

Model EP

POLYURETHANE-LINED KNIFE GATE VALVE

The EP model knife gate valve is a polyurethane-lined bidirectional lug type valve designed for general industrial service applications with abrasive fluids. The design of the body and seat also assures non-clogging shut off on suspended solids in industries such as:

- Mining
- Pulp and Paper
- Power plants
- Chemical plants
- Food and Beverage
- Etc.

Sizes

DN 50 to DN 600
Larger diameters on request

Working pressure and temperatures

DN 50 to DN 600: 10 bar

GJS 400: -10°C / 80°C

Standard flange drilling

EN-1092 PN10
ASME B16.5 (class 150)
AS 2129 Table D & E
Other flange drillings available on request

Directives

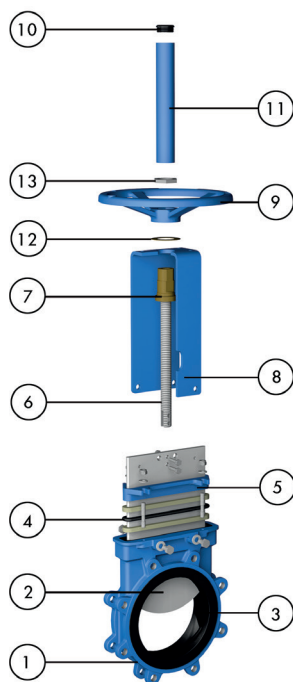
For EU Directives and other Certificates please see the document: Directives & Certificates Compliance - Knife Gate Valves –Catalogues and Datasheets

Testing

All valves are tested prior to shipping in accordance with the standard EN-12266-1



STANDARD PARTS LIST



Part	Description
1 Body	Ductile iron
2 Gate	AISI 304
3 Seat	Polyurethane
4 Packing	PTFE Impreg. Synth. Fibre (ST) + EPDM O-ring
5 Gland follower	A216 WCB
6 Stem	Stainless Steel
7 Stem nut	Brass
8 Yoke	Epoxy-coated Carbon Steel
9 Handwheel	EN-GJS400
10 Cap	Plastic
11 Stem protector	Epoxy-coated Carbon Steel
12 Friction washer	Brass
13 Nut	Zinc Plated Carbon Steel

DESIGN FEATURES

Body

Lug style nodular iron monoblock, polyurethane-lined, with a full-bore design

Gate

Stainless steel gate, as standard. Gate is polished on both sides for a greater seal between the gate with both packing and seat. Gate is fully guided in the body allowing for bi-directional service

Seat (polyurethane)

The urethane lined is molded and fully integrated into the body itself. It is chemically bonded, providing excellent adhesion

Packing

Standard PTFE impregnated synthetic fibre (ST) with EPDM O-ring, with an easy access packing gland ensuring a tight seal. Long-life braided packing available in a wide range of materials

Stem

The standard stainless steel stem offers a long corrosion-resistant life. For rising stem handwheel actuators only, a stem protector is provided for additional protection against dust while the valve is in the open position

Yoke or actuator support

Made of Epoxy coated carbon steel (stainless steel available on request). Compact design makes it extremely robust even under the most severe conditions

Epoxy coating

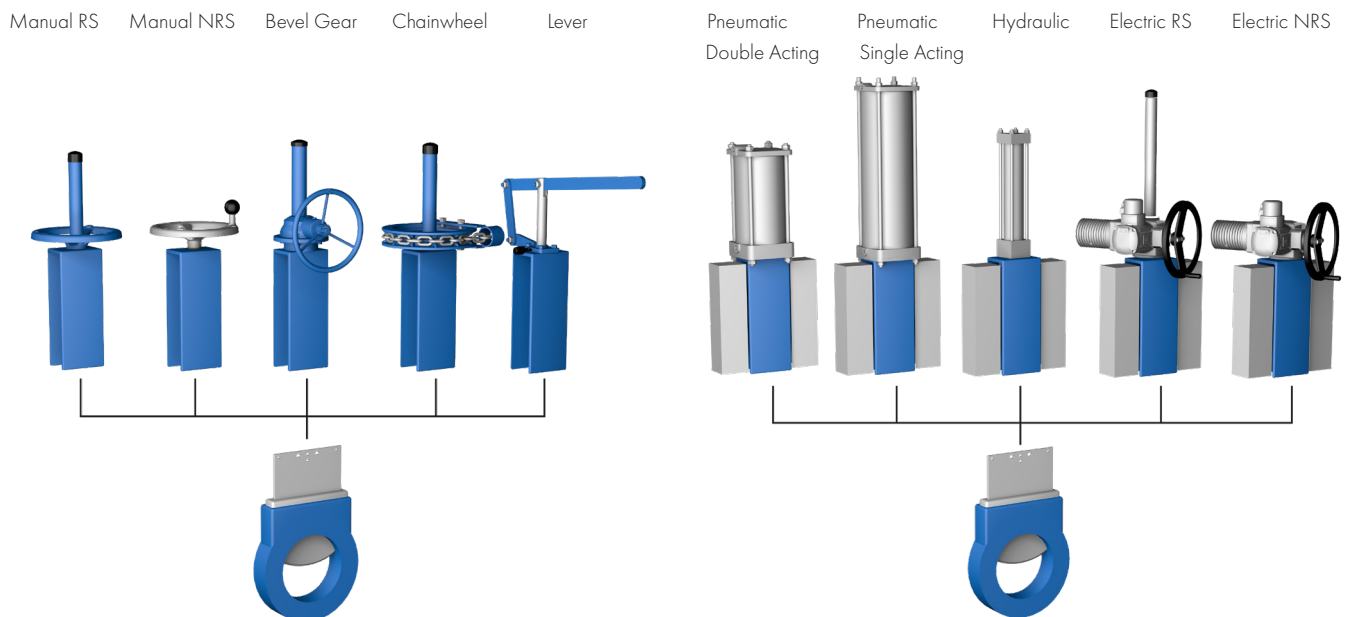
The Epoxy coating on all ORBINOX cast iron and carbon steel valve bodies and components is applied by means of an electrostatic process, making the valves corrosion-resistant with a high quality finished surface. The ORBINOX standard colour is RAL-5015 blue

Gate safety protection

ORBINOX automated valves are provided with gate guards in accordance with EU Safety Standards. The design feature prevents any objects from being caught accidentally while the gate is moving

Actuators

ORBINOX offers a complete range of actuator solutions, including manual, pneumatic, electric and hydraulic actuators



OTHER OPTIONS

Surface treatments

Valve components can be protected or coated for a longer life expectancy, depending on the application of the valves and the valve service conditions. At ORBINOX we can offer alternative treatments and coatings for the different valve components to improve their properties against abrasion (Stellite, hard-chroming, carbides, ...), against corrosion and against adherence

Locking device

The valve can be designed with a locking pin system to block the gate in emergency situations or for maintenance operations

Mechanical stops

Mechanical stops can be added to limit stem travel at a certain stroke position

Actuator manual override (Fig. 1)

Pneumatic and electric actuators can be equipped with manual override handwheels to manually operate the actuators in emergency situations or for maintenance operations

Stem extensions and floor stand (Fig. 2)

Extensions for valve operation when valves are installed in positions below operation level are available, including wall brackets and different types of pedestals for actuators

Accessories for pneumatic valve automation

Limit and proximity switches, solenoid valves, positioners, flow regulations, air filter units, silencers, junction boxes



Fig.1



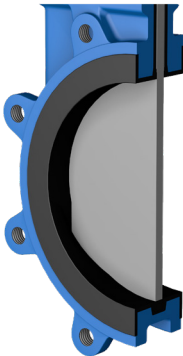
Fig.2

SEAT/SEAL TYPES

PACKING TYPES

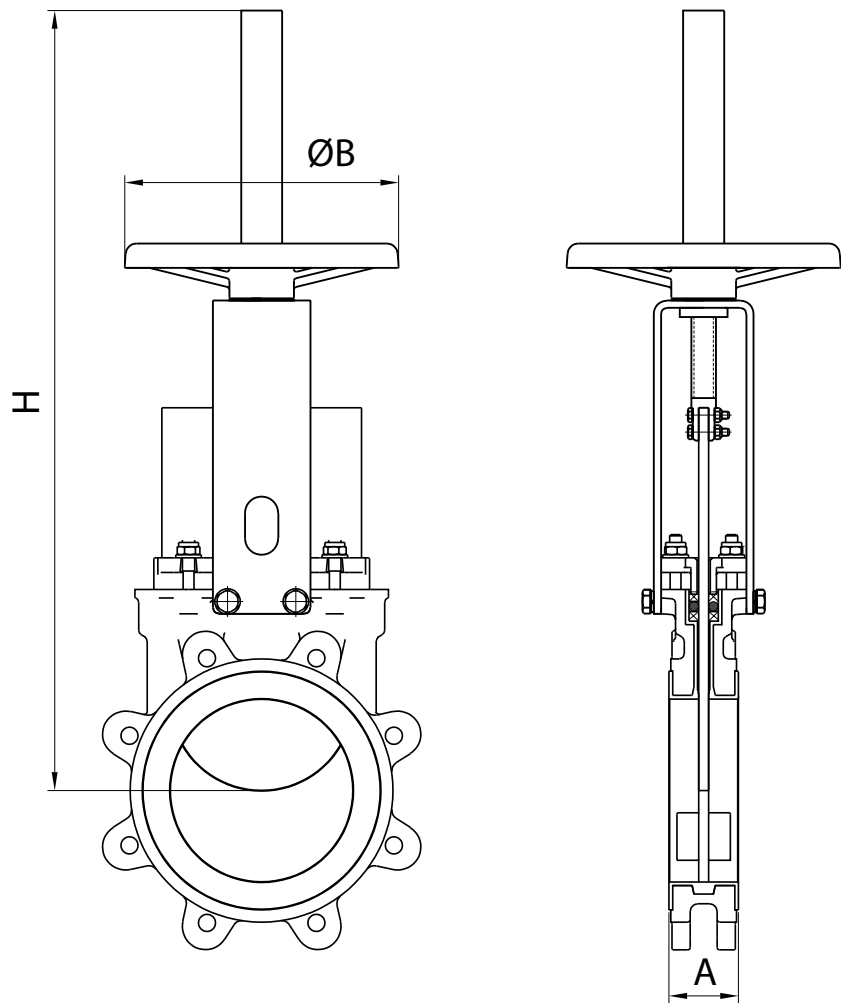
Material	Max.T (°C)	Applications	Material	Max.T (°C)	pH
Polyurethane	120	General	PTFE impregn. synth. fibre (ST)	250	2-13

SEAT CONFIGURATIONS/DESIGNS

Type	Features	
Polyurethane lined	The urethane lined is molded and fully integrated into the body itself. It is chemically bonded, providing excellent adhesion.	

HANDWHEEL RISING STEM

Standard manual actuator available from DN 50 to DN 600

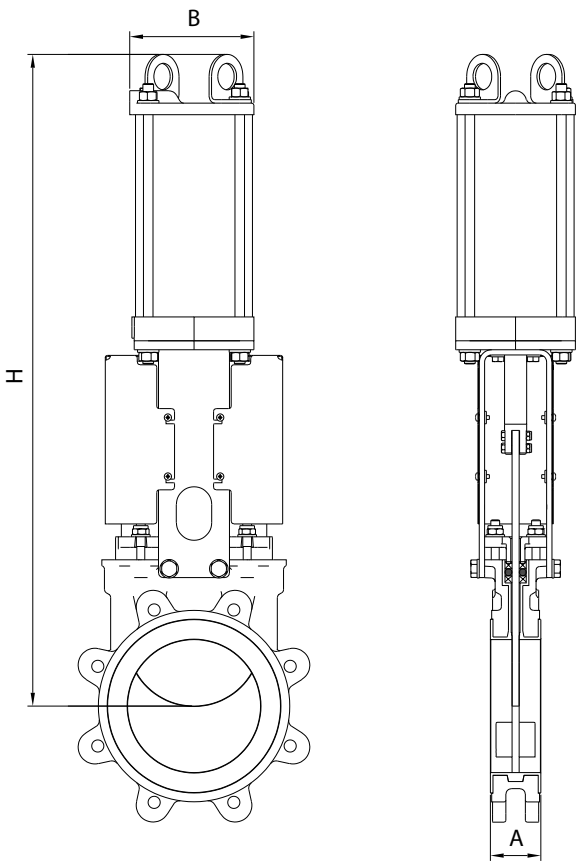


DN	A	ØB	H	Weight (Kg)
50	48	225	430	9
65	48	225	450	10
80	51	225	475	11
100	51	225	520	12,5
125	57	225	600	18
150	57	225	652	20
200	70	310	822	32
250	70	310	1022	47
300	76	410	1122	65
350	76	410	1323	95
400	89	410	1427	122
450	89	550	1594	160
500	114	550	1707	202
600	114	550	2022	290

PNEUMATIC CYLINDER

With a double-acting pneumatic cylinder as standard, it is available in sizes from DN 50 to DN 600. Single-acting pneumatic cylinders, manual overrides, fail-safe systems as well as a wide variety of pneumatic accessories for valve automation available. Actuator sized for 6 bar air supply, see ORBINOX Pneumatic Solutions Catalogue for more information

For valves installed in a horizontal position, actuator supports to plant structure is recommended



DN	A	B	H	Connect.	Weight (Kg)
50	48	115	430	1/4 "G	11
65	48	115	454	1/4 "G	12
80	51	115	497	1/4 "G	13
100	51	115	558	1/4 "G	15
125	57	140	632	1/4 "G	23
150	57	140	708	1/4 "G	27
200	70	175	872	1/4 "G	46
250	70	220	1042	3/8" G	70
300	76	220	1192	3/8" G	89
350	76	277	1387	3/8" G	135
400	89	277	1541	3/8" G	162
450	89	382	1710	1/2" G	212
500	114	382	1873	1/2" G	290
600	114	382	2178	1/2" G	375

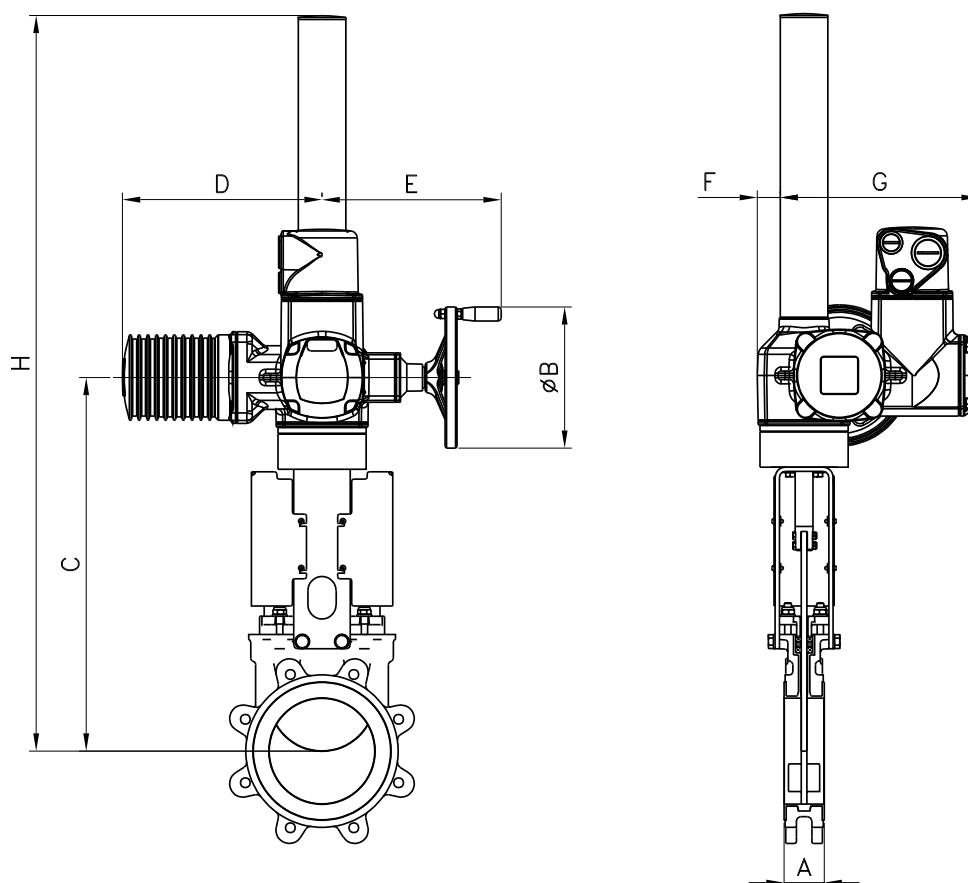
Note: pneumatic cylinder sizing for sizes DN 300mm and above are based on EX pressure ratings

ELECTRIC ACTUATOR

Designed with a yoke flange for the actuator according to ISO 5210 / DIN 3338 as standard, it is available from DN 50 to DN 600, both for rising stem and non-rising stem configurations and with manual overrides.

Wide range of electric actuator brands available


For valves installed in a horizontal position, actuator supports to plant structure is recommended



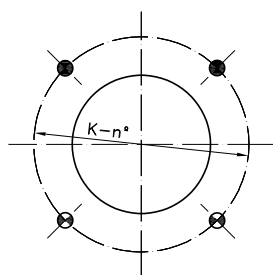
DN	A	C	ØB	H	D	E	F	G	Torque (Nm)
50	48	377	160	547	265	249	62	238	10
65	48	404	160	574	265	249	62	238	10
80	51	429	160	599	265	249	62	238	10
100	51	470	160	640	265	249	62	238	10
125	57	504	160	674	265	249	62	238	15
150	57	555	160	1055	265	249	62	238	20
200	70	669	160	1169	265	249	62	238	30
250	70	769	160	1269	265	249	62	238	45
300	76	869	160	1369	265	249	62	238	40
350	76	940	200	1440	283	254	65	248	70
400	89	1044	200	1544	283	254	65	248	90
450	89	1172	200	1672	283	254	65	248	110
500	114	1280	200	1780	283	254	65	248	95
600	114	1565	315	2065	389	336	91	286	140

Note: torque values for sizes DN 300mm and above are calculated based on EX pressure ratings. For full differential pressure, check with ORBINOX representative

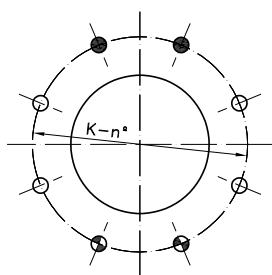
FLANGE AND BOLTING DETAILS EN-1092 PN10

DN	K	n°	M	T	
50	125	4	M-16	11	2 - 2 - 0
65*	145	4	M-16	11	2 - 2 - 0
80	160	8	M-16	11	2 - 2 - 4
100	180	8	M-16	9	2 - 6 - 0
125	210	8	M-16	11	2 - 6 - 0
150	240	8	M-20	13	2 - 6 - 0
200	295	8	M-20	12	2 - 6 - 0
250	350	12	M-20	12	4 - 8 - 0
300	400	12	M-20	12	4 - 8 - 0
350	460	16	M-20	15	6 - 10 - 0
400	515	16	M-24	15	6 - 10 - 0
450	565	20	M-24	15	8 - 12 - 0
500	620	20	M-24	22	8 - 12 - 0
600	725	20	M-27	22	8 - 12 - 0

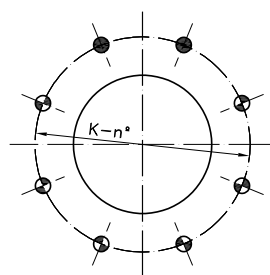
* Flange drilling of DN 65 PN10/16 according to EN-1092 allow 4 or 8 drills. ORBINOX designs of DN 65 PN10/16 have 4 drills



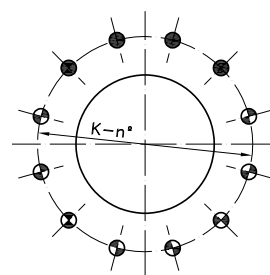
DN 50-65



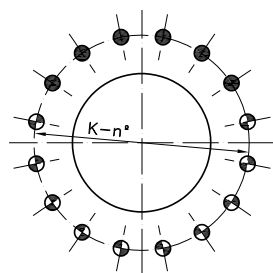
DN 80



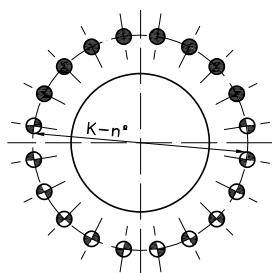
DN 100-200



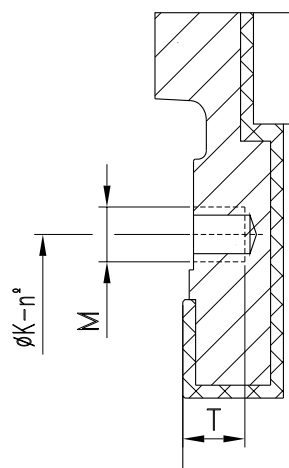
DN 250-300



DN 350-400



DN 450-600



BLIND TAPPED HOLES



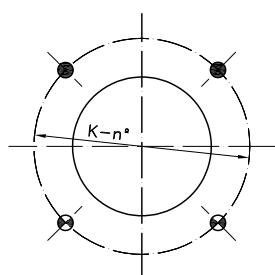
TAPPED THROUGH



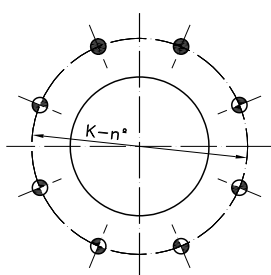
THROUGHGOING BOLTS

FLANGE AND BOLTING DETAILS ASME B16.5, CLASS 150

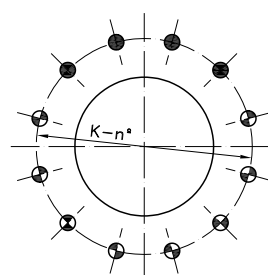
DN	K	n°	M	T	
2"	4 3/4"	4	5/8" - 11 UNC	15/32"	2 - 2
2,5"	5 1/2"	4	5/8" - 11 UNC	15/32"	2 - 2
3"	6"	4	5/8" - 11 UNC	15/32"	2 - 2
4"	7 1/2"	8	5/8" - 11 UNC	11/32"	2 - 6
5"	8 1/2"	8	3/4" - 10 UNC	15/32"	2 - 6
6"	9 1/2"	8	3/4" - 10 UNC	3/8"	2 - 6
8"	11 3/4"	8	3/4" - 10 UNC	15/32"	2 - 6
10"	14 1/4"	12	7/8" - 9 UNC	15/32"	4 - 8
12"	17"	12	7/8" - 9 UNC	15/32"	4 - 8
14"	18 3/4"	12	1" - 8 UNC	19/32"	4 - 8
16"	21 1/4"	16	1" - 8 UNC	19/32"	6 - 10
18"	22 3/4"	16	1 1/8" - 7 UNC	19/32"	6 - 10
20"	25"	20	1 1/8" - 7 UNC	7/8"	8 - 12
24"	29 1/2"	20	1 1/4" - 7 UNC	7/8"	8 - 12



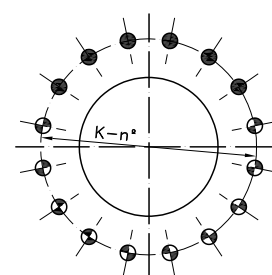
DN 2" - 3"



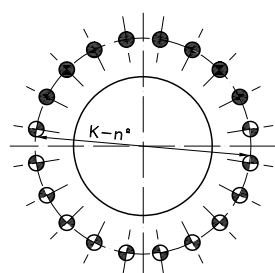
DN 4" - 8"



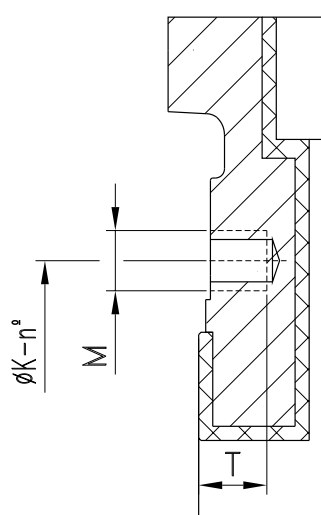
DN 10" - 14"





DN 16" - 18"



DN 20" - 24"



-  BLIND TAPPED HOLES
-  TAPPED THROUGH