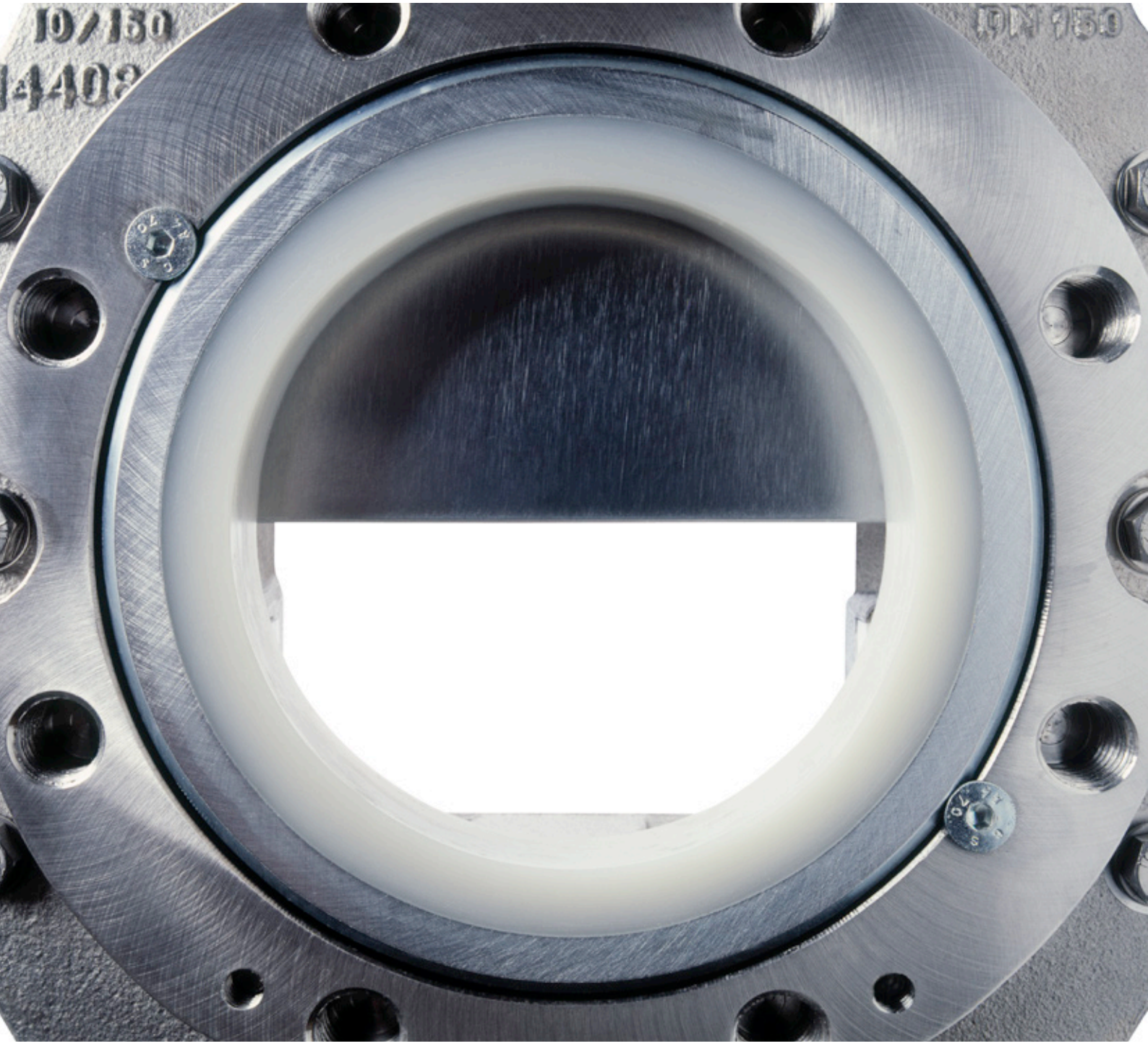
Knife gate valve RKO



Stafsjö
SINCE 1666

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

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 pressure equipment directive 2014/68/EU category I and II module A2. 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 for extended 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 MSS SP-81**	**On request directive 2014/34/EU Group II category: 3 G/D (zone 2 or 22) 2 G/D (zone 1 or 21)**	**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 12266-1:2009 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 12266-1:2009. 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[2)]	**EN 1.4408**
Cast iron[3)]	**EN-JL1030 (GG20)**

[2)] Standard on RKO-E.
[3)] 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 packning		
Material	Code	Maximum temperature °C
TwinPack™	**TY**	**260**
PTFE	**TF**	**280**
Graphite	**TG**	**650**

Actuators

Manual	Code	Automatic	Code
Hand wheel[4)]	**HW**	**Pneumatic cylinder**	**EC**
Chain wheel[5)]	**CW**	**Electrical motor**	**EM**
		Hydraulic cylinder[5)]	**MH**

[4)] For recommended size, see page 5 column E.
[5)] 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.

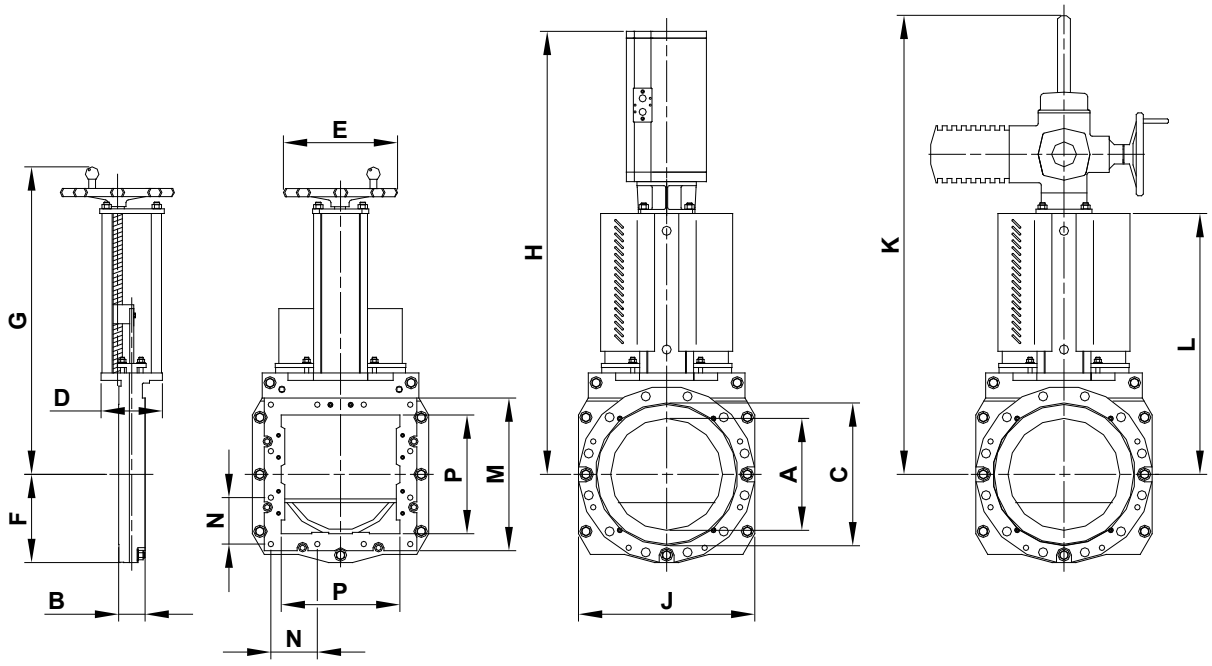
RKO-E-100-P-TY-HW-PN10

- Valve type
- Body material
- Size
- Seat
- Box packing
- Actuator
- Flange drilling

RKO-E-200-P-TY-EC160-PN10-MagLS-SV

- Valve type
- Body material
- Size
- Seat
- Box packing
- Actuator
- Flange drilling
- Inductive limit switches[6)]
- Solenoid valve[6)]

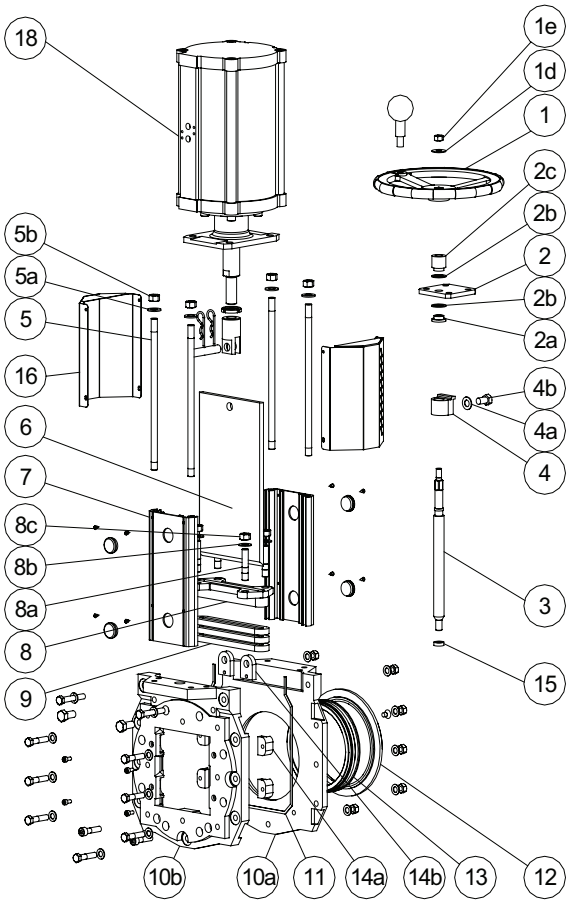
[6)] All electronics must be specified in detail.



Main dimensions

Dimension (mm)														
DN	A	B	C	D	E	F	G	H	J	K	L	M	P	kg[7)]
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**	**-**	**232**	**867**	**1252**	**464**	**1026**	**715**	**400**	**300**	**80**
350	**330**	**78**	**419**	**180**	**-**	**260**	**921**	**1436**	**520**	**1080**	**769**	**450**	**350**	**90**
400	**380**	**89**	**480**	**206**	**-**	**287**	**1069**	**1506**	**574**	**1177**	**862**	**500**	**400**	**140**
450	**428**	**89**	**535**	**208**	**-**	**315**	**1130**	**1684**	**629**	**1450**	**940**	**555**	**483**	**300**
500	**500**	**96**	**586**	**320**	**-**	**355**	**-**	**1973**	**710**	**-**	**1099**	**656**	**519**	**330[8)]**
600	**600**	**100**	**685**	**306**	**-**	**396**	**-**	**2180**	**792**	**-**	**1226**	**742**	**614**	**400[9)]**

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

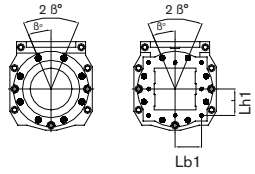


Part List

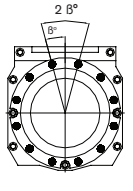
Pos.	Part	Material (Name)
1	Hand wheel	Coated cast iron Ø 200 - Ø 315 (EN-JL1040 (GG25)), ≥ Ø 400 (EN-JL1030 (GG20))
2	Yoke	Stainless steel (EN 1.4301)
2a	Bearing	Brass (CuZn39Pb3)
2b	Slide washer	POM
2c	Bearing	Brass (CuZn39Pb3)
3	Stem	Stainless steel (EN 1.4305) ≥ DN 300 (EN 1.4104)
4	Stem nut	Brass (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[10)]	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[10)]	Seat	See equipment D
14a[10)]	Guide strip	POM
14b[10)]	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

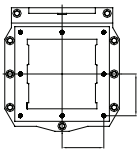
[10)] Recommended spare parts



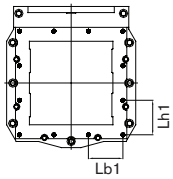
DN 100 - DN 200



DN 250 - DN 300



DN 250



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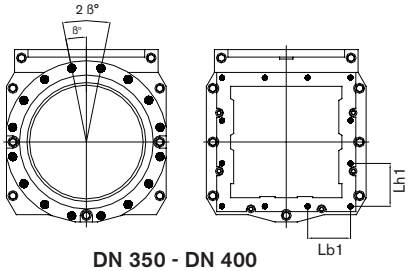
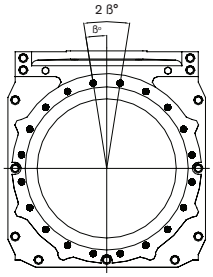
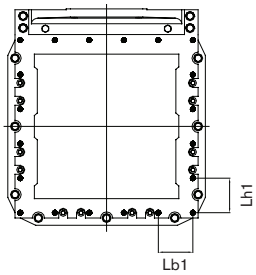


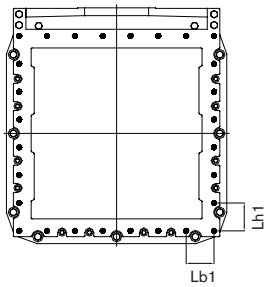
DN 350 - DN 400



DN 500 - DN 600



DN 500



DN 600

Flange drilling

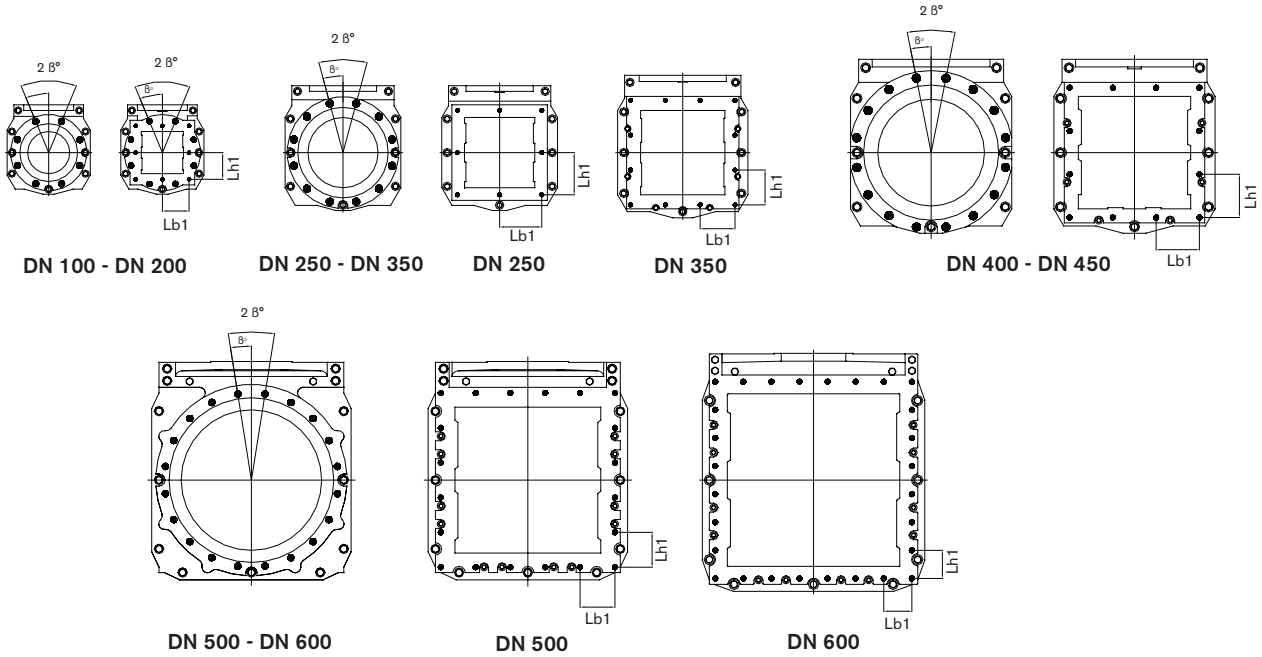
Circular inlet: EN 1092 PN10 (mm)										
DN	100	150	200	250	300	350	400	450	500	600
Outside flange diameter	**220**	**285**	**340**	**395**	**445**	**505**	**565**	**615**	**670**	**780**
Bolt circle diameter	**180**	**240**	**295**	**350**	**400**	**460**	**515**	**565**	**620**	**725**
Number of tapped holes (•)	**8**	**8**	**8**	**12**	**12**	**16**	**16**	**20**	**20**	**20**
Bolt size	**M16**	**M20**	**M20**	**M20**	**M20**	**M20**	**M24**	**M24**	**M24**	**M27**
ß°	**45**	**45**	**45**	**30**	**30**	**22,5**	**22,5**	**18**	**9**	**9**
Screw lengths[1)]	**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[2)]**	**240[2)]**	**295[2)]**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
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[2)]**	**M12/M20[2)]**	**M12/M20[2)]**	**M12**	**M12**	**M16**	**M16**	**M16**	**M16**	**M16**
Screw lengths[1)]	**15**	**15**	**15**	**20**	**23**	**23**	**28**	**24**	**20**	**20**

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

[2)] Body side with square outlet for sizes DN 100 - DN 200 can be drilled according to EN 1092 PN10.

• Tapped holes



Flange drilling

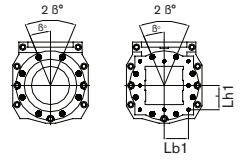
Circular inlet: ASME/ANSI B16.5 Class 150 (mm)										
DN	100	150	200	250	300	350	400	450	500	600
Outside flange diameter	**228,6**	**279,4**	**342,9**	**406,4**	**482,6**	**533**	**597**	**635**	**699**	**813**
Bolt circle diameter	**190,5**	**241,3**	**298,5**	**362**	**431,8**	**476,3**	**539,8**	**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**
ß°	**45**	**45**	**45**	**30**	**30**	**30**	**22,5**	**11,25**	**9**	**9**
Screw lengths[1)]	**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[2)]**	**241,3[2)]**	**298,5[2)]**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
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[2)]**	**1/2-13 alt. 3/4-10[2)]**	**1/2-13 alt. 3/4-10[2)]**	**1/2-13**	**1/2-13**	**5/8-11**	**5/8-11**	**5/8-11**	**5/8-11**	**5/8-11**
Screw lengths[1)]	**15**	**15**	**15**	**20**	**23**	**23**	**28**	**24**	**20**	**20**

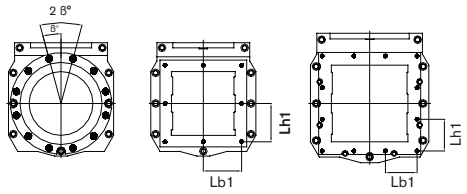
[1)] Add the values with the thickness of pipe flanges, washers and gaskets.

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

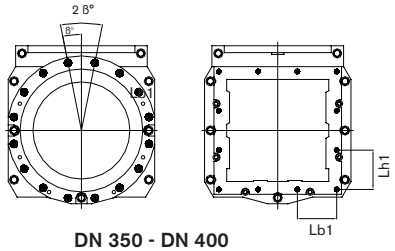
• Tapped holes



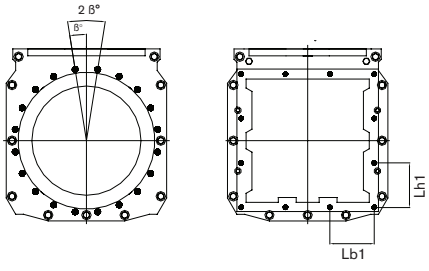
DN 100 - DN 200



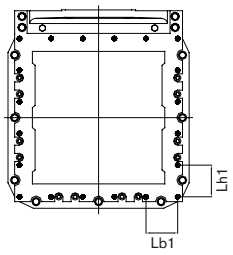
DN 250 - DN 300 DN 250 DN 300



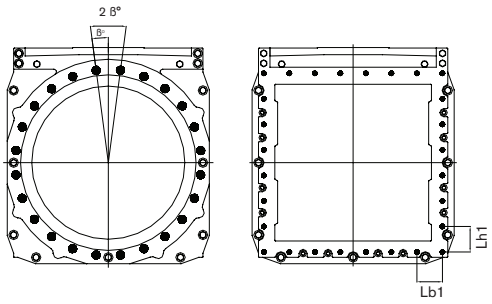
DN 350 - DN 400



DN 450 - DN 500 DN 450



DN 500



DN 600

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**
ß°	**22,5**	**22,5**	**15**	**15**	**15**	**11,25**	**11,25**	**9**	**9**	**7,5**
Screw lengths[1)]	**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[2)]**	**240[2)]**	**290[2)]**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
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[2)]**	**M12/M20[2)]**	**M12**	**M12**	**M12**	**M16**	**M16**	**M16**	**M16**	**M16**
Screw lengths[1)]	**15**	**15**	**15**	**20**	**23**	**23**	**28**	**24**	**20**	**20**

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

[2)] Body side with square outlet for sizes DN 100 - DN 150 can be drilled according to JIS B 2238 10K

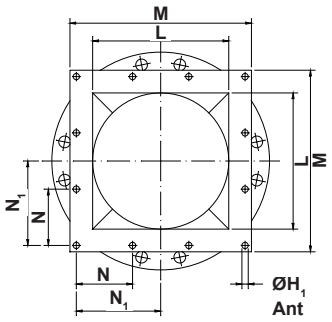
• Tapped holes

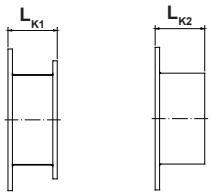
Adapter cone for RKO

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

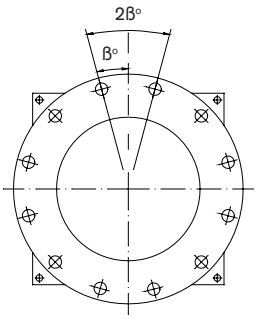
Dimensions (mm)										
DN	L	M	N	N_1	ØH_1	Ant	L_{K1}	L_{K1} + valve	L_{K2}	L_{K2} + valve
100	**100**	**180**	**70**	**70**	**14**	**8**	**90**	**142**	**150**	**202**
150	**150**	**230**	**95**	**95**	**14**	**8**	**140**	**200**	**200**	**260**
200	**200**	**280**	**122,5**	**122,5**	**14**	**8**	**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

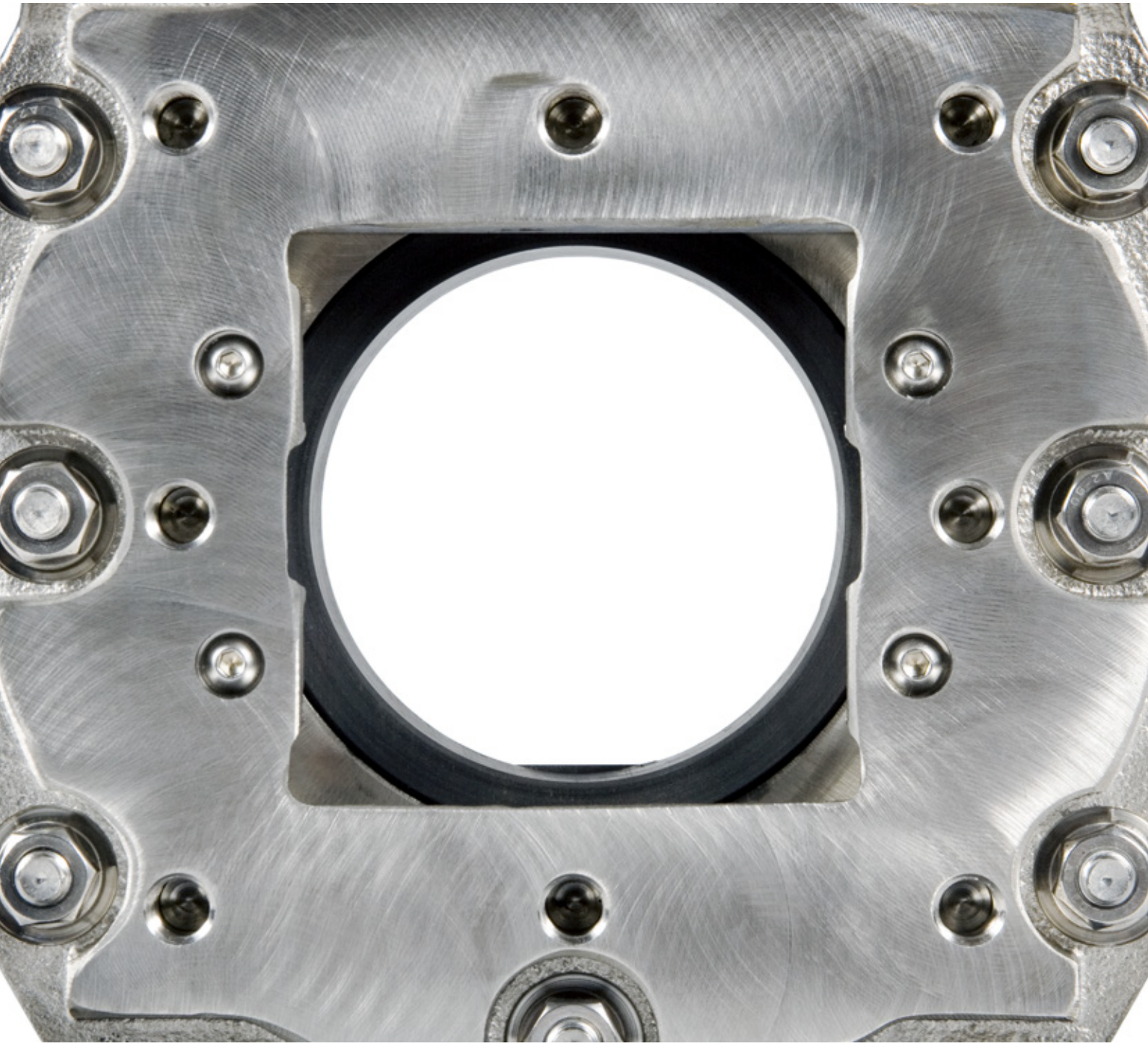
EN 1092 PN10 (mm)									
DN	100	150	200	250	300	350	400	450	500
Outside flange diameter	**224**	**280**	**340**	**405**	**480**	**530**	**565**	**615**	**705**
Bolt circle diameter	**180**	**240**	**295**	**350**	**400**	**460**	**515**	**565**	**620**
Number of throughgoing holes	**8**	**8**	**8**	**12**	**12**	**16**	**16**	**20**	**20**
Hole size	**18**	**22**	**22**	**22**	**22**	**22**	**26**	**26**	**26**
ß°	**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**
ß°	**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**
ß°	**22,5**	**22,5**	**22,5**	**15**	**15**	**15**	**11,25**	**11,25**	**9**

Further information is available on www.stafsjo.com



Globally active. Locally represented.

AFRICA South Africa: Valve & Automation (Pty) Ltd, **ASIA** China: Ebro Armaturen (Beijing) co., Ltd, India: Ebro Armaturen India Pvt. Ltd, Indonesia: Contromatic Prima Mandiri PT, Japan: SKC Co. Ltd, Malaysia: Precision Control SdnBnd, Philippines: Ebro Armaturen (Philippines) Inc., South Korea: Sherpa Automation, Thailand: Ebro Valves (Trading) Co. Ltd., Vietnam: Ebro Valves (Thailand) Co., Ltd, **AUSTRALIA with OCEANIA** Australia: Ebro Armaturen Pacific Pty Ltd, New Zeeland: H.J. Asmuss & Co. Ltd **EUROPE** Austria: Ebro Armaturen GmbH, Belgium: V.C.T. - Valve & Connector Technology n.v., Denmark: Valtor Industri A/S, Finland: Tecalemit Flow Oy, France: Ebro Armaturen, Germany: Ebro Armaturen Gebr. Bröer GmbH, Great Britain: Ebro Valves Ltd, Hungary: Ebro Armaturen Kft, Ireland: ESI Technologies Ltd., Iceland: Hédinn HF, Italy: Ebro Valvole srl, The Netherlands: Ebro Valves B.V., Norway: Bagges AS, Poland: Ebro Armaturen GmbH, Portugal: AxFlow Comércio de Aquipamentos Lda, Russia: LesBumMash Ltd, Roitech and OOO Hawle Sevkom, Spain: Ebro Armaturen España, S.L., Switzerland: Ebro Armaturen Est. & Co. KG, Sweden: Stafsjö Valves AB and Ahlsell Sverige AB, Turkey: Ebro Armaturen Otomasyon Sistemleri San ve Tic Ltd. Sti, Ukraine: Ebro Armaturen GmbH Representative office Kiev **NORTH AMERICA** Canada: Armour Valve Ltd, USA: Ebro Armaturen USA Inc. **SOUTH AMERICA** Argentina: Esco Argentina S.A., Brazil: ELAN Equipamentos Industriais Ltda, Chile: Ebro Stafsjö Valves Chile Ltd
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