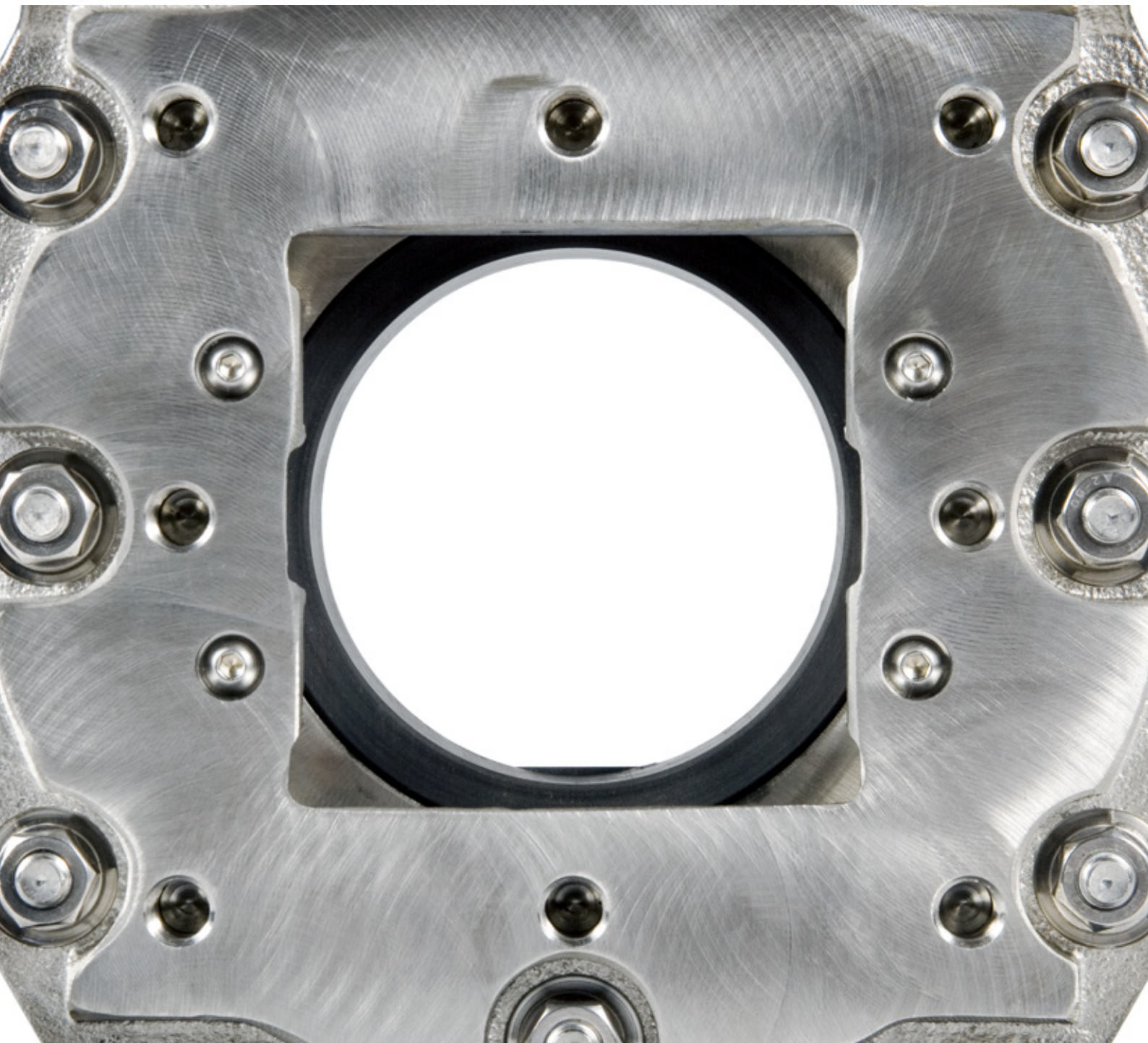
### JIS B 2238 10K (mm)

DN	100	150	200	250	300	350	400	450	500
Outside flange diameter	224	280	340	405	480	530	550	620	705
Bolt circle diameter	175	240	290	355	400	445	510	565	620
Number of throughgoing holes	8	8	12	12	16	16	16	20	20
Hole size	19	23	23	25	25	22	27	27	27
β°	22,5	22,5	15	15	11,25	11,25	11,25	9	9

### ANSI/ASME B16.5 Class 150 (mm)

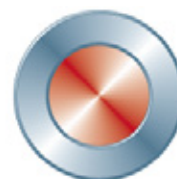
DN	100	150	200	250	300	350	400	450	500
Outside flange diameter	224	280	340	405	480	530	597	635	705
Bolt circle diameter	190,5	241,3	298,4	361,9	431,8	476	540	578	635
Number of throughgoing holes	8	8	8	12	12	12	16	16	20
Hole size	18	22	22	26	26	30	30	33	33
β°	22,5	22,5	22,5	15	15	15	11,25	11,25	9





## Globally active. Locally represented.

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