

# Knife gate valve MP



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

## Knife gate valve MP

Stafsjö's knife gate valve MP is a full bore and a bi-directional tight valve. It has a preferred pressure direction and a special shut-off design, which makes it suitable for several applications and media such as pulp, sludge, biomass, powder and other solid materials.

MP has a one piece body design in stainless steel with integrated purge ports as standard. These can be used to clean the inner valve body from residues, which might disturb the valve from a smooth opening/closing movement. Further to this the MP has a gate with a bevel edge that effectively cuts through the media, Stafsjö's retainer ring system and the special supports that gives a reliable sealing in both pressure directions. The gate support and seat also has a scraping function when the valve is operated which assures, together with the gland box system with three layers of our TwinPack™ and a box bottom scraper, that no media reaches surrounding environment.

The top works of aluminium beams and stainless steel tie rods, gives good corrosion resistance and excellent stability during operation. Several actuator types are available to choose from as standard as well as accessories. All remote operated valves are supplied with gate guards in stainless steel.

The MP 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 therefore CE marked when it is applicable.



### Reliable bi-directional sealing

The bevel edge gate effectively cuts through different media. Seat on one side of the bore and a gate support and casted gate support cams on the other side, gives a reliable bi-directional sealing.



### Low life cycle costs

The MP comes with few parts to maintain and the ones that exist can easily be exchanged to new ones. For example, Stafsjö's retainer ring that hold the seat in place is locked with screws just as the gate support is, making the parts extremely easy to change if needed.



### Modular and solid top works

A solid top works ensures gate alignment during operation. Low operation force is achieved with minimal friction, due to tight tolerances. The modular design makes it easy to supply or change to required actuator and accessory.

## Design data

Sizes	Flange drilling	Face-to-face dimension	ATEX design
DN 400 - DN 600	EN 1092 PN 10	Stafsjö manufacturing standard	ATEX 94/ 9/EC II cat 3 G/D for zone 2 and 22 on request

Other sizes and flange drillings on request

Leakage rate	Pressure tests
EN 12266-1:2003 Rate A: No visually detectable leakage is allowed for duration of the test MSS SP-81	Pressure tests are performed with water at 20° C according to EN 12266-1:2003. Pressure shell test: 1,5 times maximum allowable working pressure for open valve. Pressure seat tightness test: 1,1 times maximum allowable differential pressure for closed valve.

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

## Basic equipment

A. Valve Body			
Material	Code	Type	Maximum temperature °C
Stainless steel	(E)	EN 1.4408	400

B. Gate		
Material	Type	Optional surface treatment
Stainless steel	EN 1.4404/AISI 316L/SS 2348	Hard chromed surface
<i>Option</i>		
Duplex stainless steel	EN 1.4462/S32205/SS 2377	Hard chromed surface

C. Retainer ring	
Material	Type
Stainless steel	EN 1.4408

D. Seat		
Material	Code	Maximum temperature °C
PTFE with o-ring Nitrile	(P)	100
PTFE with o-ring Viton	(PV)	180
<i>Other seat materials on request.</i>		

E. Box Packing			
Material	Code	pH	Maximum temperature °C
TwinPack™	(TY)	2-13	260

Other box packing materials on request.

## Actuators

Manual	Code	Automatic	Code
Hand wheel <sup>1)</sup>	(HW)	Pneumatic cylinder	(EC)
Chain wheel <sup>2)</sup>	(CW)	Electrical motor	(EM)
Bevel gear <sup>2)</sup>	(BG)	Hydraulic cylinder <sup>2)</sup>	(MH)

<sup>1)</sup> For recommended size, see page 5 column E

<sup>2)</sup> For recommended size, see separate data sheet

Double-acting pneumatic cylinder			Electric motor (AUMA multi-turn)		
DN valve	Size EC	Maximum Force (kN)	DN valve	AUMA	Attachment
400-500	200	14.1	400-600	SA 10.2	F10/A
600	250	22.1			

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.

## Options and accessories

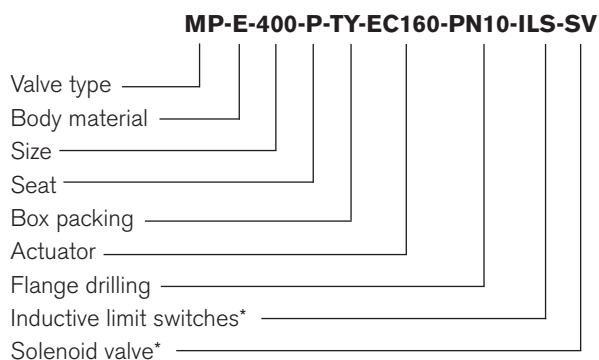
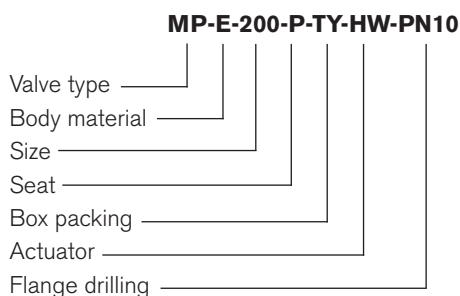
Knife gate valve		
Accessories	Model	Design
Mechanical limit switch (MLS)	Omron D4V	12-250 V AC/12-125 V DC, IP 65
Inductive limit switch (ILS)	ifm electronic IG0006	2-wire, 20-250 V AC/DC
	ifm electronic IG5401	3-wire, 10-36 V DC PNP
Stem extension (SES)	Short	Pipe Length < 1.5 m
	(SEL) Long	Pipe Length > 1.5 m
Positioner for control (POS)	PMV Palmstierna/Metso/ABB	
Purge ports	Standard on the MP valve	Pipe thread G1/2" acc. to ISO 228/1

Pneumatic cylinder		
Accessories	Model	Design
Solenoid valve (SV)	Parker Namur valves for EC 200 - EC 320	G1/2", Mono stable 5/2, Namur series VDI/VDE 3845, 24 V DC/110 V AC/220 V AC, IP 65
Magnetic limit switch (MagLS)	KITA KT-50R for EC 100 - EC 320	2-wire, 5-240 V AC/DC, IP 65
	KITA KT-50N for EC 100 - EC 320	3-wire, 10-30 V DC, IP 65

The accessories are described in detail in separate data sheets. For accessories 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, sealing profile 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).

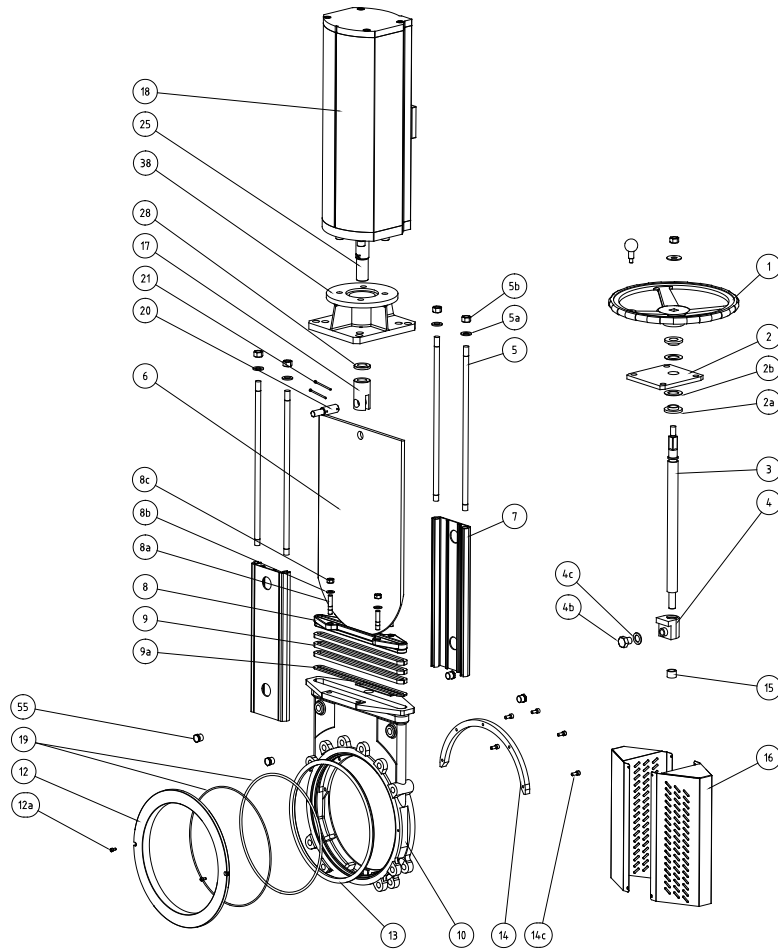


ILS: IFM IG0006 2-wire 20-250V AC/DC

SV: Parker Numur valve G1/2", 5/2, 220 V AC

\* All electronics must be specified in detail.

\*\* Alloy specified if it differ from standard.

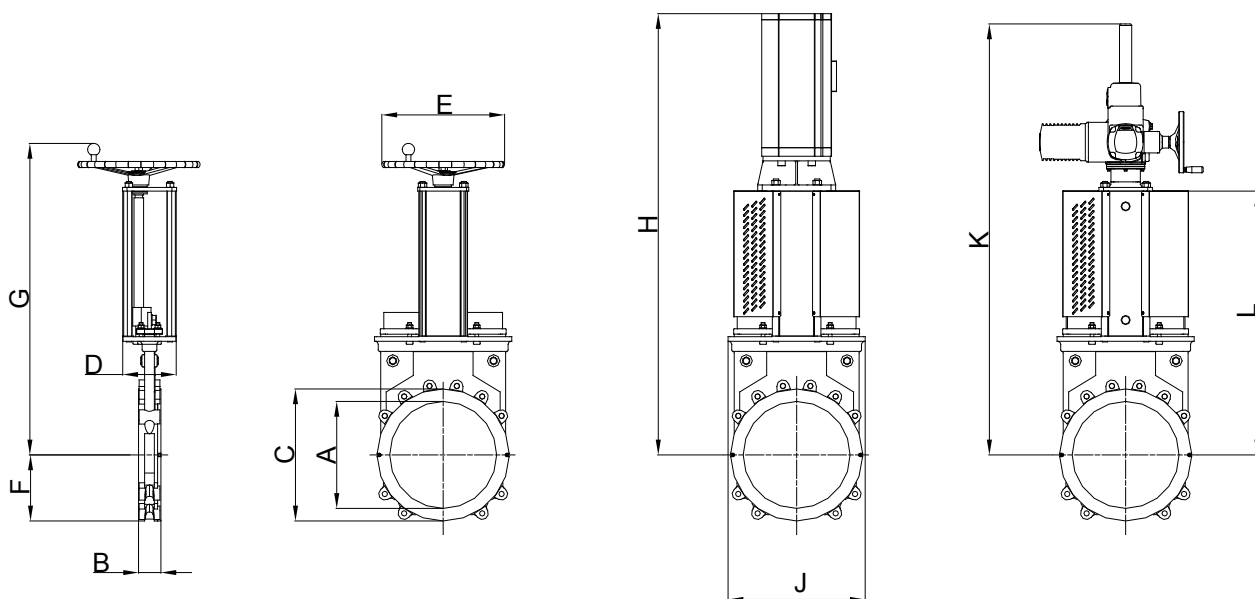


## Part List

Pos.	Part	Material (Name)
1	Hand wheel	Epoxy coated cast iron (EN-JL1030/GG20)
2	Yoke	Stainless steel (EN 1.4301/SS 2343)
2a	Bearing	Brass (CuZn39Pb3/SS5170)
2b	Slide washer	POM
2c	Bearing	Brass (CuZn39Pb3/SS 5170)
3	Stem	Stainless steel (EN 1.4305/SS 2346)
4	Stem nut	Brass (CW603N)
4b	Screw	Stainless steel (A2)
4c	Washer	Stainless steel (A2)
4d	Washer	Stainless steel (A2)
5	Tie rod	Stainless steel (EN 1.4301/SS 2333)
5a	Washer	Stainless steel (A2)
5b	Nut	Stainless steel (A2)
6	Gate	See equipment B
7	Beam	Aluminium (EN AW-6063-T6)
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	Box packing*	See equipment E

Pos.	Part	Material (Name)
9a	Box bottom support	UHMW-PE
10	Valve body	See Equipment A
12	Retainer ring	See equipment C
12a	Locking screw	Stainless steel (A2)
13	Seat*	See equipment D
14	Gate support	POM-C (other material on request)
14c	Screw	Stainless steel (A4)
15	Bushing	Oil-bronze
16	Gate guard, not for HW	Stainless steel (EN 1.4301/SS 2333)
17	Gate clevis	Stainless steel (EN 1.4305/SS 2346)
18	Cylinder	See data sheet
19	O-ring*	See equipment D
20	Clevis pin	Stainless steel (EN 1.4305/SS 2346)
21	Split pin	Stainless steel (EN 1.4436/SS 2343)
25	Piston rod	Stainless steel (EN 1.4305/SS 2346)
28	Locking nut	Stainless steel (EN 1.4305/SS 2346)
38	Valve adapter	Stainless steel (EN 1.4308)
55	Plug	Stainless steel (A4)

\* Recommended spare parts



## Main dimensions

Dimensions (mm)											
DN	A	B	C	D	E	F	G	H	J	K	L
400	400	83	481	175	400	216	1020	1531	449	1411	864
500	500	101	586	250	520	300	1297	1960	610	1877	1173
600	600	106	685	260	635	359	1518	2272	735	2201	1398

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

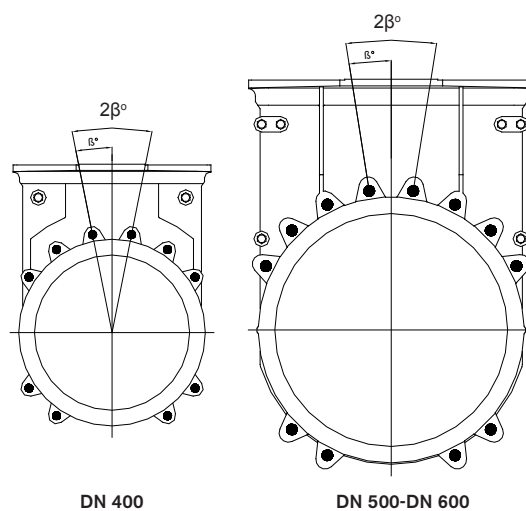
## Flange drilling

EN 1092 PN 10			
DN	400	500	600
Outside flange diameter (mm)	565	670	780
Bolt circle diameter (mm)	515	620	725
Number of throughgoing bolts (◦)	6	8	8
Number of tapped holes (•)	10	12	12
Bolt size	M24	M24	M27
$\beta^\circ$	11,25	9	9
Screw lengths <sup>1)</sup>	20	26	27

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

◦ Throughgoing holes

• Tapped holes



DN 400

DN 500-DN 600

Further information is available on [www.stafsjo.com](http://www.stafsjo.com)



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