

KNIFE GATE VALVES SERIES 300

Czech Industrial Valve Manufacturer

Knife gate valves Series 300 are the most common of the so-called through conduit valves. Series ABO 300 is a wafer type bidirectional valve which is ideal for installations handling large solids, very viscous fluids, sludge and highly concentrated slurry (mining, paper industry, cement industry, etc.). The main characteristic of the blade is that it passes through the entire length of the body. A round outlet is machined in the middle of each blade. This outlet, while falling with identical outlet on the valve body, allows for maximum direct flow of the medium. Thus, while being in open position, the valve essentially becomes part of the piping (leading to dead zones elimination).

ABO knife gate valves series 300 are ideal for installations handling liquids which contain suspended solid and waste water. They are used in following applications:

- mining industry
- chemical industry
- slurry handling
- waste water treatment
- pulp and paper industry

Basic properties

- bidirectional design with two-piece body with rising stem
- knife goes through the sealing area
- circular, total passage: enables a high flow capacity with low load loss
- through the gate - in the open position there are not places that restrict the flow
- sided seal - seal and support ring on both sides
- can be combined with various kinds of actuators (handwheel, electric actuator, pneumatic actuator, etc)



Type designation

3 1 0 B 100 5

Actuation

- 1 - handlever
- 2 - handwheel
- 3 - gearbox
- 4 - pneumatic actuator
- 5 - electric actuator

Nominal size (DN)

Body type

B - WAFER

Seat material

- 0 - EPDM
- 1 - NBR
- 4 - Viton

Body & knife material

- 1 - Body: grey cast iron 0.6025 (GG25)
Knife: stainless steel 1.4306 (AISI 304 L)
- 2 - Body: stainless steel 1.4408 (CF8M)
Knife: stainless steel 1.4404 (AISI 316 L)

Series name

Series 300

Standards

Leak test

EN 12266-1, Class A*)
ISO 5208, Class A*)
API 598, Tab. 5
*) for soft seated version

Connection between flanges

EN 1092-1

Marking

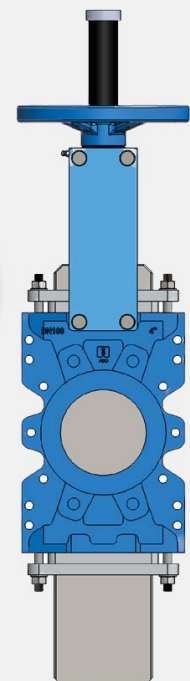
EN 19

Body type

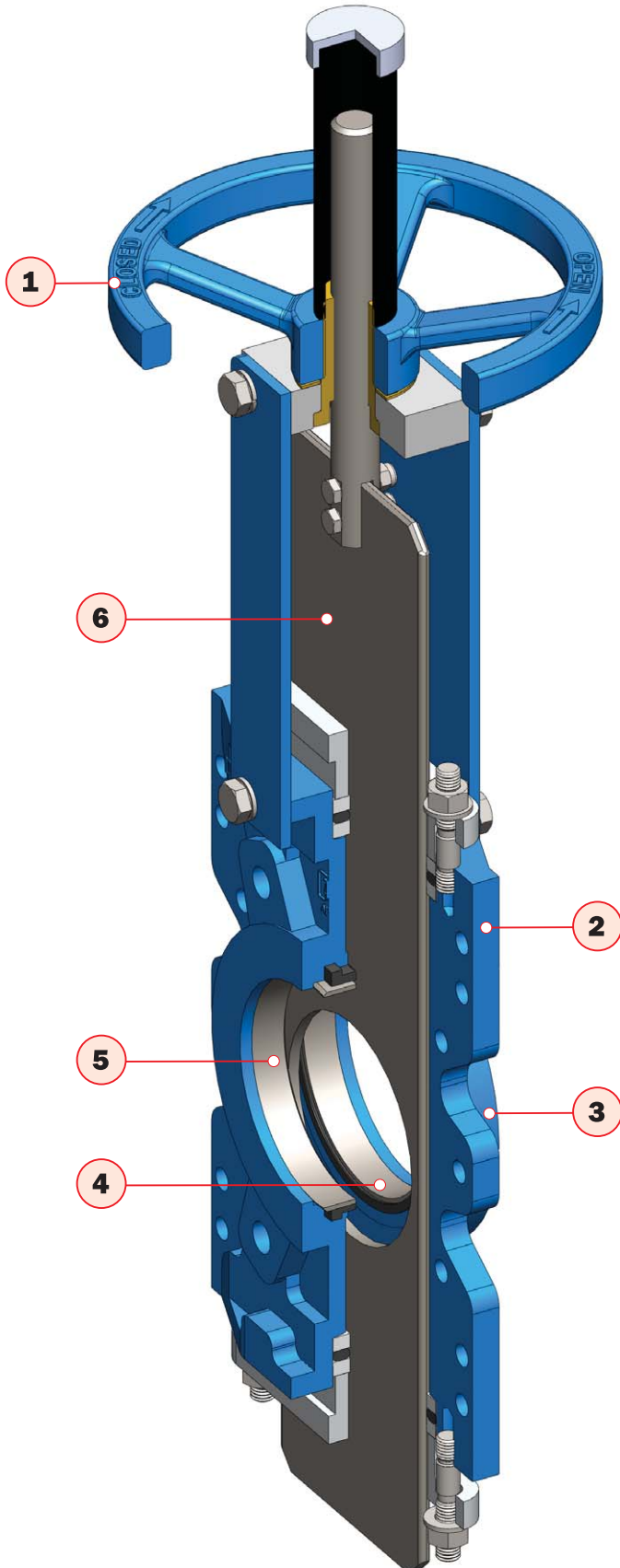
B
WAFER
DESIGN

Working conditions

Working pressure max.	Temperature rating
DN50-DN250: 10 bar	-25 °C do +125 °C (EPDM)
DN300-DN400: 6 bar	-10 °C do +90 °C (NBR)
DN500-DN600: 4 bar	-25 °C do +150 °C (Viton)



DESIGN ADVANTAGES - SERIES 300



1. Interchangeable drives

- manual actuation is conducted through a handwheel. Also can be combined with a wide range of pneumatic and electric actuators.

2. Robust body casting

- a two-piece body design allows for an easy replacement of internal components.

3. Connection between flanges

- as standard, connection between flanges is designed as per EN 1092. However, the body design allows for variable connection options as per other norms.

4. Profiled body shape

- a specially designed internal body shape prevents particles from entering into the sealing area and thus potentially decreasing the functionality of the valve.

5. Bidirectional sealing

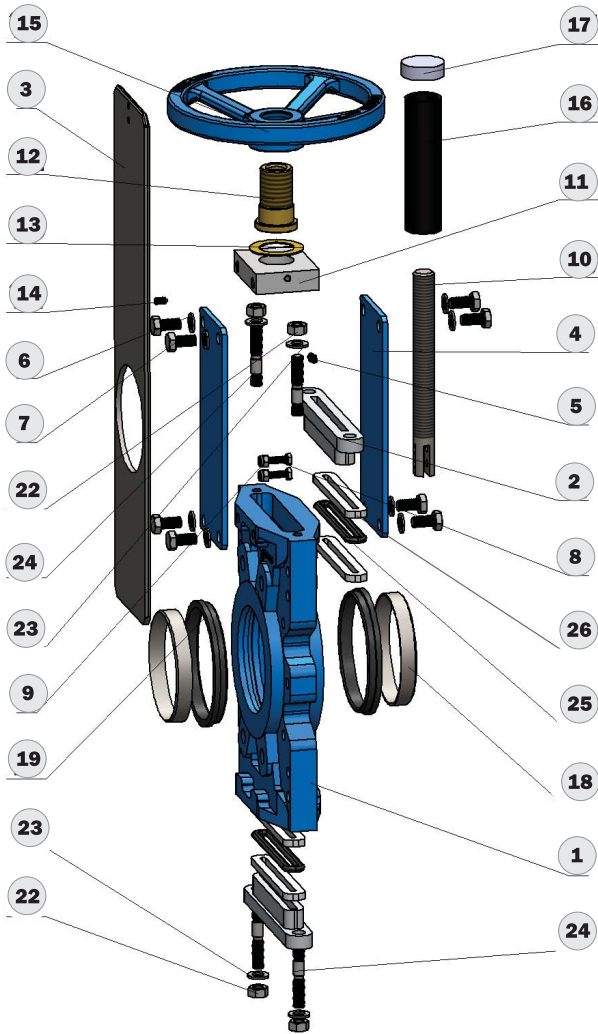
- state of the art machining, as well as precise casting technology of individual components, results in a perfect shut-off and guarantees class A tightness.

6. Excellent Bi-directional tightness

- in order to avoid leakage while moving the knife, packing has been installed in the upper as well as the lower part of the body. The packing system is further reinforced by metal rings and counter-flanges. "Metal-Metal" design is not bi-directionally tight, nor "A" class tightness.

MATERIAL PERFORMANCE / TECHNICAL INFORMATION

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Pos.	Name	Material 1	Material 2
1	Body	Cast iron 0.6025 (GG25)	Stainless steel 1.4408 (CF8M)
2	Packing gland	Aluminium 3.2581	Stainless steel 1.4408 (CF8M)
3	Knife	Stainless steel 1.4306 (AISI 304 L)	Stainless steel 1.4404 (AISI 316 L)
4	Support plate	Steel 1.0036	Steel 1.0036
5	Greaser	Steel 1.0553 + Zinc	Steel 1.0553 + Zinc
6,13 23	Washer	Stainless steel A2 (poz. 13 Mosaz 2.0402)	Stainless steel A2 (poz. 13 Mosaz 2.0402)
7,8	Bolt	Stainless steel A2	Stainless steel A2
9,22	Nut	Stainless steel A2	Stainless steel A2
10	Stem	Stainless steel EN 1.4305 (AISI 303)	Stainless steel EN 1.4305 (AISI 303)
11	Support bridge	Steel 1.0036	Steel 1.0036
12	Stem drive nut	Brass 2.0402	Brass 2.0402
14	Stop screw	Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4301 (AISI 304)
15	Hand-wheel	Cast iron 0.6025 (GG25)	Cast iron 0.6025 (GG25)
16	Stem cover	Steel 1.0036	Steel 1.0036
17	Cover	Plastic	Plastic
18	Sealing ring	Stainless steel 1.4404 (AISI 316 L)	Stainless steel 1.4404 (AISI 316 L)
19	Seat	EPDM	EPDM
20	Deflecting cone	Stainless steel 1.4401 (AISI 316)	Stainless steel 1.4401 (AISI 316)
21	Reinforced ring	Stainless steel 1.4401 (AISI 316)	Stainless steel 1.4401 (AISI 316)
21	Nut	Stainless steel A2	Stainless steel A2
24	Pivots	Stainless steel A2	Stainless steel A2
25	Stuffing O-ring	EPDM	EPDM
26	Stuffing box	Synthetic yarn + PTFE	Synthetic yarn + PTFE

Installation between flanges DN50 - DN600, DESIGN B

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
PN6	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PN10														
PN16	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Class 150	•	•	•	•	•	•	•	•	•	•	•	•	•	•

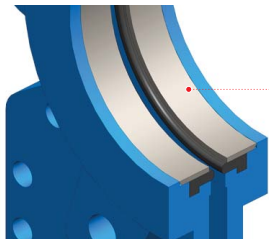
■	standard
•	on request
×	impossible

Operating torques (Nm) vs. working pressure (bar)

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
p_{max} 10 bar	10	12	15	20	25	30	35	45	60	70	90	100	110	170

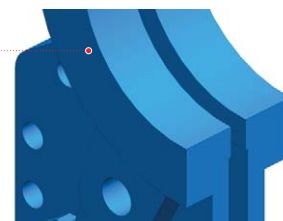
Operating torques above are valid for electric actuator. Operating torques are mentioned without safety reserve..

SEAT OPTIONS



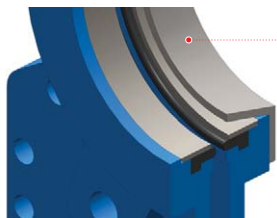
1. Soft seat

Standard soft seat design (EPDM, NBR, PTFE) cutting, suitable for water service, and for liquids with a maximum solid concentration of 5 % (Class A tightness rate).



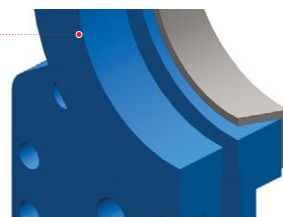
2. Metal seat

Metal seat design (knife closes against the body directly) with maintenance-free seat is typically suitable for applications handling dense paper pulp. Not suitable for water and liquids applications. In fully open position, the valve is a perfect continuation of the pipe as it eliminates dead spaces. Bi-directional design is not possible in this variant.



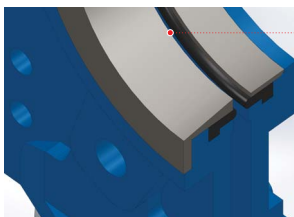
3. Soft seat with deflecting cone 15°

Soft seat design with a deflecting cone of 15° as accessory is particularly suitable for solid or powder media with larger solid particles whereby damage of the body/internals can occur. This solution is frequently used in bulk industry for services with abrasive fluids.



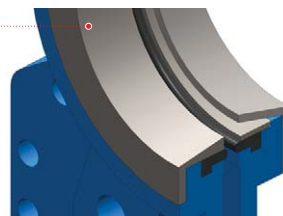
4. Metal seat with deflecting cone 15°

Metal/metal seat design with a deflecting cone of 15° as accessory is particularly suitable for solid or powder media with larger solid particles whereby damage of the body/internals can occur.



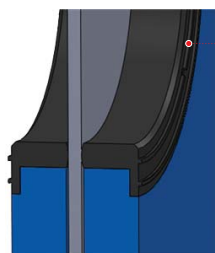
5. Soft seated with scraper 8°

Soft seat bidirectional design with reinforced sealing ring of 8° in casted material securing a higher degree of protection for the seating element. This solution is used for medias with high velocity or higher pressure, and in situations whereby a reversed flow of the media can occur. This solution is used for pulp with solids or staples in dumping outlet, dump chest drains and heavy rejects.



6. Soft seated with deflecting cone 15° and scraper 8°

Soft seat design with reinforced sealing ring of 8° and a deflecting cone of 15° as accessory. This solution gives more protection to the internals parts thanks to the cone (restriction of bore), and is suitable in severe abrasive service such as mining service, whereby water with slurries or sand is present.



7. Soft seated rubber sleeve

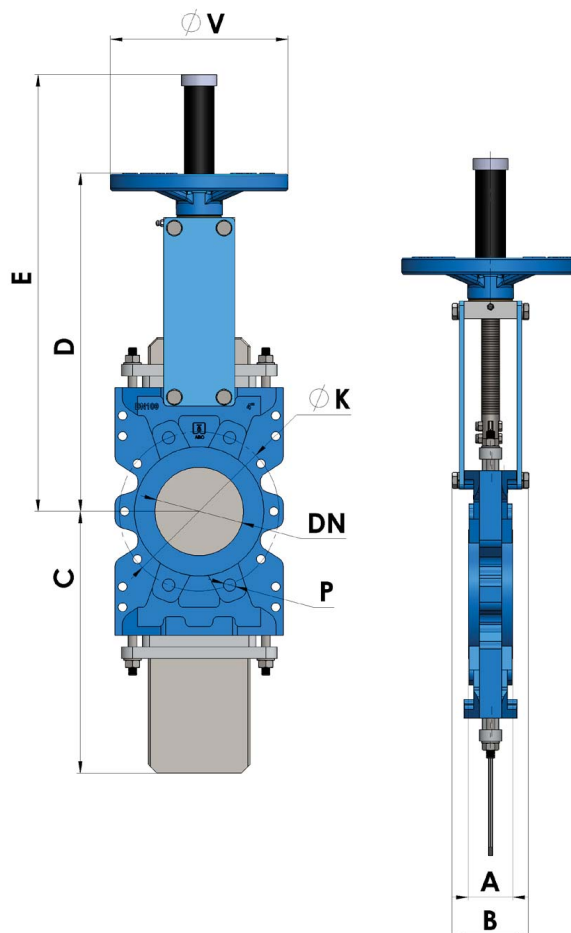
Special seat design with 2 rubber sleeves for abrasive service. This solution is particularly suitable for solid or powder media with larger solid particles whereby damage of the body/internals can occur. Frequently used in mining industry for medias with abrasive fluids.

BASIC DIMENSIONS - SERIES 300

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DN	A	B	C	D	E	øV
50	40	90	220	284	425	200
65	40	90	260	308	450	200
80	50	90	303	334	480	200
100	50	90	360	374	520	200
125	50	100	428	413	600	250
150	60	100	493	465	650	250
200	60	120	632	528	820	300
250	70	120	767	682	1 020	300
300	70	120	897	782	1 120	300
350	96	192	1 042	898	1 380	400
400	100	192	1 167	1 003	1 490	400
450	106	192	1 297	1 093	1 580	500
500	110	192	1 455	1 207	1 690	500
600	110	290	1 705	1 410	2 030	500

DN	øK		P		
	PN10	ANSI 150	Holes No.	PN10	ANSI 150
50	120	120,6	4	M16	W 5/8"
65	145	139,7	4	M16	W 5/8"
80	160	152,4	8	M16	W 5/8"
100	180	190,5	8	M16	W 5/8"
125	210	215,9	8	M16	W 3/4"
150	240	241,3	8	M20	W 3/4"
200	295	298,4	8	M20	W 3/4"
250	350	361,9	12	M20	W 7/8"
300	400	431,8	12	M20	W 7/8"
350	460	476,2	16	M20	W 1"
400	515	539,7	16	M24	W 1"
450	565	577,8	20	M24	W 1 1/8"
500	620	635,0	20	M24	W 1 1/8"
600	725	719,3	20	M27	W 1 1/8"



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