

# Model Ser.75 (EP)

## POLYURETHANE-LINED KNIFE GATE VALVE

The Series 56 (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)

2in/50mm to 24in/600mm  
Larger diameters on request

### Pressure and temperature ratings

2in/50mm to 24in/600mm: 150 psi/10 bar

GJS 400: 14°F (-10°C) / 176°F (80°C)

### Standard flange drilling

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

### Directives

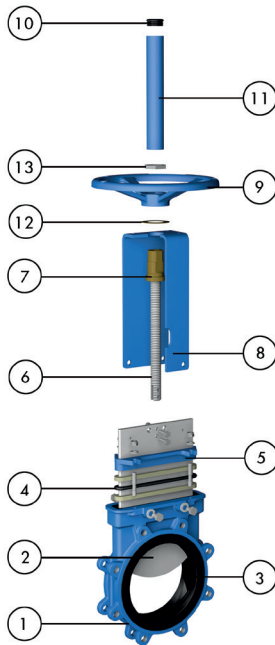
For EU Directives and other Certificates please see the document: Directives & Certificates Compliance - Knife Gate Valves - Catalogues and Datasheets)

### 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-coated, 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

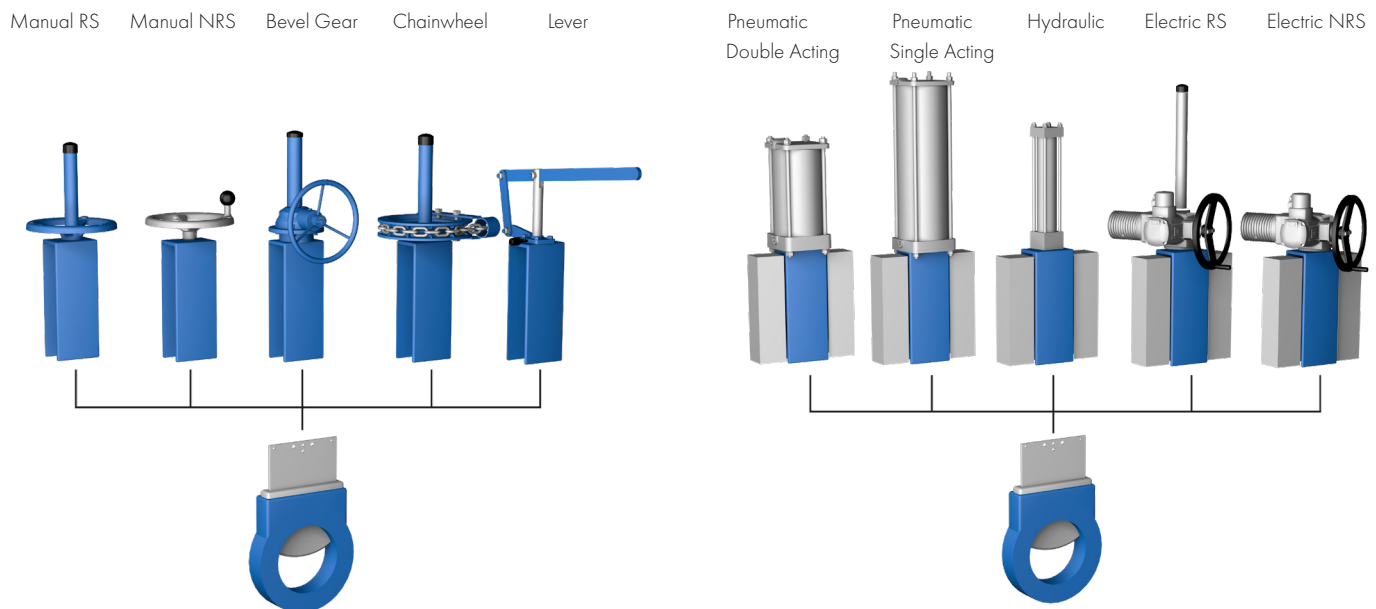
The epoxy coating on all ORBINOX cast iron and carbon steel valve bodies and components is applied by means of an electrostatic process, making the valves corrosion-resistant with a high quality finished surface. The ORBINOX standard colour is RAL-5015 blue

### 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. \* IN EUROPE ONLY

### 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

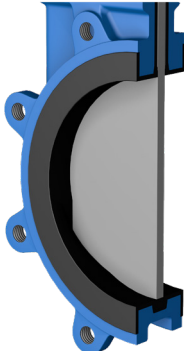
## SEAT/SEAL TYPES

Material	Max.T (°F)	Max.T (°C)	Applications
Polyurethane	194	90	General

## PACKING TYPES

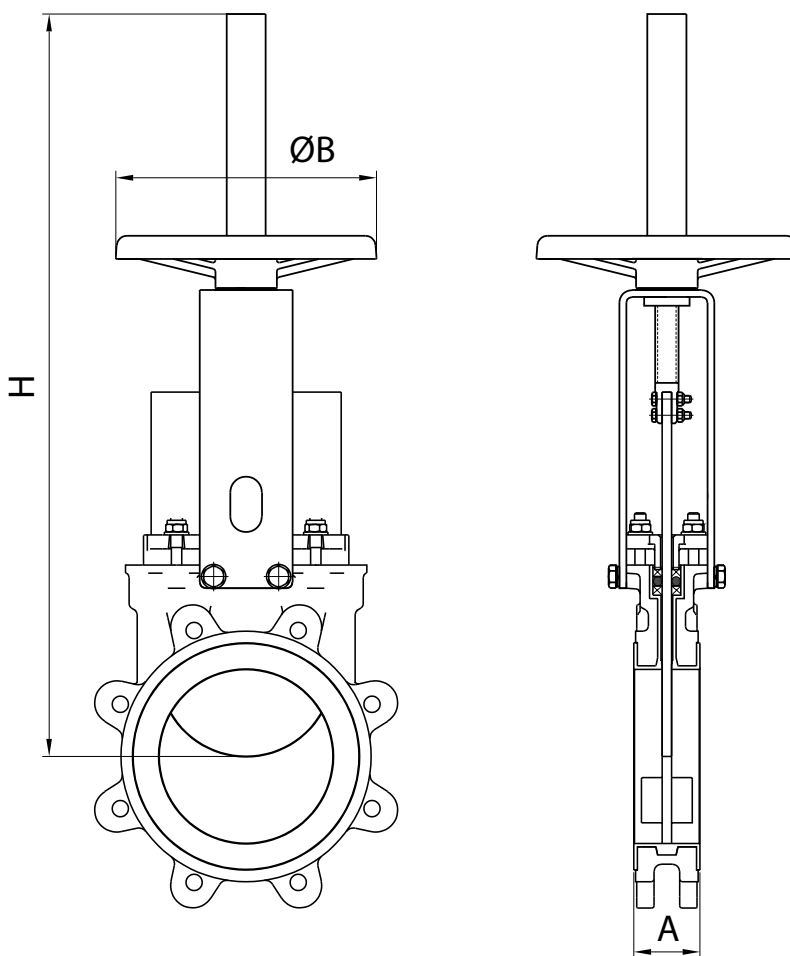
Material	Max.T (°F)	Max.T (°C)	pH
PTFE impregn. synth. fibre (ST)	482	250	2-13

## SEAT CONFIGURATIONS/DESIGNS

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

## HANDWHEEL RISING STEM

Standard manual actuator available from 2in/50mm to 24in/600mm

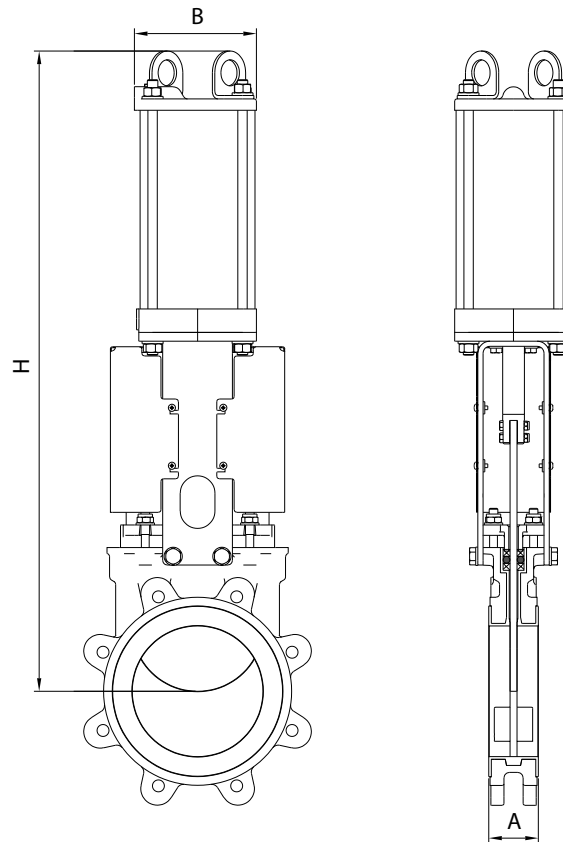


DN (in/mm)	A (in/mm)	ØB (in/mm)	H (in/mm)	Weight (lbs./kg.)
2/50	1,89/48	8,86/225	16,93/430	20/9
2,5/65	1,89/48	8,86/225	17,72/450	22/10
3/80	2,01/51	8,86/225	18,70/475	24/11
4/100	2,01/51	8,86/225	20,47/520	28/12,5
5/125	2,24/57	8,86/225	23,62/600	40/18
6/150	2,24/57	8,86/225	25,67/652	45/20
8/200	2,76/70	12,20/310	32,36/822	71/32
10/250	2,76/70	12,20/310	40,23/1022	104/47
12/300	2,99/76	16,14/410	44,17/1122	143/65
14/350	2,99/76	16,14/410	52,08/1323	210/95
16/400	3,50/89	16,14/410	56,18/1427	269/122
18/450	3,50/89	21,65/550	62,75/1594	353/160
20/500	4,49/114	21,65/550	67,20/1707	445/202
24/600	4,49/114	21,65/550	79,60/2022	640/290

## PNEUMATIC CYLINDER

With a double-acting pneumatic cylinder as standard, it is available in sizes from 2in/50mm to 24in/600mm. 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 85psi/ (6 bar) air supply, see ORBINOX Pneumatic Cylinder Catalogue for more information.

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



DN (in/mm)	A (in/mm)	ØB (in/mm)	H (in/mm)	Connect.	Weight (lbs./kg.)
2/50	1,89/48	4,53/115	16,93/430	1/4 "G	24/11
2,5/65	1,89/48	4,53/115	17,87/454	1/4 "G	26/12
3/80	2,01/51	4,53/115	19,56/497	1/4 "G	29/13
4/100	2,01/51	4,53/115	21,96/558	1/4 "G	33/15
5/125	2,24/57	5,51/140	24,88/632	1/4 "G	51/23
6/150	2,24/57	5,51/140	27,87/708	1/4 "G	60/27
8/200	2,76/70	6,89/175	34,33/872	1/4 "G	101/46
10/250	2,76/70	8,66/220	41,02/1042	3/8" G	154/70
12/300	2,99/76	8,66/220	46,93/1192	3/8" G	196/89
14/350	2,99/76	10,90/277	54,60/1387	3/8" G	298/135
16/400	3,50/89	10,90/277	60,67/1541	3/8" G	357/162
18/450	3,50/89	15,03/382	67,32/1710	1/2" G	467/212
20/500	4,49/114	15,03/382	73,74/1873	1/2" G	639/290
24/600	4,49/114	15,03/382	85,71/2178	1/2" G	827/375

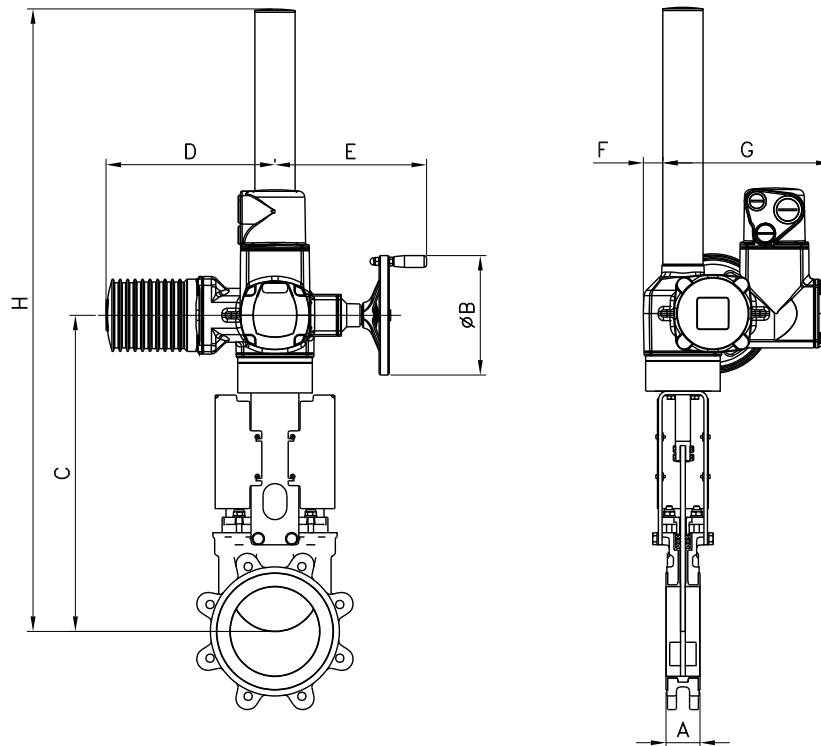
Note: pneumatic cylinder sizing for sizes DN 12in/300mm and above are based on EX pressure ratings

## ELECTRIC ACTUATOR

Designed with a yoke flange for the actuator according to ISO 5210 / DIN 3338 as standard, it is available from 2in/50mm to DN 24in/600mm, both for rising stem and non-rising stem configurations and with manual overrides.

Knife gate valves with a wide range of electric actuator brands available



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

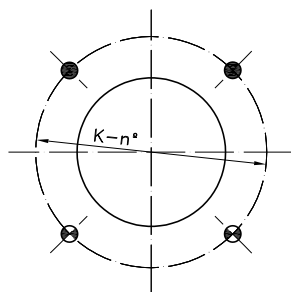


DN (in/mm)	A (in/mm)	C (in/mm)	ØB (in/mm)	H (in/mm)	D (in/mm)	E (in/mm)	F (in/mm)	G (in/mm)	Torque (ft.LBS/Nm)
2/50	1,89/48	14,84/377	6,30/160	21,53/547	10,43/265	9,80/249	2,44/62	9,37/238	7,4/10
2,5/65	1,89/48	15,91/404	6,30/160	22,60/574	10,43/265	9,80/249	2,44/62	9,37/238	7,4/10
3/80	2,01/51	16,88/429	6,30/160	23,58/599	10,43/265	9,80/249	2,44/62	9,37/238	7,4/10
4/100	2,01/51	18,50/470	6,30/160	25,19/640	10,43/265	9,80/249	2,44/62	9,37/238	7,4/10
5/125	2,24/57	19,84/504	6,30/160	26,54/674	10,43/265	9,80/249	2,44/62	9,37/238	11,06/15
6/150	2,24/57	21,85/555	6,30/160	41,55/1055	10,43/265	9,80/249	2,44/62	9,37/238	14,8/20
8/200	2,76/70	26,33/669	6,30/160	46,02/1169	10,43/265	9,80/249	2,44/62	9,37/238	22,2/30
10/250	2,76/70	30,27/769	6,30/160	49,96/1269	10,43/265	9,80/249	2,44/62	9,37/238	33,3/45
12/300	2,99/76	34,21/869	6,30/160	53,89/1369	10,43/265	9,80/249	2,44/62	9,37/238	29,50/40
14/350	2,99/76	37,00/940	7,87/200	56,69/1440	11,14/283	10,00/254	2,55/65	9,76/248	51,8/70
16/400	3,50/89	41,10/1044	7,87/200	60,78/1544	11,14/283	10,00/254	2,55/65	9,76/248	66,38/90
18/450	3,50/89	46,14/1172	7,87/200	65,82/1672	11,14/283	10,00/254	2,55/65	9,76/248	81,4/110
20/500	4,49/114	50,39/1280	7,87/200	70,07/1780	11,14/283	10,00/254	3,58/91	9,76/248	70,06/95
24/600	4,49/114	61,61/1565	12,40/315	81,29/2065	15,31/389	13,22/336	3,58/91	11,25/286	103,26/140

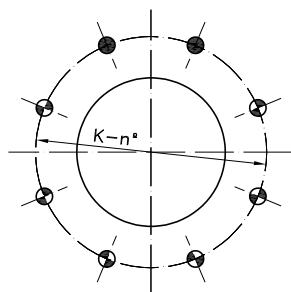
Note: torque values for sizes DN 12in/300mm and above are calculated based on EX pressure ratings. For full differential pressure, check with ORBINOX representative

## FLANGE AND BOLTING DETAILS ASME B16.5, CLASS 150

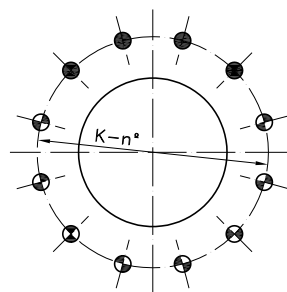
DN	K	n°	M	T	 
2"	4 3/4"	4	5/8" - 11 UNC	15/32"	2 - 2
2,5"	5 1/2"	4	5/8" - 11 UNC	15/32"	2 - 2
3"	6"	4	5/8" - 11 UNC	15/32"	2 - 2
4"	7 1/2"	8	5/8" - 11 UNC	11/32"	2 - 6
5"	8 1/2"	8	3/4" - 10 UNC	15/32"	2 - 6
6"	9 1/2"	8	3/4" - 10 UNC	3/8"	2 - 6
8"	11 3/4"	8	3/4" - 10 UNC	15/32"	2 - 6
10"	14 1/4"	12	7/8" - 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



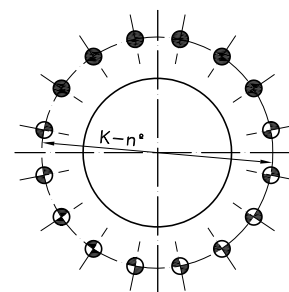
DN 2" - 3"



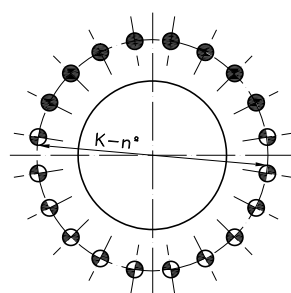
DN 4" - 8"



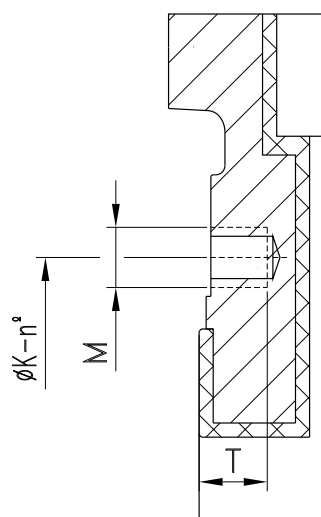
DN 10" - 14"





DN 16" - 18"






DN 20" - 24"

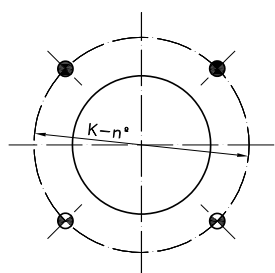


-  BLIND TAPPED HOLES
-  TAPPED THROUGH

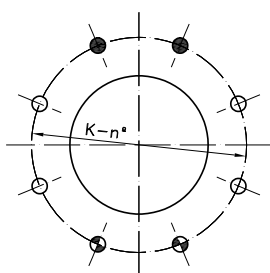
## FLANGE AND BOLTING DETAILS EN-1092 PN10

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

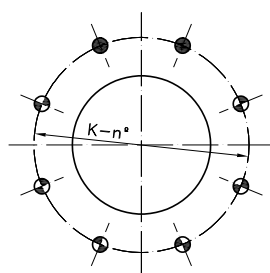
\* Flange drilling of DN 65 PN10/16 according to EN-1092 allow 4 or 8 drills. ORBINOX designs of DN 65 PN10/16 have 4 drills



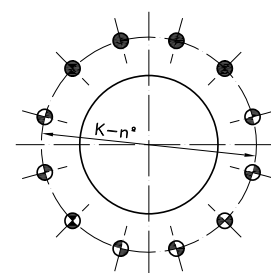
DN 50-65



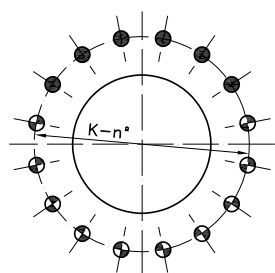
DN 80



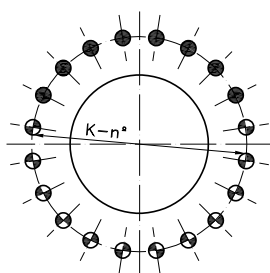
DN 100-200



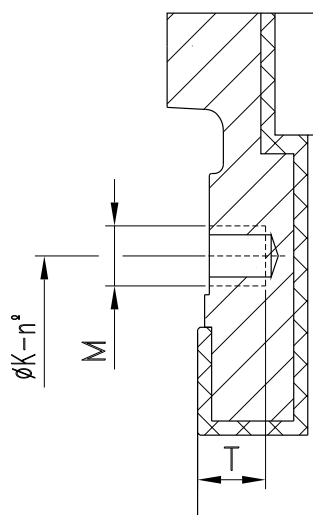
DN 250-300






DN 350-400



DN 450-600



-  BLIND TAPPED HOLES
-  TAPPED THROUGH
-  THROUGHGOING BOLTS