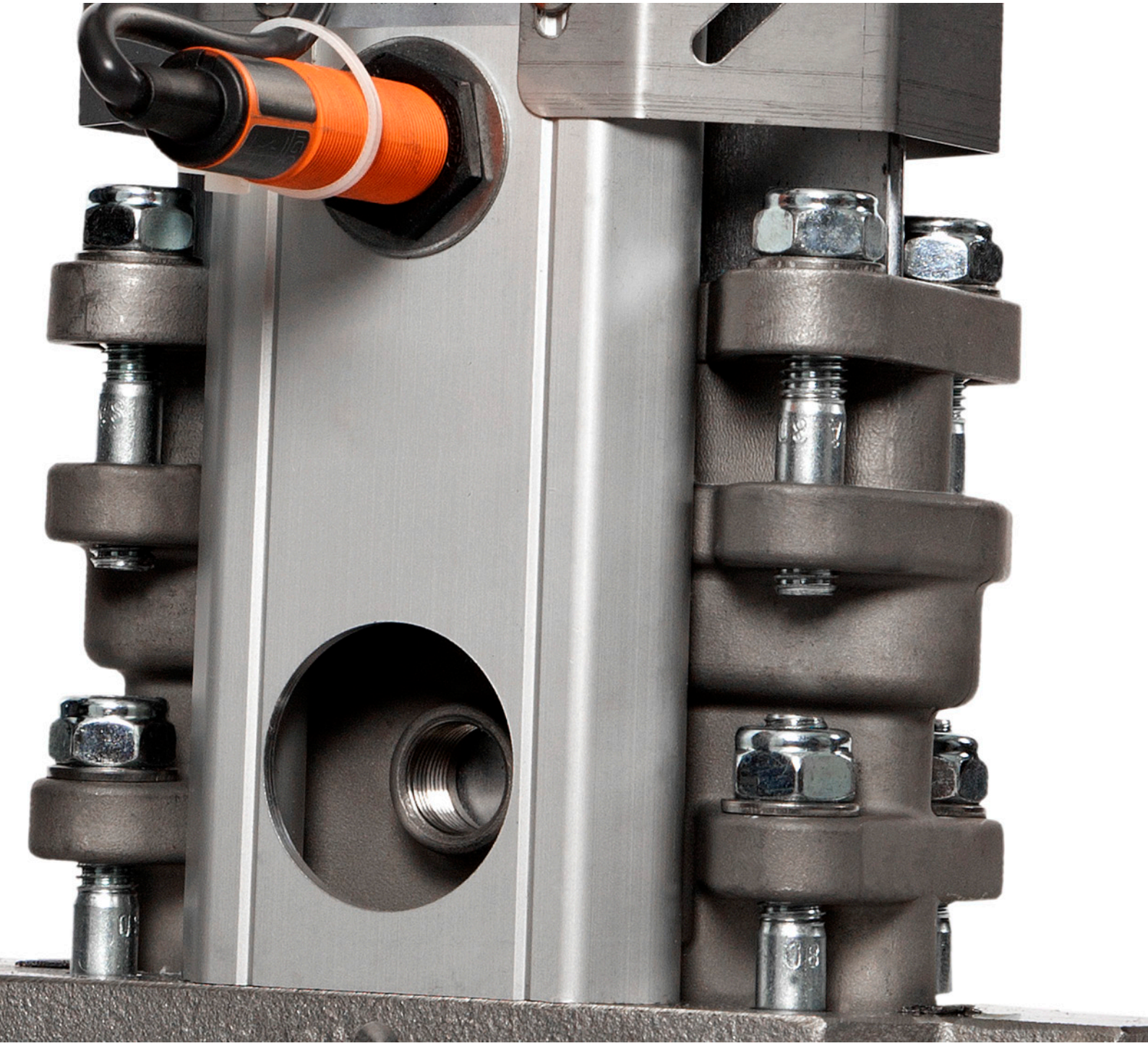
Stafsjö’s standard accessories



Stafsjö
SINCE 1666

Content

Stafsjö's standard accessories for automated processes

Direct mounting of solenoid valves

Stafsjö's EC pneumatic cylinders are as standard supplied with the Namur interface why no extra tubing is needed between the pneumatic cylinder and the solenoid valve.

Solid and flexible top works

Stafsjö's valves are all modular designed making the maintenance smooth and cost-efficient. It also makes it very easy to switch from one actuator type to another one and to automate the process on the site with Stafsjö's ready-to-use actuator sets.

Holes for limit switches

Stafsjö's automated valves are always supplied with holes in the beams for inductive or mechanical limit switches. Mounting kits for Stafsjö's valves are available to order.

A knife gate valve for control purpose

Stafsjö can also supply knife valves with a positioner located on the beams, contected to the gate for control. Several positioner brands are available to order. Our standard comes from PMV.

Double gland is an extra feature for the most demanding applications.

Solenoid valves

The solenoid valve from Hafner with Naumur interface makes the solenoid valve - pneumatic cylinder unit very compact and reliable. It is available in a 1/4" and 1/2" version.

Inductive limit switch

Stafsjö's standard limit switches from IFM are available in a two or a three wire version with a thread M18x1 and 2 m PVC cable. Any other limit switch with thread M18x1 can also be used.

Mechanical limit switch

When it comes to mechanical limit switches, Stafsjö supply the robust Omron with a stainless steel arm as standard mounted in the holes of the beams.

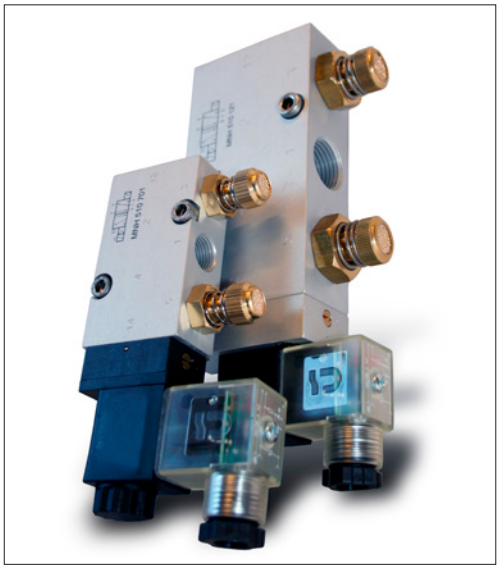
Magnetic limit switch

The EC pneumatic cylinder is as standard supplied with a magnetic washer up to EC 200, which makes it possible to use magnetic limit switches directly mounted onto the cylinder.

Solenoid valves

Stafsjö's standard solenoid valves comes from Hafner. It has a housing of anodized aluminum and its interface corresponds to the Namur standard, which gives a compact design of the actuator/solenoid valve unit.

It is a 5/2 way valve available in 1/4" and 1/2". The solenoid valve is supplied with a pneumatic spring return and as standard Stafsjö install it on the pneumatic actuator to close the knife gate valve at any electrical signal interruption. Further to this the solenoid valve is supplied as standard with manual override to turn, coils in either 24 V DC, 110 V AC or 230 V AC, silencers with speed control and a connector with LED indicator. The solenoid valve correspond to IP class 65.

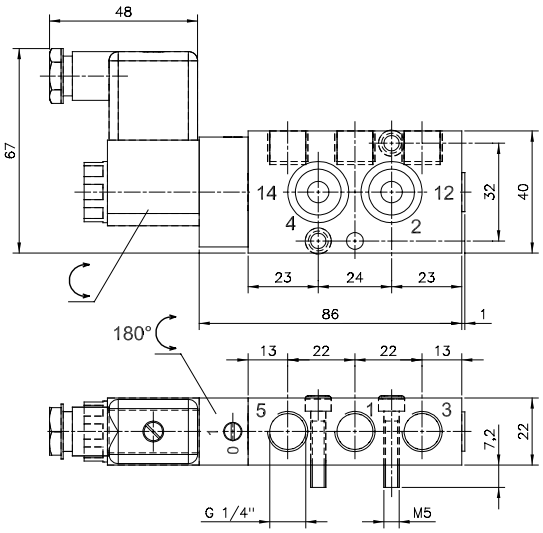


1/4" and 1/2" solenoid valves

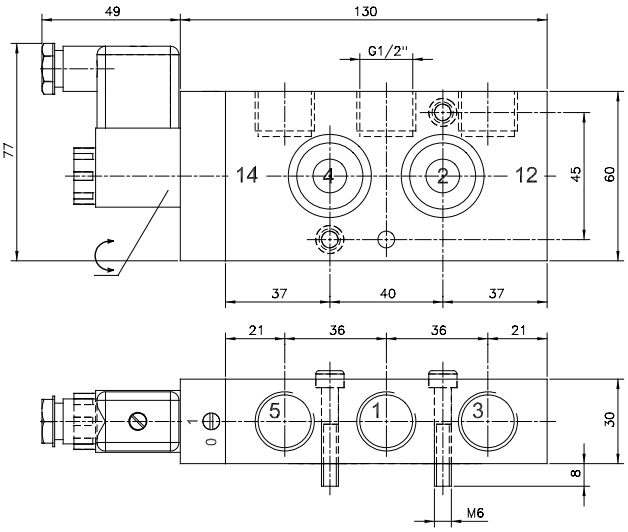
Main dimensions

Dimensions (mm)

Version: 1/4" (silencers excluded)



Version: 1/2" (silencers excluded)



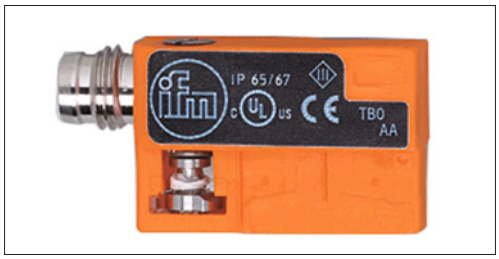
Design data

General Information	
Function:	**5/2 valve monostable**
Interface	**Namur 1 interface according to VDI/VDE 3845 on 1/4". Namur 2 interface on 1/2"**
Material specifications:	**Anodized aluminium body, other internal parts and sealings in stainless steel, brass, POM and NBR.**
Manual override:	**Standard on all versions**
Inidcation type	**Red LED**
Media:	**Cleaned and lubricated or cleaned and unlubricated compressed air quality level 5 acc. ISO 8573-1**
Fluid temperature:	**Between –10°C and +50°C on AC-coils and –10°C and +60°C on DC-coils. Others on request.**
Air-flow:	**1/4" 1250 l/min - 1/2" 3000 l/min**
Operating pressure	**2-10 bar**
Voltage:	**24 V DC ± 10%, 110 V AC ± 10%, 230 V AC ± 10%**
Power consumption:	**3 W / 5 VA**
Cable connection diameter	**6-8 mm**
Protection:	**IP65. IP67 on request.**
ATEX approvals:	**Only on request**

Magnetic limit switch

Stafsjö's pneumatic cylinder range type EC is as standard, in some sizes, supplied with a magnetic ring on the piston. This magnetic ring makes it possible together with a magnetic limit switch to indicate the cylinders' end positions.

Stafsjö's standard magnetic limit switches, the MR0902 from IFM, offers a simple installation and secure operation. It is as standard supplied with 2 m of a three wire connection PUR cable type EVC141 from IFM.



Magnetic limit switch type MR0902

Connection cable type EVC141

Design data

Magnetic limit switch with reed contact	
Type	**MR0902**
Suitable for cylinder	**EC100** **EC125** **EC160** **EC200** **EC250**
Electrical design:	**AC/DC PNP**
Operating voltage:	**5-50 V AC/5-60 V DC**
Output function:	**normally open**
Current rating:	**350 AC/500 DC mA**
Mounting:	**non-flush mountable**
Switching frequency:	**1000 Hz**
Connection:	**M8 connector**
Housing materials:	**housing: PA (polyamide) fixing element: stainless steel/brass**
Ambient temperature:	**-25 - +70°C**
Protection:	**IP 65/IP 67**
Output status indication:	**LED yellow**

Three wire connection cable	
Type	**EVC141**
Suitable for switch:	**MR0902 with M8 connector**
Design	**Straight**
Operating voltage:	**50 V AC / 60 V DC**
Electrical design:	**AC/DC**
Connection:	**PUR cable / 2 m; 3 x 0.25 mm²**
Material body:	**housing: TPU orange** **sealing: Viton**
Material nut:	**Brass nickel-plated**
Ambient temperature:	**-25 - +90°C, cULus: max. 80 °C**
Protection:	**IP 65/IP 67/IP 68/IP 69K**

Inductive limit switch

Stafsjö's automated valves are supplied as standard with holes in the beams for inductive or mechanical limit switches. Mounting kits for Stafsjö's valves are available to order.

Stafsjö's standard inductive limit switch comes from IFM and it is available in two versions; one 3-wire DC PNP and one 2-wire AC/DC. Both switches have a plastic, PBT, housing with thread M18 x 1 and 2 m PVC cable. The maximal sensing ranges for both switches are 8 mm.

Inductive limit switch type IG0006/IG5401

Design data

Two wire version	
Type	**ifm IG0006**
Operating voltage:	**20 - 250 V AC/DC**
Electrical design:	**AC/DC**
Output function:	**normally open**
Current rating (continuous):	**350 AC (50 °C) / 250 AC (80 °C) / 100 DC mA**
Current rating	**î: 2.2 A (20 ms / 0.5 Hz) mA**
Length:	**80 mm**
Mounting:	**non-flush mountable**
Sensing range:	**8 mm**
Switching frequency:	**25 AC / 50 DC Hz**
Connection:	**PVC cable / 2 m; 2 x 0.5 mm²**
Housing materials:	**PBT**
Ambient temperature:	**-25-80 °C**
Protection:	**IP67**
Output status indication:	**LED yellow**

Three wire version	
Type	**ifm IG5401**
Operating voltage:	**10 - 36 V DC**
Electrical design:	**DC PNP**
Output function:	**normally open**
Current rating:	**250 mA**
Length:	**80 mm**
Mounting:	**non-flush mountable**
Sensing range:	**8 mm**
Switching frequency:	**300 Hz**
Connection:	**PVC cable / 2 m; 3 x 0.5 mm²**
Housing materials:	**PBT**
Ambient temperature:	**-25-80 °C**
Protection:	**IP67**
Output status indication:	**LED yellow**

Mechanical limit switch

Stafsjö's automated valves are supplied as standard with holes in the beams for inductive or mechanical limit switches. Mounting kits for Stafsjö's valves are available to order.

Stafsjö's standard mechanical limit switch comes from Omron and it is supplied with a stainless steel arm (AISI 304). It has a double insulated plastic and metallic housing according to IP65. The switch has 1NO and 1NC contact.

Mechanical limit switch type D4V

Design data

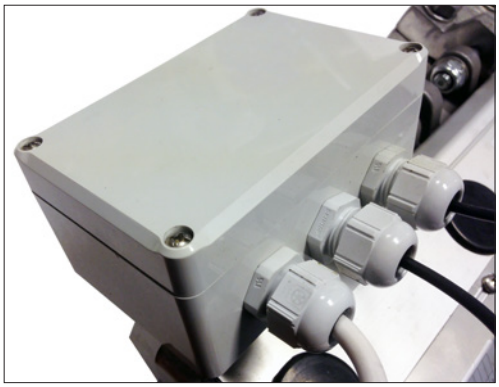
Omron D4V	
Type	**Omron D4V**
Operating speed	**5 mm to 0.5 m/s**
Operating frequency	**30 operations / minute**
Insulation resistance	**100 MΩ min. (500 V DC)**
Contact resistance	**Max. 25 MΩ min. At (initial value)**
Dielectric Strength	**Between terminals with same polarity; 1,000 V AC, 50/60 Hz for 1 minute** **Between current carrying metal parts and ground; 1,500 VAC, 50/60 Hz for 1 minute**
Rated insulation voltage, U_i	**250 V**
Thermal current, I_{the}	**5 A (EN 60947-5-1)**
Rating	**AC: 12-250 V AC at 5 A, resistive load** **DC: 12-125 V DC at 0,4 A, resistive load** **5A, 250 V AC** **0,4 A, 125 V DC**
Short circuit protective device	**10 A fuse, gG or gl (IEC 269)**
Conditional short circuit current	**100 A (EN 60947-5-1)**
Operating environment pollution degree	**3 (IEC 947-5-1)**
Protection against electric shock	**Class: I**
Mechanical life expectancy	**Min. 10 000 000 operations**
Electrical life expectancy	**Min. 300 000 operations 250 V AC, 5 A with resistance load.**
Ambient operating temperature	**-20°C - +60°C (with no icing)**
Ambient operating humidity	**Max. 90%**
Protection	**IP65**

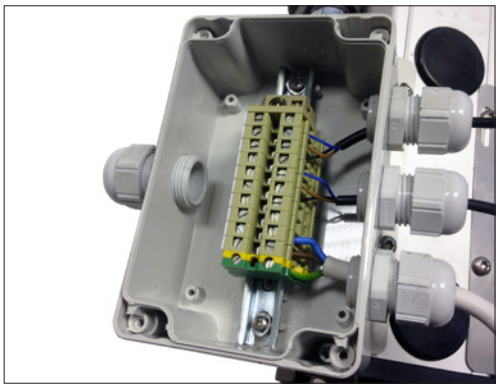
Approvals	
TÜV	**EN 60947-5-1**
UL	**UL 508**
CCC	**GB 14048.5**

Junction box

The junction box is assembled on the knife gate valve upon delivery including wiring of the accessories. In this way the installation becomes really compact.

The junction box comes, as standard, in ABS plastic RAL 7035 and it is supplied in protection IP65. Ambient temperature is max 74°C (DIN 53461 method A). The junction box is supplied with three cable glands on one side PG11 and one on the other side PG13,5. It has 10 terminal blocks and one terminal block for earthing as standard. Other configurations are available on request.





Junction box standard configuration

Fail-safe solution with air accumulator tank

This solution is often used on critical positions where there is a need to be able to open or close the knife gate valve if the electrical power or pneumatic pressure supplied to the pneumatic cylinder is lost. A single-acting pneumatic cylinder can also be used on the valve for the fail-safe function. However on larger knife gate valves the economical benefit of the air tank solution often overcomes the benefits of large single-acting pneumatic cylinders.

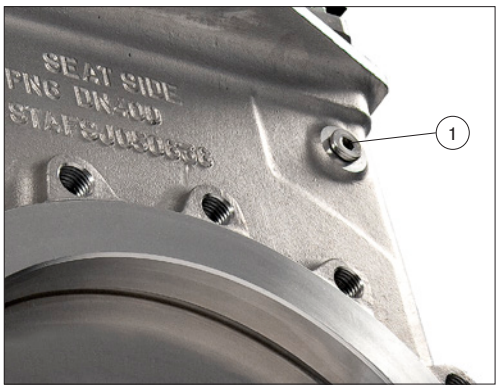
In the scope of our supply the air tank is included as well as the valve package to operate the fail-safe operation. Contact Stafsjö for details.

Fail-safe solution with valve package and air accumulator tank

Purge ports

Several of Stafsjö's valves are supplied with purge ports as standard or can be supplied with this if it is needed. The purge ports can be used to clean inner valve area from any settling media without removing it from the pipe line.

The standard size is available in the data sheets. The position differs from valve type to valve type and from size to size. On several valves the ports can also be positioned customized for specific process conditions.

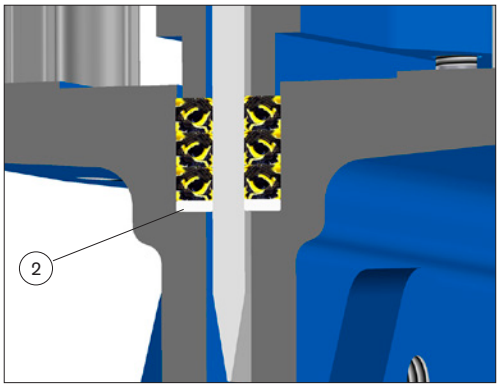


1: Purge ports on the MP valve

Box bottom scraper

The scraper is located below the packing braids in the gland box to work as scraper on the gate, to clean it from media and to support the braid position.

The scraper is available in different materials and for different valve types. Some of Stafsjö's valves are as standard supplied with box bottom scrapers.

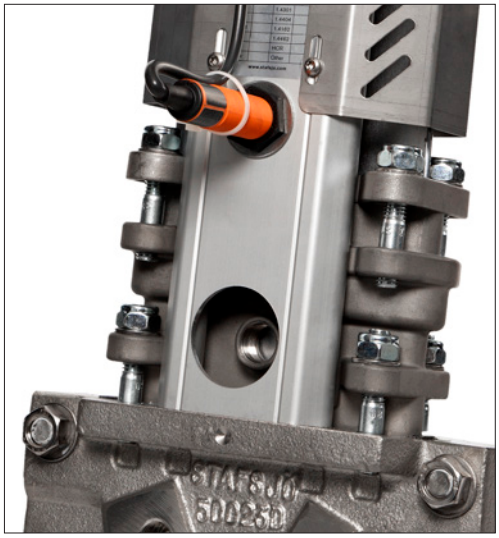


2: Box bottom scraper on the SLV valve

Double gland

Stafsjö's double gland is developed for knife gate valves that are subject to severe operating conditions. It is often used on valves in junk traps and in difficult biomass applications.

The double gland consist of two glands where the lower one has a chamber with integrated purge ports. The first gland takes care of the main sealing function, while the second secures that no media reaches surrounding environment. Flushing between the gland boxes, or pressurising with air if it is dry media, keeps the gate clean and removes media that might have passed through the first gland box.

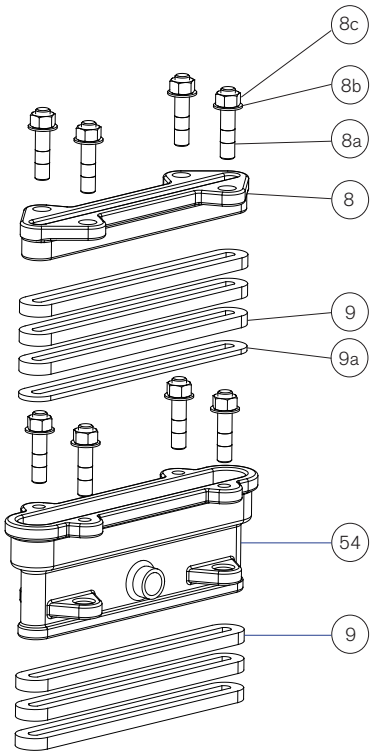


Double gland on HG DN 100

Part list

Pos.	Detail	Material
8	Gland 2	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	Box packing	TwinPack™ as standard
9a	Scraper	UHMW-PE
54	Gland 1and chamber	Stainless steel (EN 1.4408)

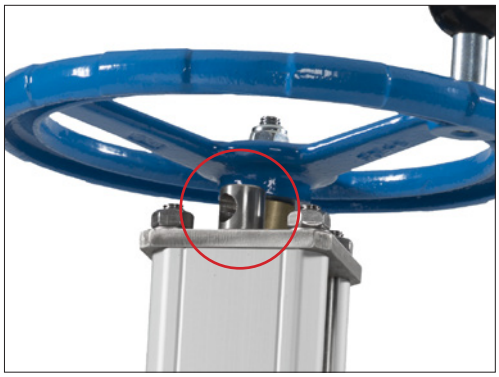
Available sizes and pipe threads on the purge ports				
DN	MV	HG	RKO	JTV
80	**R 1/4”**	**R 1/4”**	-	-
100	**R 3/8”**	**R 3/8”**	**R 3/8”**	-
150	**R 1/2”**	**R 1/2”**	**R 1/2”**	-
200	**R 1/2”**	**R 1/2”**	**R 1/2”**	-
250	**R 1/2”**	**R 1/2”**	**R 1/2”**	**R 1/2”**
300	**R 1/2”**	**R 1/2”**	**R 1/2”**	-
350	**R 1/2”**	**R 1/2”**	**R 1/2”**	-
400	**R 1/2”**	**R 1/2”**	**R 1/2”**	-



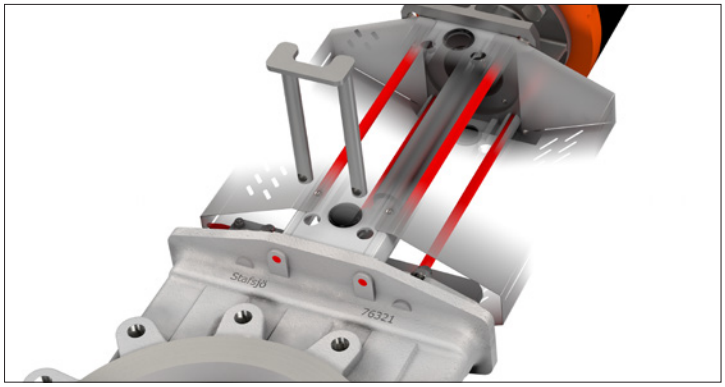
Mechanical lockouts

Stafsjö's lockout solutions ensure the valves stays in position during service and maintenance work. They are available for the entire range upon request, except for Stafsjö's SLV, SLF, SLH and SLX that are always supplied ready to be locked with locking pins. See page 13 for further information.

Pneumatic or hydraulic operated valves can be locked in opened or closed position with a solid lockout fork in stainless steel while hand wheel operated valves can be locked with a padlock through the hand wheel and the locking device on the yoke.



Hand wheel operated valve with a lockout device on the yoke. Padlock normally excluded.

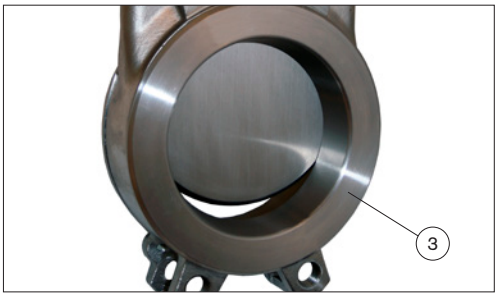


Remote operated valves are locked through the beams and gate in opened or closed position with a solid lockout fork. Stainless steel tie rods encapsulated in the beams highlightened in red.

Pneumatic operated valve with extra holes in the beams and the gate to lock it in either closed or opened position. Lockout fork on request.

Deflection cone

Stafsjö's deflection cone is developed for the MV valve, to direct the flow to the centre of the bore and to protect internal valve parts from abrasion. It shall be installed on the opposite side to the seat side. As standard it is available in stainless steel (EN 1.4408), but it can also be supplied in other materials on request.

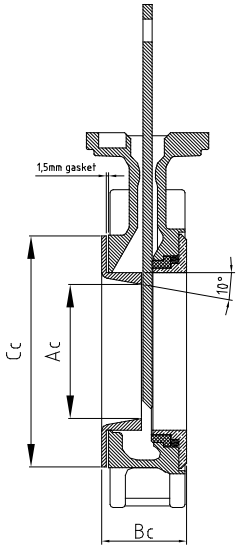


3: Deflection cone on MV DN 150

Main dimensions

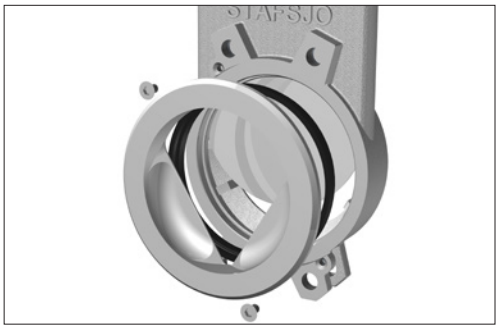
Dimensions (mm)			
DN	Ac	Cc	Bc
50	**39**	**91**	**48**
65	**51**	**107**	**48**
80	**63**	**124**	**57**
100	**86**	**153**	**57**
125	**110**	**179**	**62**
150	**135**	**204**	**66**
200	**179**	**267**	**67**
250	**230**	**319**	**76**
300	**280**	**374**	**85**
350	**325**	**425**	**85**
400	**373**	**479**	**97**
450	**423**	**534**	**97**
500	**467**	**579**	**122**

Main dimensions are only for information. Contact Stafsjö for certified drawings. All specifications are subject to change without notice.



V-port

Stafsjö's knife gate valves MV and HG can be used for control and fixed throttling of a media, often supplied with positioners or electric actuators for control. To achieve a better regulating curve for these kinds of applications, Stafsjö have developed a special V-shaped bore – a V-port. This replace standard retainer ring without any changes in face-to-face dimensions. It is a cast or welded design in stainless steel (EN 1.4408 or EN1.4404). The V-port can be combined with seat rings in metal, EPDM, Nitrile, Viton and PTFE.



V-port on MV DN 150

Valve capacity K_V/C_V

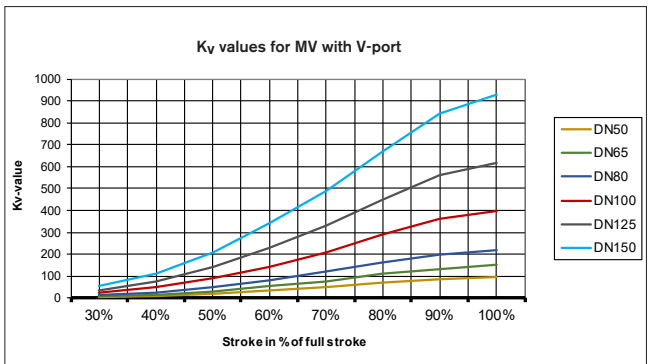
The valve capacity values (K_V) below are empirically produced. All tests are made on the Stafsjö knife gate valve type MV. The tests have been made with a V-port and a standard retainer ring, called round bore.

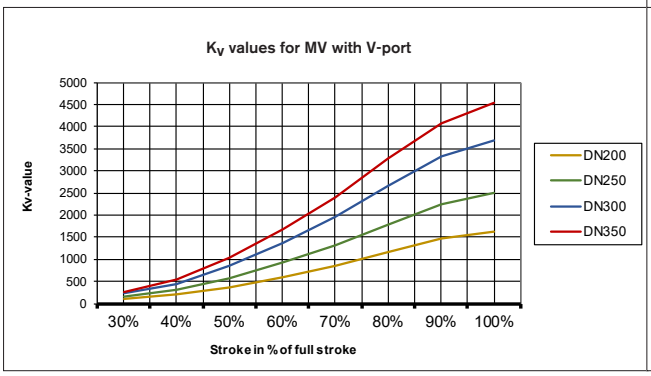
$C_V = 1{,}167 \times K_V$

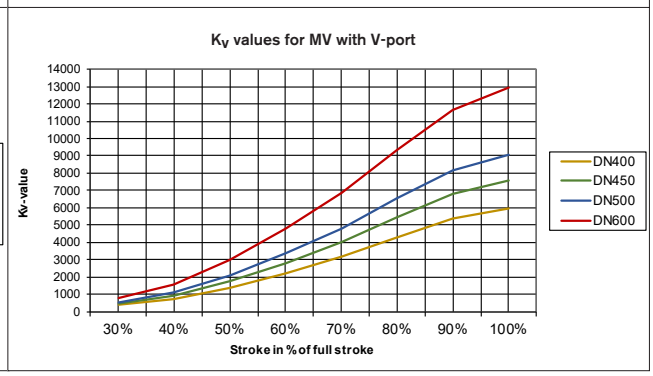
Designation and units:

K_V Valve capacity $\frac{m^3 / h}{\sqrt{bar}}$

C_V Valve capacity gpm/√ psi

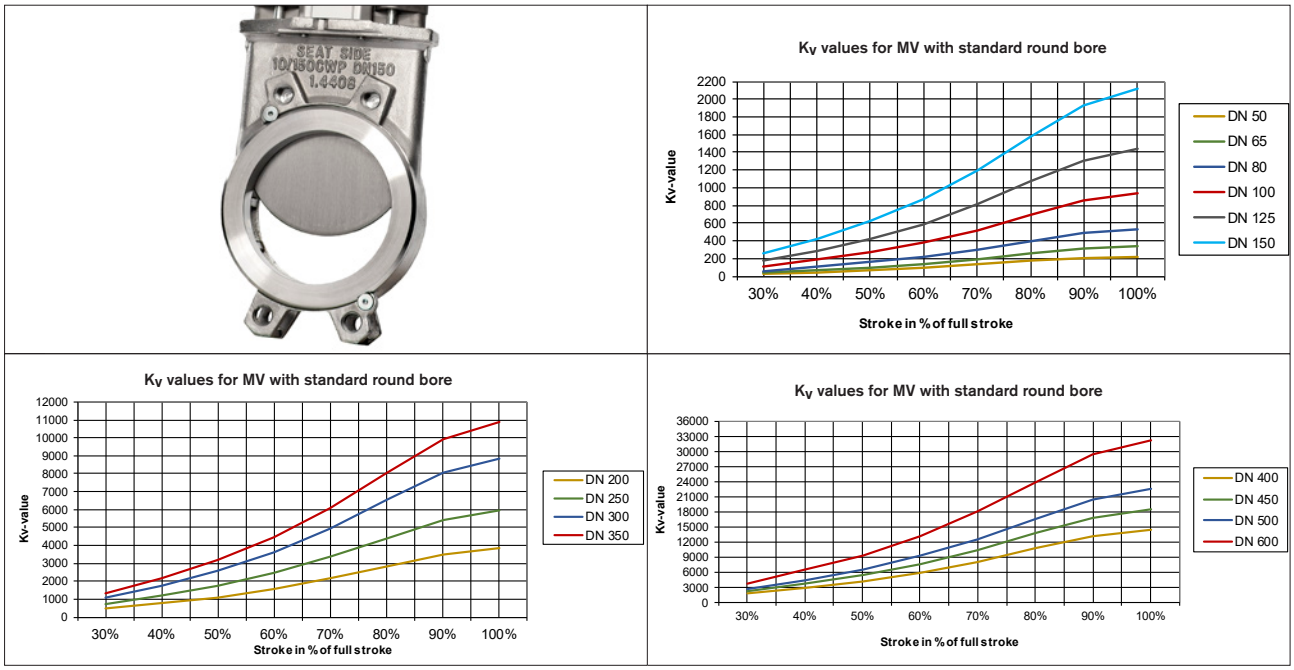






K_V values for MV with V-port

Stroke in % of full stroke														
	50	65	80	100	125	150	200	250	300	350	400	450	500	600
30%	**5**	**10**	**15**	**25**	**35**	**55**	**95**	**150**	**220**	**270**	**360**	**450**	**550**	**770**
40%	**10**	**15**	**25**	**50**	**75**	**110**	**200**	**300**	**440**	**540**	**710**	**910**	**1090**	**1550**
50%	**20**	**30**	**50**	**90**	**140**	**210**	**370**	**570**	**850**	**1040**	**1370**	**1730**	**2090**	**2970**
60%	**35**	**55**	**80**	**140**	**230**	**340**	**600**	**920**	**1370**	**1680**	**2200**	**2790**	**3360**	**4780**
70%	**50**	**75**	**120**	**210**	**330**	**490**	**860**	**1320**	**1960**	**2400**	**3150**	**4000**	**4820**	**6840**
80%	**70**	**110**	**160**	**290**	**450**	**670**	**1170**	**1790**	**2660**	**3270**	**4280**	**5430**	**6550**	**9290**
90%	**85**	**130**	**200**	**360**	**560**	**840**	**1460**	**2240**	**3320**	**4080**	**5350**	**6790**	**8180**	**11620**
100%	**95**	**150**	**220**	**400**	**620**	**930**	**1620**	**2490**	**3690**	**4540**	**5940**	**7540**	**9090**	**12910**



K_V values for MV with standard round bore

Stroke in % of full stroke														
	50	65	80	100	125	150	200	250	300	350	400	450	500	600
30%	**25**	**40**	**60**	**110**	**170**	**254**	**460**	**720**	**1060**	**1310**	**1740**	**2230**	**2710**	**3870**
40%	**45**	**70**	**110**	**190**	**290**	**420**	**770**	**1190**	**1770**	**2180**	**2900**	**3710**	**4510**	**6450**
50%	**65**	**100**	**160**	**270**	**420**	**620**	**1110**	**1730**	**2570**	**3160**	**4210**	**5380**	**6540**	**9360**
60%	**90**	**140**	**220**	**380**	**590**	**870**	**1570**	**2450**	**3630**	**4470**	**5950**	**7600**	**9250**	**13230**
70%	**130**	**190**	**300**	**520**	**810**	**1190**	**2150**	**3340**	**4960**	**6100**	**8120**	**10390**	**12630**	**18070**
80%	**170**	**260**	**400**	**690**	**1070**	**1570**	**2830**	**4420**	**6560**	**8060**	**10730**	**13730**	**16690**	**23880**
90%	**200**	**310**	**490**	**850**	**1310**	**1930**	**3490**	**5430**	**8060**	**9910**	**13200**	**16880**	**20520**	**29370**
100%	**220**	**340**	**530**	**940**	**1440**	**2120**	**3830**	**5970**	**8860**	**10890**	**14500**	**18550**	**22550**	**32270**

Optional accessories for the slurry valves SLV, SLF, SLH and SLX

Stem and piston rod protection

To protect the stem on hand wheel operated valves and the piston rod on pneumatic operated valves from dirt and dust, Stafsjö can supply a kit that protects the details throughout the entire stroke.

Bottom cover

When the slurry valves are operated some media is discharged below the valves. To control this discharge, the valve bodies' integrated purge ports must be utilized, if it is not clean media, and a bottom cover must be assembled on SLV and SLF and bottom screw plugs on SLH and SLX.

The bottom cover is supplied in coated nodular iron together with a gasket (Dixo 4000), screws and washers in stainless steel (A2). The bottom screw plugs on SLH and SLX are supplied in zinc coated steel.

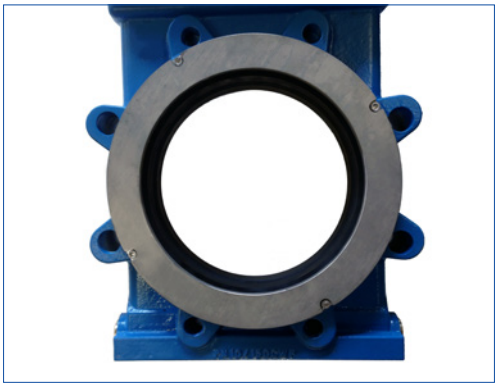
Locking pins

For security reason the slurry valves are always supplied with extra holes in the beams and the gate to lock it in either opened or closed position with one or two locking pins, which can be ordered separately. The locking pins are supplied in stainless steel (EN 1.4301).

Load distribution rings

When the connecting pipes and flanges are rubber lined or when they do not cover the metal frame around the seats, there is a need to install load distribution rings between the seats and the flanges to ensure the seats will stay in correct position after every valve maneuvering. If load distribution rings are ordered they are, as standard, assembled on the valve upon delivery. Please see each product data sheet for dimension details on the metal frame.

The load distribution rings are supplied in stainless steel (EN 1.4301) with screws to assemble it on the valve in stainless steel (A4). Other materials are available on request.



Stem extensions

Stafsjö is able to supply robust, steady and proper dimensioned stem extension kits for the valves in two versions; one for shorter extensions up to 1,5 m and one for longer than 1,5 m. The valves can also be prepared for T-key maneuvering according to standard DIN 3223 C.

Stem extension short (< 1,5 m)

This stem extension is very easy to install and consist of few parts. Two adapters are included; one for the valve stem (M) and one for the hand wheel (G). Both adapters are supplied in stainless steel (EN 1.4436).

The stem extension must be supported with minimum one support close to the actuator. Stem extension supports are the same as for stem extension long, see picture on next page.

Stem extension short on WB14

Details in stem extension short

Valve stem adapter (M)

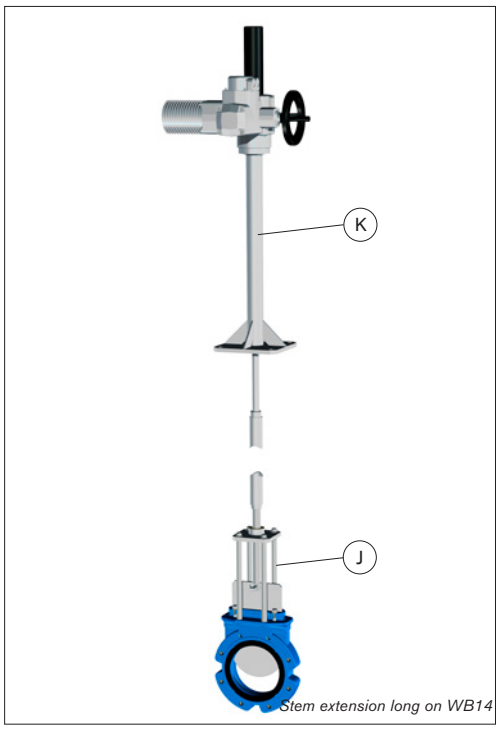
Hand wheel adapter (G)

Holes to connect the adapters to the stem. Screws and nuts in stainless steel (A4) are included in the stem extension kit.

Stem extension long (> 1,5 m)

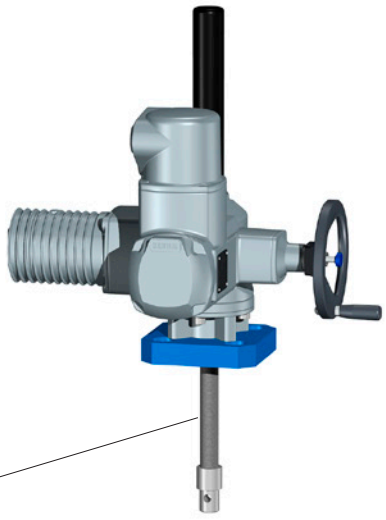
This stem extension kit offers great flexibility and it can be combined with all of Stafsjö's valves and actuators. The stem extension has a linear movement and all valves and actuators are therefore supplied with rising stems. The knife gate valves are also supplied with pillars (J) in stainless steel for optimal corrosion resistance.

The stem extension must be supported with minimum one support close to the actuator. The distance between the stem extension supports shall not exceed 1700 mm. Floor column (K) for the actuator can be supplied on request for any actuator and it is available in coated steel or stainless steel (EN 1.4436).



Stem extension long on WB14

Details in stem extension long



Hand wheel with rising stem incl. pipe joint and yoke (R).

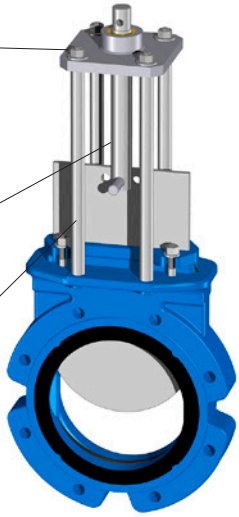
Threaded stem with a pipe joint and adapter for electric actuator (Q)

Pipe joint (D)

Yoke with bearing for stem extension rod (H)

Stem extension rod with pipe joint and gate attachment (F)

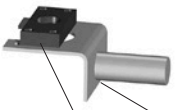
Pillars in stainless steel (J)



Pneumatic cylinder with pipe joint attachemnt (S)

Stem extension support for floor attachment (C)

Stem extension support flat (A)



Stem extension support round (B)

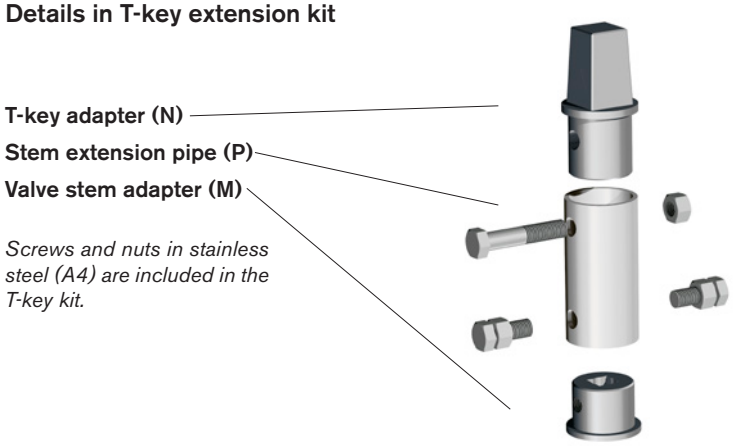
Bearing plate for guiding of the pipe (E), which is supplied with supports A, B and C.

Screws, nuts and washers in stainless steel (A4) are included to connect the stem extension parts.
Stem extension supports (A, B, C), pipe joint (D), stem extension rod (F) and pillars (J) are supplied in stainless steel. The bearing plate (E) is supplied in HD-polyethylene. The supports (A, B, C, E) and pipe joint (D) can also be used for stem extension short. See each valve data sheet for material specifications on other parts.

Stem extension with a T-key

The top of the non-rising stem can be equipped with a cone-shaped adapter for T-key manoeuvring, which is designed according to DIN 3223 C. The T-key adapter (N) and valve stem adapter (M) are supplied in stainless steel (EN 1.4436).

Details in T-key extension kit



Screws and nuts in stainless steel (A4) are included in the T-key kit.

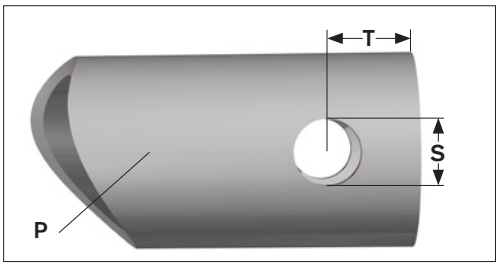
Stem extension with a T-key on WB14

Minimum length of T-key adapter (mm)*				
Minimum length	MV sizes	HG sizes	WB sizes	RKO sizes
135 (Tr 19)	**50 - 150**	**80 - 150**	**80 - 150**	**100**
155 (Tr 25)	**200 - 300**	**200 - 250**	**200 - 300**	**150 - 250**
175 (Tr 31,5)	**350 - 400**	**300 - 350**	**-**	**300 - 350**
180 (Tr 40)	**450 - 600**	**400 - 600**	**-**	**400**

** Measured from valve yoke to top of adapter.*

Stem extension pipe

The stem extension pipe is available in three different sizes, depending on which valve type it will be used on and its size. Stafsjö can supply suitable pipe length, prepared with holes (S) for connection to the valve adapters with screws and nuts. As standard the pipe is supplied in stainless steel (EN 1.4301).



Recommended pipe sizes (mm)						
Ø pipe (P)	Ø hole (S)	Distance (T)	MV sizes	WB sizes	HG sizes	RKO sizes
33,7 x 3,2	**11**	**12**	**50 - 150**	**50 - 150**	**80 - 150**	**100**
48,3 x 3,2	**13**	**17**	**200 - 400**	**200 - 400**	**200 - 350**	**150 - 350**
60,3 x 3,6	**17**	**22**	**450 - 600**	**300 - 600**	**300 - 400**	**400**

Floor column and actuator sizes

Recommended floor column (K) sizes			
Ø pipe (P)	Floor column (K)	Maximum EC size	Maximum AUMA size
33,7 x 3,2	**Small**	**EC 160**	**SA 07.6**
48,3 x 3,2	**Small**	**EC 200**	**SA 10.2**
48,3 x 3,2	**Large**	**EC 200**	**SA 14.2**
60,3 x 3,6	**Large**	**EC 250**	**SA 14.6**

Further information is available on www.stafsjo.com

Globally active. Locally represented.

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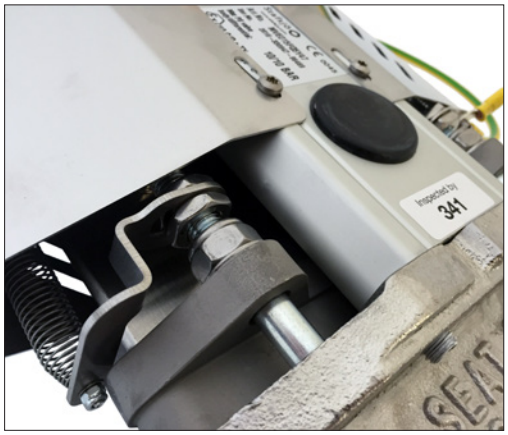
Stafsjö’s ATEX solutions for category 1 D (Zone 20)

Stafsjö
SINCE 1666

ATEX solutions for category 1 D (Zone 20)

For hazardous areas Stafsjö is able to supply several solutions. This document present knife gate valves and materials to use in ATEX 2014/34/EU II cat 1 D (Zone 20). The valves are also CE marked accordingly.

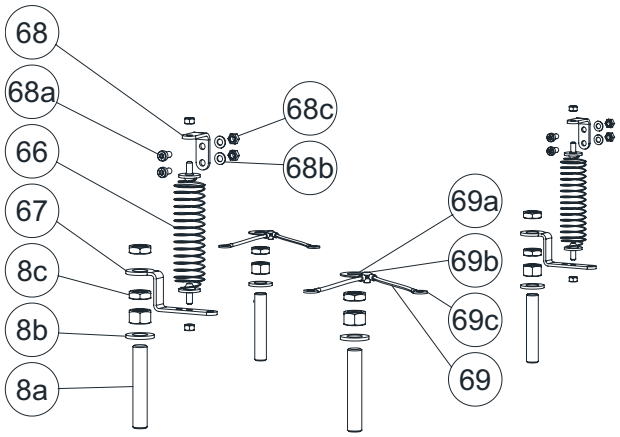


In order to fulfill the CE marking all accessories and actuators must be ATEX classified according to at least the same category as the valve. Manual operated valves are not in the scope of the ATEX directive and therefore excluded in this document.

Non-corrosive resistant materials are coated in a conductive colour RAL7001 according to Stafsjö's standard, which fulfill the requirements in EN ISO 12944 class C3. No aluminium is allowed in category 1 why the standard aluminium beams and tie rods are replaced by stainless steel pillars and beams.

All valves are pressure tested according EN 12266-1:2009. Further information is presented in each valve data sheet available on www.stafsjo.com.

Drawing and table A-1



Atex spring solution

valid for all valve types pos A-1

Pos.	Part	Available materials
8a	Pin bolt	Stainless steel A2, A4, fzb
8c	Nut	Stainless steel A2/A4
66	Contact spring	EN1.4310
67	Spring holder	EN1.4301
68	Spring holder	EN1.4301
68a	Screw	Stainless steel A2, A4
68b	Washer	Stainless steel A2, A4
68c	Nut	Stainless steel A2, A4
69	Earthing cable	PVC covered copper
69a	Connecting washer	EN1.4301
69b	Rivet	EN1.4436
69c	Cable shoe	

Top works

valid for all valve types

Pos.	Part	Available materials
2	Yoke plate for electric maneuver	EN1.4301, EN1.4404 or Q235 coated with conductive coating
3	Rising stem for electric man.	EN1.4305, EN1.4016, EN1.4301,
5	Pillars	EN1.4436, EN1.4404
7	Beams	EN1.4301, EN1.4404
16	Gate protection	EN1.4301, EN1.4404
17	Gate clevis	EN1.4301, EN1.4404, 1.4305
20	Clevis pin	EN1.4305
38	Adapter for pneum. actuator	EN1.4301

Pressure data MV

Maximum working pressure body at 20°C		Maximum differential pressure in preferred direction at 20°C		Maximum differential pressure in reverse direction at 20°C for seats E/N/V		
DN	bar	DN	bar	DN	bar[1)]	bar[2)]
50 - 125	**16**	**50 - 125**	**16**	**50 - 200**	**3,5**	**3,5**
150 - 300	**10**	**150 - 300**	**10**	**250**	**3,0**	**3,0**
350 - 600	**6**	**350 - 600**	**6**	**300 - 450**	**On request[3)]**	**3,0**
700 - 1600	**4**	**700 - 1000**	**4**	**500 - 1600**	**On request[4)]**	**-**
		1200-1600	**2 or 4**			

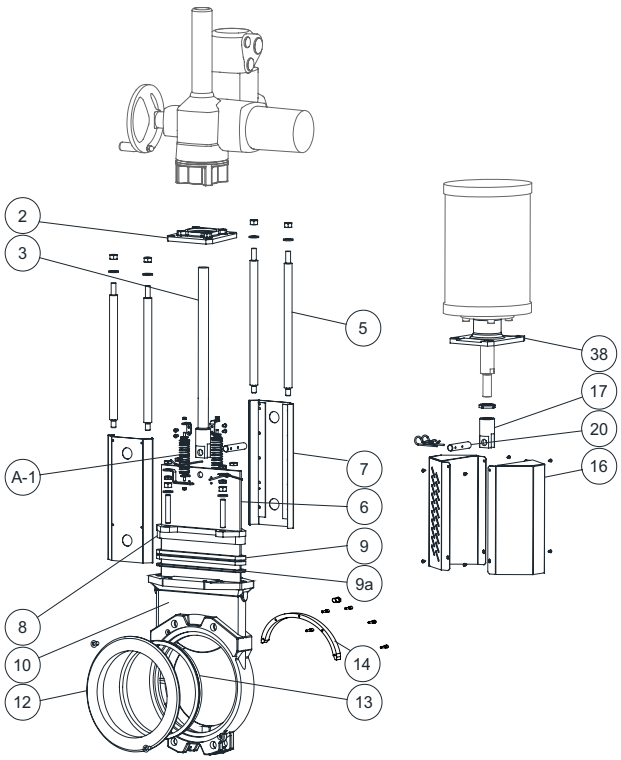
Pressure data MP

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
400	**6**	**400**	**6**
500 - 600	**4**	**500 - 600**	**4**

Part list MV and MP

Pos.	Part	Available materials
A-1	Atex solution	See Table A-1 page 2
6	Gate MV	EN1.4301 (AISI 304), EN1.4404 (AISI 316L), EN1.4462, EN1.4547, EN1.4529, EN1.4410 (SAF2507), EN1.4438 (317L), Hastelloy C276
	Gate MV	EN1.4404 (AISI 316L), EN1.4462
8	Gland MV	JS1050 (GGG50), EN5.3105, EN1.4408, EN1.4470, Hastelloy C276, 254 SMO
	Gland MP	EN1.4408, EN1.4470
9	Box packing MV, MP	Twin Pack™, Graphite, PTFE
9a	Scraper MV	PTFE, UHMW-PE
10	Valve body MV	EN1.4408, EN1.4470, EN5.3105, A351 (CG3M, EN1.4581), Hastelloy C276, ASTM A216 WCB, WCC, JS1050 (GGG50), JL1030 (GG20), 254 SMO
	Valve body MP	EN1.4408, EN1.4470
12	Retainer ring MV	EN.1.4408, EN1.4470, 254 SMO, ASTM A216 WCB, Hastelloy C276, A351 (CG3M, EN1.4581), 1.4438 (317L)
	Retainer ring MP	EN.1.4408, EN1.4470
13	Seat MV	Nitrile, EPDM, FKM Black (Viton), Metal/Grafoil, PTFE O-ring Nitrile/ FKM black (Viton)/EPDM
	Seat MP	PTFE O-ring Nitrile/FKM black (Viton)/EPDM
14	Gate support, only MP	POM-C

See page 2 for pos 2, 3, 5, 7, 16, 17, 20 and 38. Other according to original data sheet.



1) Valve body supplied in steel
2) Valve body supplied in iron
3) Max 3,0 bar
4) Max 1,0 bar

Pressure data HL

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
400	**6**	**400**	**6**
500 - 800	**4**	**500 - 800**	**4**

Pressure data HG

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
80 - 250	**10**	**80 - 250**	**10**
300 - 800	**6**	**300 - 800**	**6**
900 - 1200	**4**	**900 - 1200**	**4**

Pressure data HP

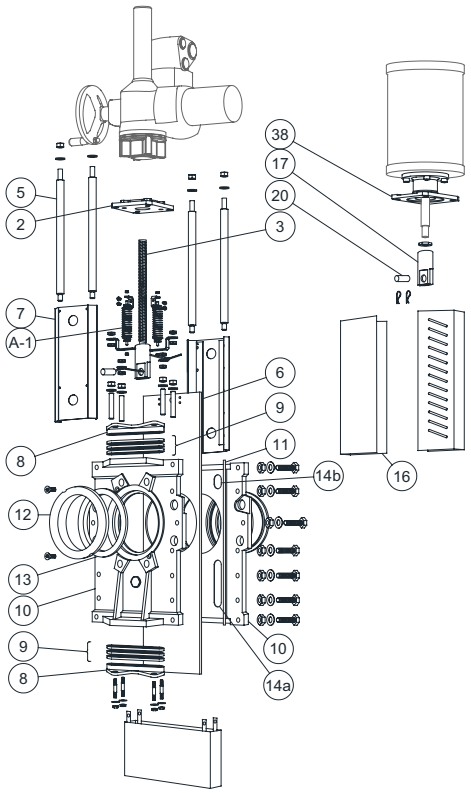
Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
300 - 800	**10**	**300 - 800**	**10**
900	**6**	**900**	**6**

Pressure data HX

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
200 - 500	**20**	**200 - 500**	**20**

Part list HL, HG, HP and HX

Pos.	Part	Available materials
A-1	Atex solution	See Table A-1 page 2
6	Gate HL	EN1.4404 (AISI 316L), EN1.4462
	Gate HG	EN1.4404 (AISI 316L), EN1.4462, EN1.4547, EN1.4529
	Gate HP	EN1.4462, EN1.4547, EN1.4529
	Gate HX	EN1.4404 (AISI 316L) EN1.4462, EN1.4547, EN1.4529
8	Gland HL	EN1.4408, EN1.4470
	Gland HG	JS1050 (GGG50), EN1.4408, EN1.4470, 254 SMO
	Gland HP, HX	EN1.4408, EN1.4470, 254 SMO
9	Box packing HL, HG, HP, HX	Twin Pack™, Graphite, PTFE
9a	Scraper HL. HG, HP, HX	PTFE, UHMW-PE
10	Valve body HL	EN1.4408, EN1.4470
	Valve body HG	EN1.4408, EN1.4470, EN5.3105, 254 SMO, A351 (CG3M, EN1.4581), Hastelloy C276, ASTM A216 WCC, JL1030 (GG20)
	Valve body HP	EN1.4408, EN1.4470, EN5.3105, 254 SMO
	Valve body HX	EN1.4408, EN1.4470, 254 SMO
12	Retainer ring HL	EN1.4408, EN1.4470
	Retainer ring HG	EN.1.4408, EN1.4470, 254 SMO, Hastelloy C276, A351 (CG3M, EN1.4581), EN1.4438 (317L)
	Retainer ring HP, HX	EN.1.4408, EN1.4470, 254 SMO



13	Seat HL, HX, HP	PTFE with o-ring Nitrile/FKM black (Viton)/EPDM
	Seat HG	Metal with Grafoil, PTFE with o-ring Nitrile/FKM black (Viton)/EPDM
14a/b	Guiding pads HL, HG, HP, HX	PTFE

See page 2 for pos 2, 3, 5, 7, 16, 17, 20 and 38. Other according to original data sheet.

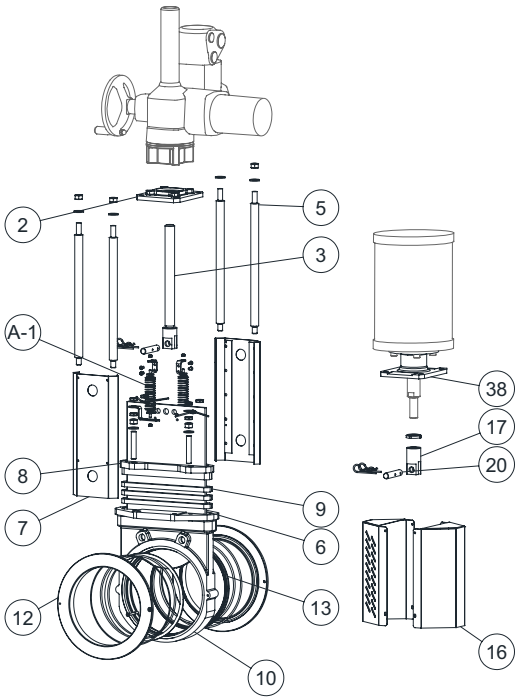
Pressure data XV

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
80 - 150	**16**	**80 - 350**	**10**
200 - 600	**10**	**400 - 600**	**6**
700 - 900	**6**	**700 - 1000**	**4**
1000	**4**		

Part list XV

Pos.	Part	Available materials
A-1	Atex solution	See Table A-1 page 2
6	Gate	EN1.4404 (AISI 316L), EN1.4462
8	Gland	EN1.4408, EN1.4470
9	Box packing	Twin Pack™, Graphite, PTFE
9a	Scraper	PTFE, UHMW-PE
10	Valve body	EN1.4408, EN1.4470, ASTM A216 WCC, A351 (CG3M, EN1.4581)
12	Retainer ring	EN.1.4408, EN1.4470 , EN1.4438 (317L), A351 (CG3M, EN1.4581)
13	Seat	PTFE O-ring Nitrile/FKM black (Viton)/EPDM

See page 2 for pos 2, 3, 5, 7, 16, 17, 20 and 38. Other according to original data sheet.



Pressure data WB

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
350 - 400	**6**	**350 - 400**	**6**
500 - 600	**4**	**500 - 600**	**4**
700 - 1200	**4 or 6**	**700 - 1200**	**4 or 6**
1400	**2 or 4**	**1400**	**2 or 4**

Pressure data WB11

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
50 - 300	**10**	**50 - 300**	**10**

Pressure data WB12

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
150 - 200	**4**	**150 - 200**	**4**

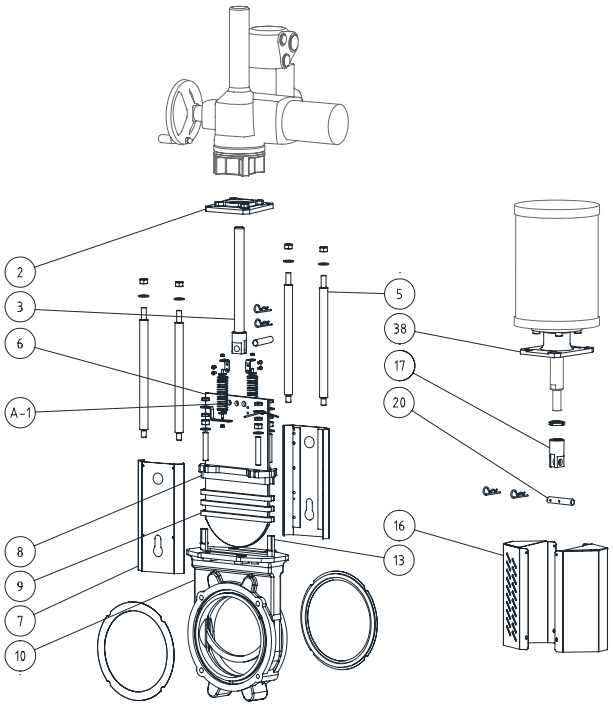
Design data WB14

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
50 - 600	**10**	**50 - 300**	**10**
		350 - 450	**6 or 10**
		500 - 600	**4 or 10**

Part list WB, WB11, WB12 and WB14

Pos.	Part	Available materials
A-1	Atex solution	See Table A-1 page 2
6	Gate WB, WB11, WB12, WB14	EN1.4301 (AISI 304), EN1.4404 (AISI316L), EN1.4462
8	Gland WB, WB11, WB12	ASTM A216 WCB, EN5.3105
	Gland WB14	ASTM A216 WCB, EN5.3105, EN1.4408, EN1.4470
9	Box packing WB, WB11, WB12, WB14	Twin Pack™
10	Valve body WB, WB11, WB12	JS1050 (GGG50), EN5.3105
	Valve body WB14	JS1050 (GGG50), EN5.3105, EN1.4408, EN1.4470
13	Seat WB, WB11, WB12, WB14	EPDM, Nitrile
9a	Scraper WB, WB11, WB12, WB14	UHMW-PE, PTFE

See page 2 for pos 2, 3, 5, 7, 16, 17, 20 and 38. Other according to original data sheet.



Pressure data RKO

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**

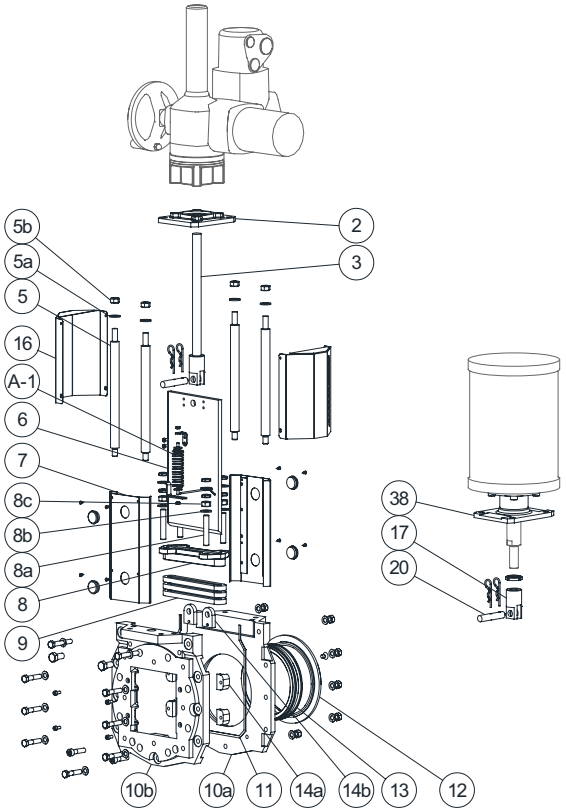
Pressure data JTV

Maximum working pressure body at 20°C		Maximum differential pressure in preferred direction at 20°C	
DN	bar	DN	bar
250 x 250	**6**	**250 x 250**	**6**

Part list RKO and JTV

Pos.	Part	Available materials
A-1	Atex solution	See Table A-1 page 2
6	Gate RKO, JTV	EN1.4462
8	Gland RKO, JTV	EN1.4408
9	Box packing RKO	Twin Pack™, Graphite, PTFE
	Box packing JTV	Twin Pack™
9a	Scraper	PTFE, UHMW-PE
10	Valve body RKO	EN1.4408, EN5.3105, JL1030 (GG20), ASTM 216 WCC
	Valve body JTV	EN1.4408
11	Body gasket RKO	Grafoil ≥ DN300 PTFE
	Body gasket JTV	PTFE
12	Retainer ring RKO	EN.1.4408, JS1050 (GGG50), JL1030 (GG20)
	Retainer ring JTV	EN.1.4408
13	Seat RKO	Metal/Grafoil, PTFE O-ring Nitrile/ FKM black (Viton)/EPDM
	Seat JTV	Polyuerthane
14a, b	Guide strip RKO, JTV	POM-C

See page 2 for pos 2, 3, 5, 7, 16, 17, 20 and 38. Other according to original data sheet.



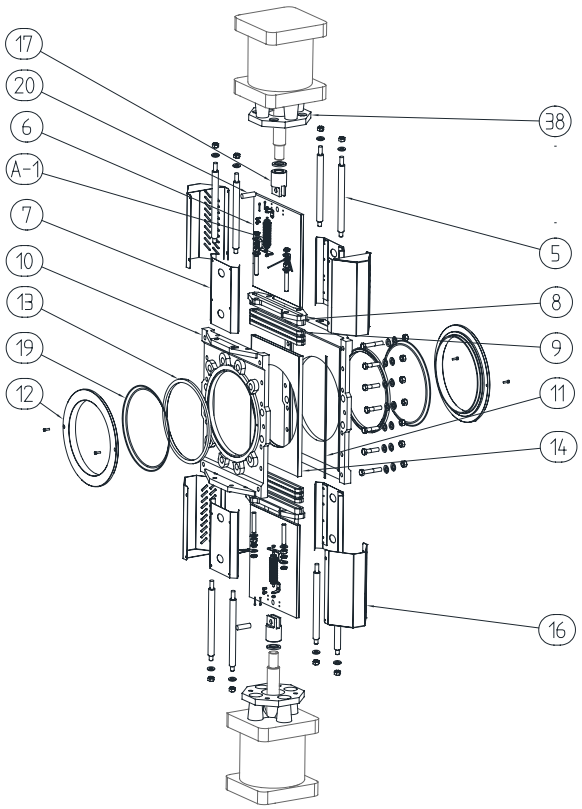
Pressure data D2G

Maximum working pressure body at 20°C		Maximum differential pressure at 20°C	
DN	bar	DN	bar
100 - 400	**10**	**100 - 400**	**6**
500 - 600	**6**	**500 - 600**	**4**

Part list D2G

Pos.	Part	Available materials
A-1	Atex solution	See Table A-1 page 2
6	Gate	EN1.4404 (AISI 316L), 1.4462
8	Gland	EN1.4408
9	Box packing	Twin Pack™
10	Valve body	EN1.4408
11	Body gasket	PTFE
12	Retainer ring	EN.1.4408
13	Seat	PTFE O-ring Nitrile/FKM black (Viton)/EPDM
14	Gliding support	POM-C

See page 2 for pos 2, 3, 5, 7, 16, 17, 20 and 38. Other according to original data sheet.



Further information is available on www.stafsjo.com

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