

Model Ser.56 (IB)

BI-DIRECTIONAL KNIFE GATE VALVE

The Series 56 (IB) model knife gate is a bi-directional stainless steel valve designed for general industrial service applications. The design of the body and seat assures non-clogging shut off on suspended solids in industries such as:

- Pulp and Paper
- Petrochemical
- Bulk handling,
- Wastewater treatment plants
- etc.

Sizes (DN)

2in/50mm to 28in/700mm
Larger diameters on request

Working pressure and temperatures

2in/50mm to 28in/700mm: 150 psi/10 bar

CF8M: -4°F (-20°C) / 176°F (80°)

Standard flange drilling

ASME B16.5 (class 150)
EN-1092 PN10
Other flange drillings available on request

Directives

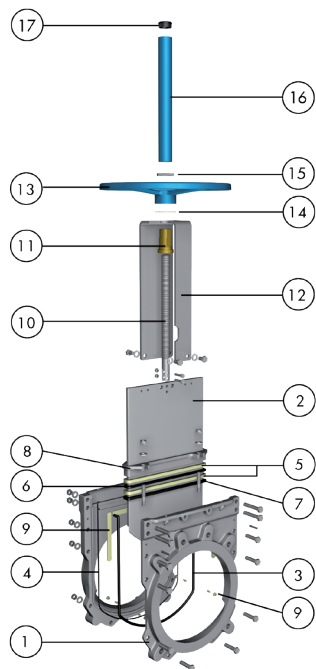
For EU Directives and other Certificates please see the document: Directives & Certificates Compliance - Knife Gate Valves - Catalogues and Datasheets

Testing

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



STANDARD PARTS LIST



Part	Materials
1 Body	CF8M
2 Gate	AISI 316
3 Seat	NBR
4 O-ring	NBR
5 Packing	PTFE Impreg. Synth. Fibre (ST)
6 Packing O-ring	NBR
7 Packing resilient	NBR
8 Gland follower	CF8M
9 Sliders	Glass filled PTFE
10 Stem	Stainless Steel
11 Stem nut	Brass
12 Yoke	AISI 304
13 Handwheel	EN-GJS400
14 Friction washer	Brass
15 Nut	Zinc Plated Carbon Steel
16 Stem protector	Carbon steel - Epoxy coated
17 Cap	Plastic

DESIGN FEATURES

Body

Wafer style stainless steel split body with a secondary body seal arrangement for leak containment. The body and seal design allow a perfect adjustment of the body- gate-seal, reducing the torque that keeps the tightness and avoiding any build up of solids that would prevent valve from closing

Gate

Stainless steel gate, as standard. Gate is polished on both sides for a greater seal between the gate with both the packing and the seat. Gate is fully guided in the body along the whole valve stroke to avoid gate fluttering and to ensure maximum tightness. In AISI 316 stainless steel as standard, also available in higher-grade stainless steel options

Seat

Unique resilient seat design for all sizes, mechanically locked in the internal groove of valve bodies

Packing

Long-life packing with several layers of braided fibre plus an O-ring, with an easy access packing gland ensuring a tight seal. Long-life braided packing is available in a wide range of materials

Stem

The standard stainless steel trapezoidal thread 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 stainless steel (Epoxy coated steel available on request). Compact design makes it extremely robust even under the most severe conditions

Gate safety protection

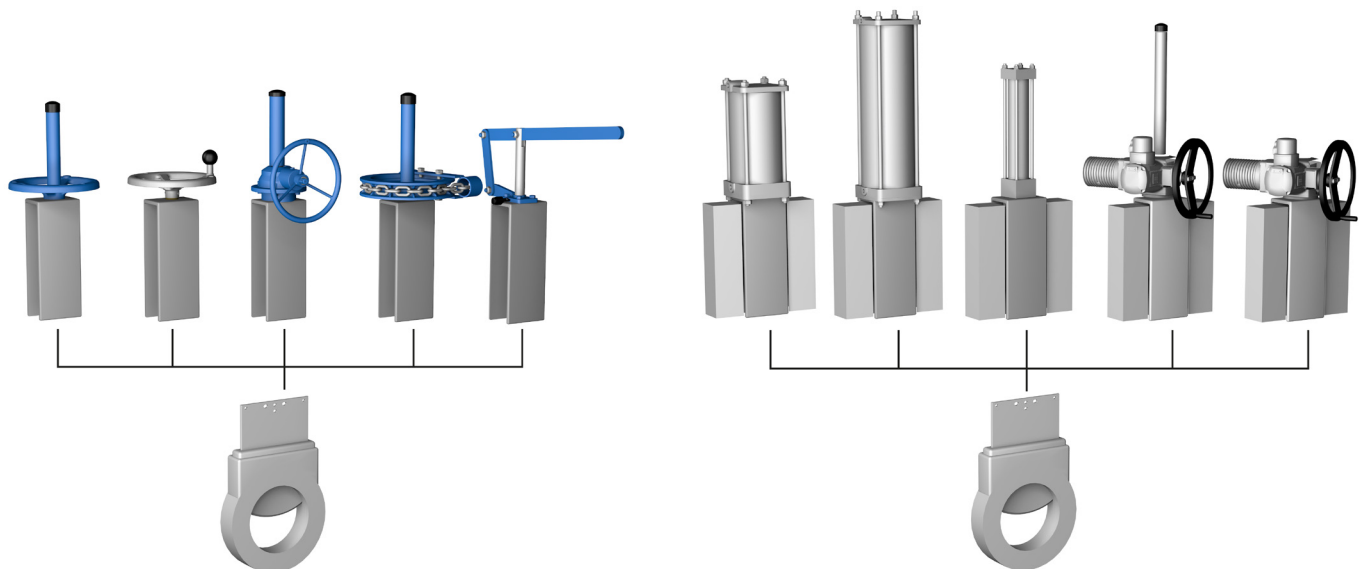
ORBINOX automated valves are provided with gate guards in accordance with EU Safety Standards. The design feature prevents any objects from being caught accidentally while the gate is moving. *ONLY IN EUROPE

Actuators

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

Manual RS Manual NRS Bevel Gear Chainwheel Lever

Pneumatic Double Acting Pneumatic Single Acting Hydraulic Electric RS Electric NRS



OTHER OPTIONS

Other materials of construction

Special stainless steels (Duplex, superduplex ...), special alloys (254SMO, Hastelloys, ...), etc.

Fabricated valves

ORBINOX designs, produces and delivers special fabricated valves for special process conditions (big sizes and/or high pressures)

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 %

Actuator manual override (Fig. 1)

Pneumatic and electric actuators can be equipped with manual override handwheels to manually operate the actuators in emergency situations on 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)
NBR (N)	248	120

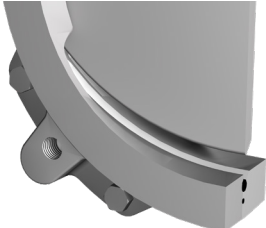
Other materials under request (AFLAS, etc.)

PACKING TYPES

Material	Max.T (°F)	Max.T (°C)	pH
PTFE impregn.synth fibre (ST)	482	250	2-13
Dynapack (DP)	518	270	2-14

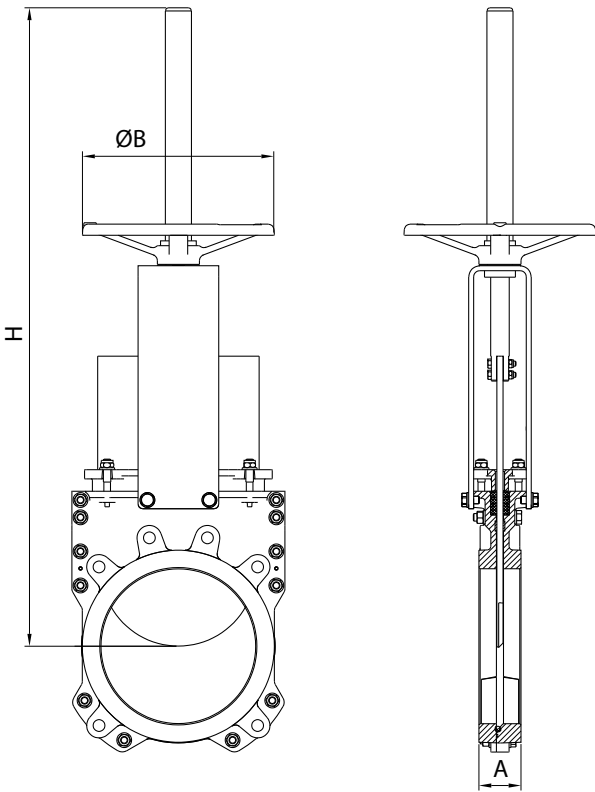
All types include an elastomere O-ring (same material as seal). Standard packing: ST

SEAT CONFIGURATIONS/DESIGNS

Type	Features
Resilient seat	<p>Bidirectional bubble tight shutt-off seat. The seal is mechanically secured in between the split bodies to prevent any seal movement</p> 

HANDWHEEL RISING STEM

Manual actuator available from 2in/50mm to 24in/600mm and recommended with gearbox from 12in/300mm and above

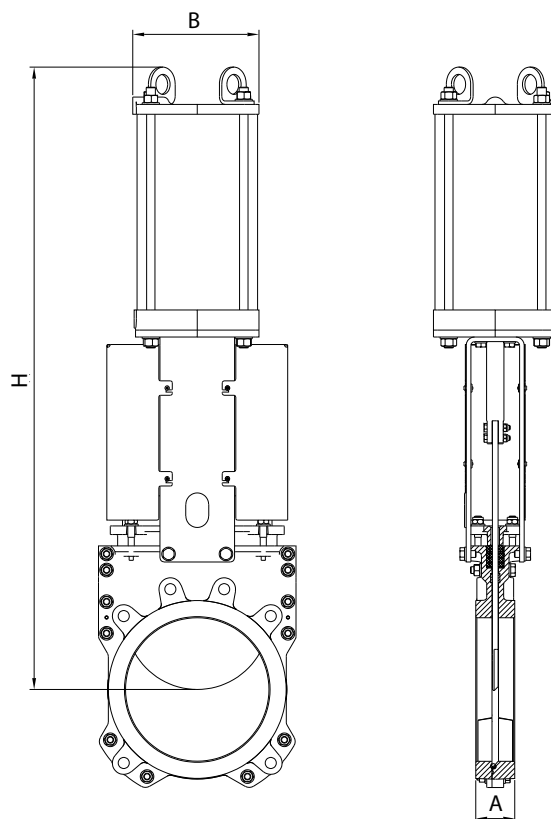


DN (in/mm)	A (in/mm)	H (in/mm)	ØB (in/mm)
2/50	1,69/43	16,54/420	8,86/225
3/80	1,81/46	18,70/475	8,86/225
4/100	2,05/52	20,47/520	8,86/225
6/150	2,20/56	25,67/652	8,86/225
8/200	2,36/60	32,36/822	12,20/310
10/250	2,68/68	40,24/1022	12,20/310
12/300	3,07/78	44,17/1122	16,14/410
14/350	3,07/78	52,09/1323	16,14/410
16/400	3,50/89	56,18/1427	16,14/410
18/450	3,50/89	62,76/1594	21,65/550
20/500	4,49/114	67,20/1707	21,65/550
24/600	4,49/114	79,61/2022	21,65/550

PNEUMATIC CYLINDER

With a double-acting pneumatic cylinder as standard, it is available in sizes from 2in/50mm to 28in/700mm. 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 Solutions Catalogue for more information

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



DN (in/mm)	A (in/mm)	B (in/mm)	H (in/mm)	Connect.
2/50	1,69/43	4,53/115	16,54/420	1/4"G
3/80	1,81/46	4,53/115	19,88/505	1/4"G
4/100	2,05/52	4,53/115	22,05/560	1/4"G
6/150	2,20/56	5,51/140	27,87/708	1/4"G
8/200	2,36/60	6,89/175	34,33/872	1/4"G
10/250	2,68/68	8,66/220	41,02/1042	3/8"G
12/300	3,07/78	8,66/220	46,93/1192	3/8"G
14/350	3,07/78	10,91/277	54,61/1387	3/8"G
16/400	3,50/89	10,91/277	60,67/1541	3/8"G
18/450	3,50/89	15,04/382	67,32/1710	1/2"G
20/500	4,49/114	15,04/382	73,74/1873	1/2"G
24/600	4,49/114	15,04/382	85,75/2178	1/2"G
28/700	6,50/165	20,87/530	131,89/3350	3/4"G

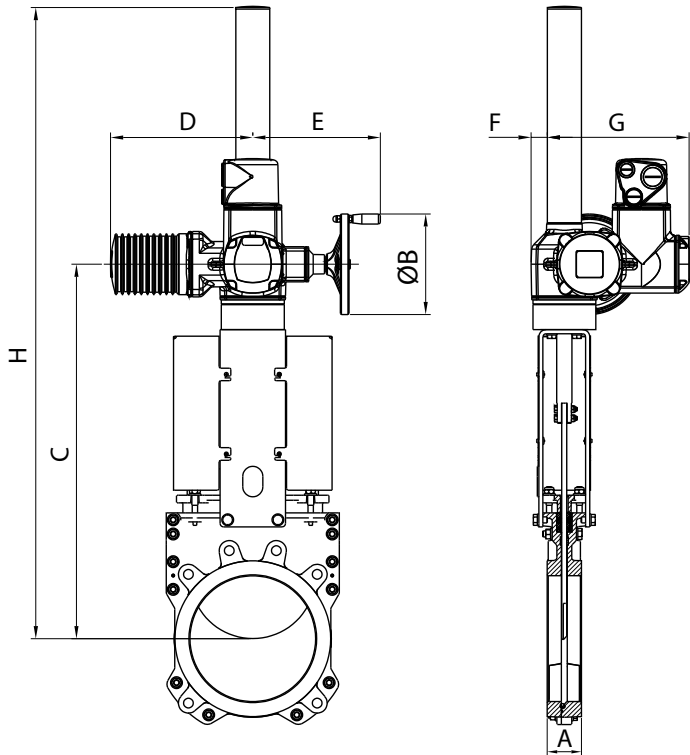
Note: pneumatic cylinder sizing for sizes DN 12in/300mm and above are based on Series 10 (EX) pressure ratings

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 28in/700mm, 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

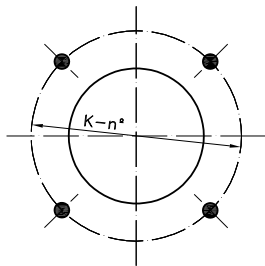


DN (in/mm)	A (in/mm)	C (in/mm)	ØB (in/mm)	H (in/mm)	D (in/mm)	E (in/mm)	F (in/mm)	G (in/mm)	Torque (ft.LBS/Nm)
2/50	1,69/43	14,84/377	6,30/160	21,54/547	10,43/265	9,80/249	2,44/62	9,37/238	7,4/10
3/80	1,81/46	16,89/429	6,30/160	23,58/599	10,43/265	9,80/249	2,44/62	9,37/238	7,4/10
4/100	2,05/52	18,50/470	6,30/160	25,20/640	10,43/265	9,80/249	2,44/62	9,37/238	7,4/10
6/150	2,20/56	21,85/555	6,30/160	41,54/1055	10,43/265	9,80/249	2,44/62	9,37/238	14,8/20
8/200	2,36/60	26,34/669	6,30/160	46,02/1169	10,43/265	9,80/249	2,44/62	9,37/238	22,2/30
10/250	2,68/68	30,28/769	6,30/160	49,96/1269	10,43/265	9,80/249	2,44/62	9,37/238	33,3/45
12/300	3,07/78	34,21/869	7,87/200	53,90/1369	11,14/283	10,00/254	2,56/65	9,76/248	29,50/40
14/350	3,07/78	37,01/940	7,87/200	56,69/1440	11,14/283	10,00/254	2,56/65	9,76/248	51,8/70
16/400	3,50/89	41,10/1044	12,40/315	60,79/1544	15,31/389	13,23/336	3,58/91	11,26/286	66,38/90
18/450	3,50/89	46,14/1172	12,40/315	65,83/1672	15,31/389	13,23/336	3,58/91	11,26/286	81,4/110
20/500	4,49/114	50,39/1280	15,75/400	70,08/1780	15,31/389	13,35/339	3,58/91	11,26/286	70,06/95
24/600	4,49/114	61,61/1565	15,75/400	81,30/2065	15,31/389	13,35/339	3,58/91	11,26/286	103,26/140
28/700	6,50/165	69,41/1763	19,69/500	112,05/2846	16,93/430	14,37/365	4,61/117	11,93/303	361,4/490

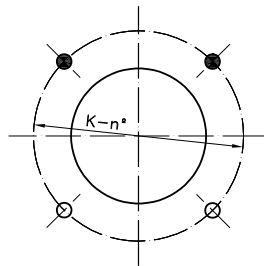
FLANGE AND BOLTING DETAILS ASME B16.5, CLASS 150*

DN	K	n°	M	T	
2"	4 3/4"	4	5/8" - 11 UNC	1/2"	4-0
3"	6"	4	5/8" - 11 UNC	1/2"	2-2
4"	7 1/2"	8	5/8" - 11 UNC	1/2"	2-6
6"	9 1/2"	8	3/4" - 10 UNC	1/2"	2-6
8"	11 3/4"	8	3/4" - 10 UNC	1/2"	4-4
10"	14 1/4"	12	7/8" - 9 UNC	3/4"	6-6
12"	17"	12	7/8" - 9 UNC	7/8"	6-6
14"	18 3/4"	12	1" - 8 UNC	7/8"	6-6
16"	21 1/4"	16	1" - 8 UNC	3/4"	8-8
18"	22 3/4"	16	1 1/8" - 7 UNC	3/4"	8-8
20"	25"	20	1 1/8" - 7 UNC	1"	12-8
24"	29 1/2"	20	1 1/4" - 7 UNC	1"	12-8
28"	34"	28	1 1/4" - 7 UNC	1 1/4"	18-10

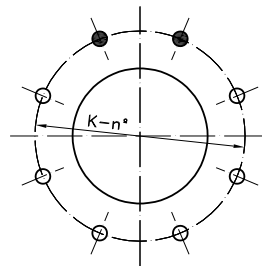
* From NPS 24, acc. to ASME B16.47 Series A (class 150)



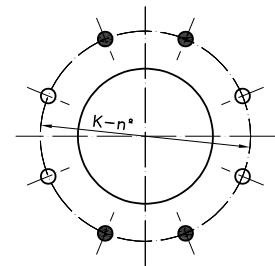
DN 2"



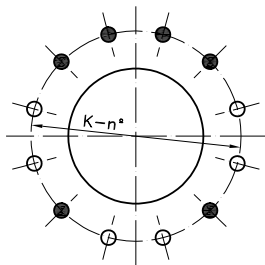
DN 3"



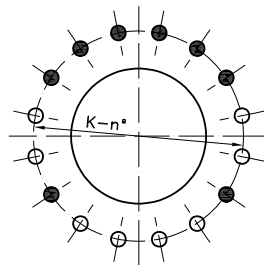
DN 4"-6"



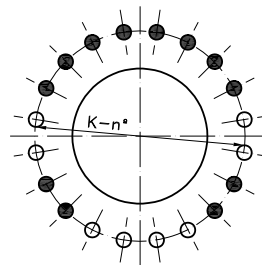
DN 8"



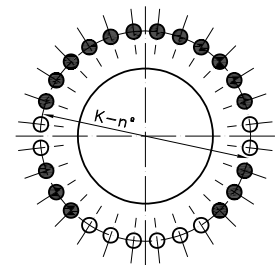
DN 10"-14"



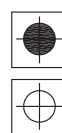
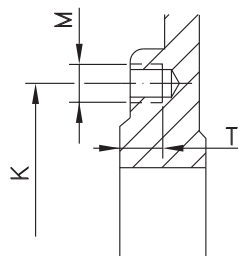
DN 16"-18"



DN 20"-24"



DN 28"




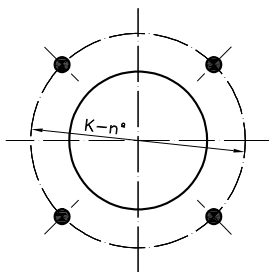
BLIND TAPPED HOLES



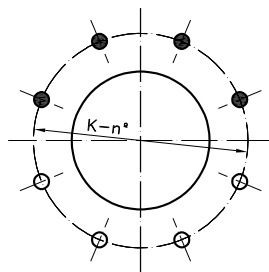
THROUGHGOING BOLTS

FLANGE AND BOLTING DETAILS EN 1092 PN10

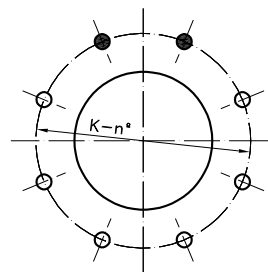
DN	K	n°	M	T	
50	125	4	M16	14	4 - 0
80	160	8	M16	14	4 - 4
100	180	8	M16	12	2 - 6
150	240	8	M-20	12	2 - 6
200	295	8	M-20	14	4 - 4
250	350	12	M-20	20	6 - 6
300	400	12	M-20	22	6 - 6
350	460	16	M-20	18	8 - 8
400	515	16	M-24	20	8 - 8
450	565	20	M-24	18	10 - 10
500	620	20	M-24	29	12 - 8
600	725	20	M-27	26	12 - 8
700	840	24	M-27	35	20 - 4



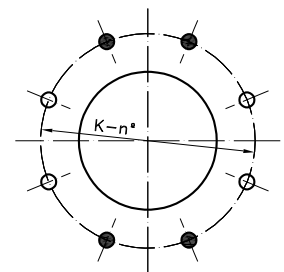
DN 50



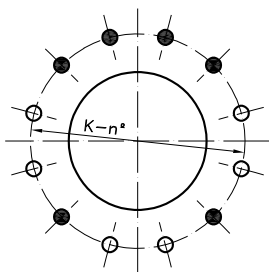
DN 80



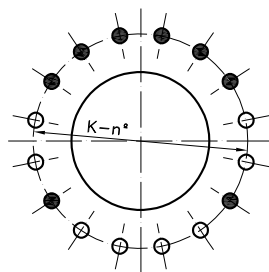
DN 100-150



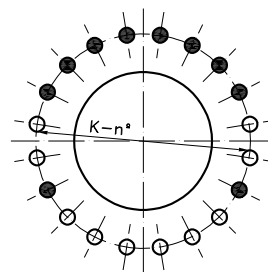
DN 200



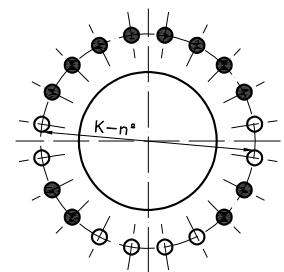
DN 250-300



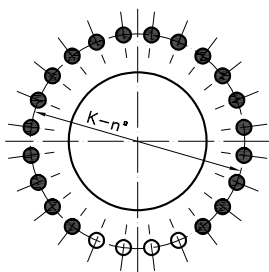
DN 350-400



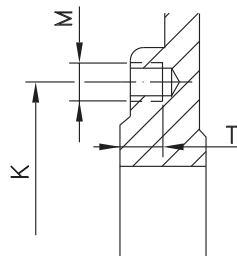
DN 450



DN 500-600



DN 700



BLIND TAPPED HOLES



THROUGHGOING BOLTS