

Model Ser.30 (TL)

THROUGH CONDUIT KNIFE GATE VALVE

The Series 30 (TL) model knife gate is a bi-directional wafer valve designed for media with high consistency. The double seat design assures a non-clogging shut off on either normal or reverse flow. The valve is used in a wide range of demanding applications in industries such as:

- Pulp and Paper
- Wastewater treatment plants
- Chemical plants
- Power plants
- etc.

Sizes (DN)

2in/50mm to 40in/1000mm
Larger diameters on request

Working pressure and temperatures

2in/ 50mm to 5in/ 125mm: 150psi/ (10 bar)
6in/150mm to 10in/ 250mm: 115psi/ (8 bar)
12in/300mm to 16in/ 400mm: 90psi/ (6 bar)
18in/450mm: 75psi/ (5 bar)
20in/500mm to 24in/ 600mm: 60psi/ (4 bar)
28in/700mm to 40in/1000mm: 30psi/ (2 bar)

GJL250/ GJS400: 14°F (-10°C) / 176°F (80°C)
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

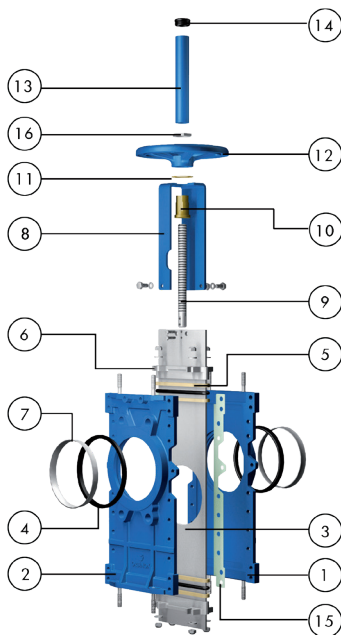
For EU Directives and other Certificates please see the document: Directives & Certificates Compliance - Knife Gate Valves – Catalogues and Datasheets)

Testing

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



STANDARD PARTS LIST



Part	Description
1	Body EN-GJL250 / EN-GJS400 / CF8M ¹
2	Body EN-GJL250 / EN-GJS400 / CF8M ¹
3	Gate AISI 304 / AISI 316 ¹
4	Seat Metal or EPDM
5	Packing PTFE Impreg. Synth. Fibre (ST)+O-ring
6	Gland follower Al. (DN 2in/50mm-12in/300mm) / EN-GJS400 (DN 14in/350mm-40in/1000mm) / CF8M ¹
7	Seat retainer ring AISI 304 / AISI 316 ¹
8	Yoke Epoxy-coated Carbon Steel
9	Stem Stainless Steel
10	Stem nut Brass
11	Friction washer Brass
12	Handwheel EN-GJS400
13	Stem protector Epoxy-coated Carbon Steel
14	Cap Plastic
15	Gasket Aramid fibres
16	Nut Zinc plated Carbon Steel

¹ Stainless steel configuration

DESIGN FEATURES

Body

Wafer style cast two-part bolted body, both internally machined, with reinforcing ribs in larger diameters for extra body strength. The stainless steel version valves include internal high density polyethylene sliders (HMWPE) that ensure smoother gate traveling. Full port design to allow a greater flow capacity and to guarantee a minimal pressure drop

Selfcleaning gate

Stainless steel as standard. One piece through-going gate with o-port design. When closing, the gate cuts and moves a disc of material downwards, which is again returned to the flow when opening. Gate is polished on both sides to avoid jamming and to ensure a greater seal between the gate with both packing and seat. The thickness and/or the material of the gate can be changed on request for higher pressure requirement

Seat(resilient)

Unique design that mechanically locks the seal in the interior of the valve body with a stainless steel retainer ring. Standard EPDM also available in different materials such as Viton, PTFE, etc.

Packing

Double stuffing box with several layers of braided fibre plus an EPDM o-ring, with an easy access and adjusting packing gland ensuring a tight seal. Long-life braided packing is 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 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 electrostatically applied making the valves to be corrosion resistant with a high quality finished surface. The ORBINOX standard colour is RAL-5015 blue

Gate safety protection

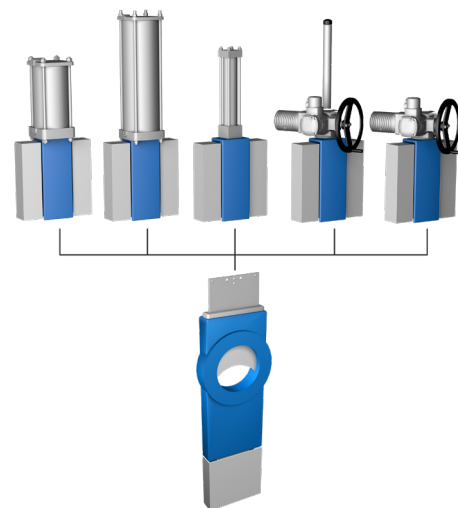
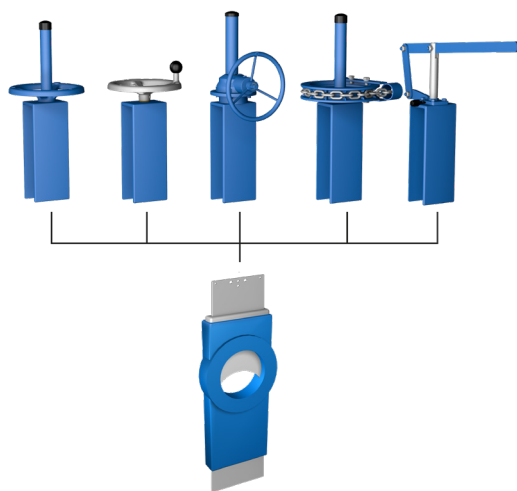
ORBINOX automated valves are provided with gate guards in accordance with EU Safety Standards. The design feature prevents any objects from being caught accidentally while the gate is moving.* ONLY IN EUROPE

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 Pneumatic Hydraulic Electric RS Electric NRS
Double Acting Single Acting



OTHER OPTIONS

Other materials of construction

Ductile iron, carbon steel, special stainless steels (Duplex, ...), 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

Bonnet

Assures tight sealing to atmosphere for using with hazardous gas or fluids. Reduces packing maintenance

Diamond port

Better regulation precision for some specific applications

Locking device

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

Flush ports

Allow for cleaning of solids trapped within the body cavities that can obstruct the flow or prevent the valve from closing. Depending on the process, purging can be made with air, steam, liquids, etc.

Actuator manual override

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

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

SEAT/SEAL TYPES

Material	Max.T (°F)	Max.T (°C)	Applications
Metal/Metal	>482	>250	High temp./Low tightness
EPDM (E)	248	120	Acids and non mineral oils.
NBR (N)	248	120	Resistance to petroleum products.
FKM-FPM (V)	392	200	Chemical service / High temp.
VMQ (S)	482	250	Food service / High temp.
PTFE (T)	482	250	Corrosion resistance

PACKING TYPES

Material	Max.T (°F)	Max.T (°C)	pH
PTFE impregn. synth. fibre (ST)	482	250	2-13
Braided PTFE (TH)	500	260	0-14
Graphited (GR)	1112	600	0-14
Ceramic fibre (FC)	2192	1200	- - -

All types include an elastomere O-ring (same material as seal), excluding TH, GR and FC

More details and other materials under request

SEAT CONFIGURATIONS/DESIGNS

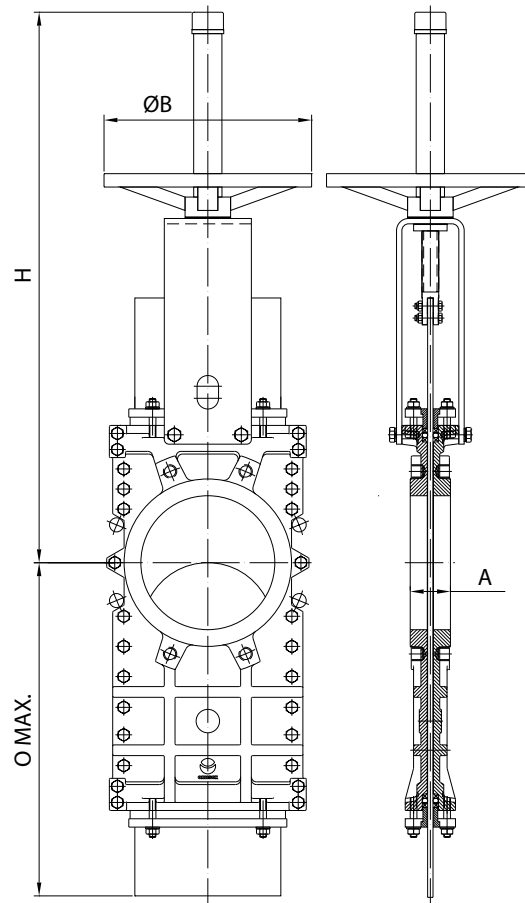
Type	Features	Cast Iron	Stainless Steel
Metal / Metal	<ul style="list-style-type: none"> - High temperature applications - When full tightness is not required - Stainless steel version: includes HMW polyethylene seat sliders that ensure a smoother gate traveling 		 DN 50 - 150 DN 200 - 600
A Ring Resilient	<ul style="list-style-type: none"> - Standard resilient seat design, consists of an elastomer seal fixed to the valve body with a replaceable stainless steel retainer ring - See temperature chart for seat materials - Stainless steel version: includes HMW polyethylene seat sliders that ensure a smoother gate traveling 		 DN 50 - 150 DN 200 - 600
B Ring Resilient	<ul style="list-style-type: none"> - Resilient seat design with an elastomer seal fixed to the valve body with two replaceable reinforced seal retainer rings that protect the seat in abrasive services. - See temperature chart for seat materials - Stainless steel version: includes HMW polyethylene seat sliders that ensure a smoother gate traveling 		 DN 50 - 150 DN 200 - 600
B Ring Metal / Metal	<ul style="list-style-type: none"> - Two replaceable reinforced "B" type rings protect the seat in abrasive services - Stainless steel version: includes HMW polyethylene seat sliders that ensure a smoother gate traveling 		 DN 50 - 150 DN 200 - 600

OTHER SEAT FEATURES

Type	Features	Cast Iron	Stainless Steel
Deflection cone C	<ul style="list-style-type: none"> - Used to protect valve seats and internals - Material: AISI 316, Ni-Hard, etc. - Face-to-face dimension increases: DN 2in/50mm - DN 10in/250mm X = 0.35in/9mm DN 12in/300mm - DN 24in/600mm X = 0.47in/12mm Larger diameters on request 		

HANDWHEEL RISING STEM

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



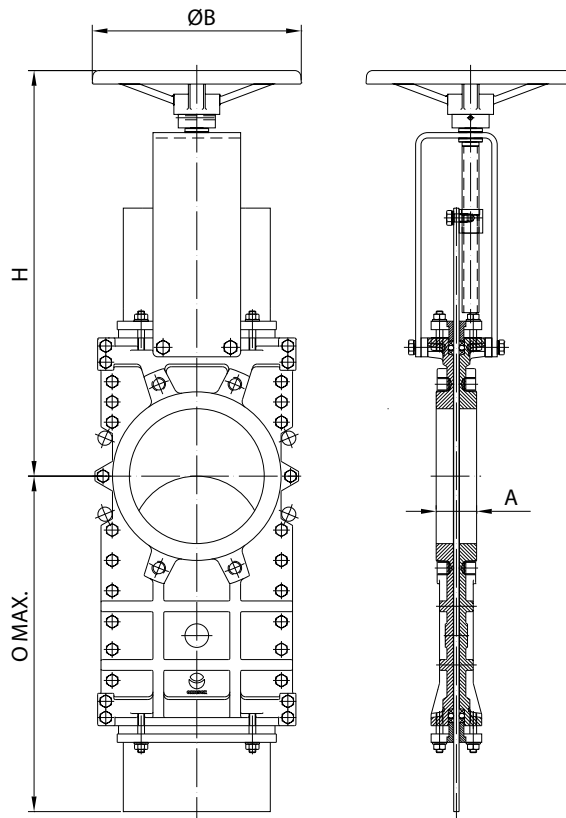
DN (in/mm)	A (in/mm)	ØB (in/mm)	H (in/mm)	O max.	Weight (lbs./kg.)
2/50	1,57/40	8,86/225	16,88/429	9,13/232	26/12
2,5/65	1,57/40	8,86/225	17,75/451	10,04/255	30/14
3/80	1,96/50	8,86/225	18,74/476	12,20/310	35/16
4/100	1,96/50	8,86/225	20,35/517	14,44/367	44/20
5/125	1,96/50	8,86/225	23,66/601	17,00/432	64/29
6/150	2,36/60	8,86/225	25,67/652	19,56/497	77/35
8/200	2,36/60	12,20/310	32,36/822	25,00/635	137/62
10/250	2,75/70	12,20/310	40,03/1017	30,59/777	197/89
12/300	2,75/70	12,20/310	43,38/1102	35,62/905	242/110
14/350	3,78/96	16,14/410	50,63/1286	41,22/1047	384/174
16/400	3,93/100	16,14/410	54,56/1386	46,10/1171	586/266
18/450	4,17/106	21,65/550	62,32/1583	51,22/1301	718/326
20/500	4,33/110	21,65/550	65,86/1673	57,52/1461	820/372
24/600	4,33/110	21,65/550	77,28/1963	67,36/1711	981/445

Other diameters on request

HANDWHEEL NON-RISING STEM

Recommended for installation where space is limited, available from 2in/50mm to DN 24in/600mm and recommended with gearbox from 14in/350mm and above.

Aluminium handwheel for 2in/50mm to 12in/300mm valves and EN-GJS400 from 14in/350mm and above

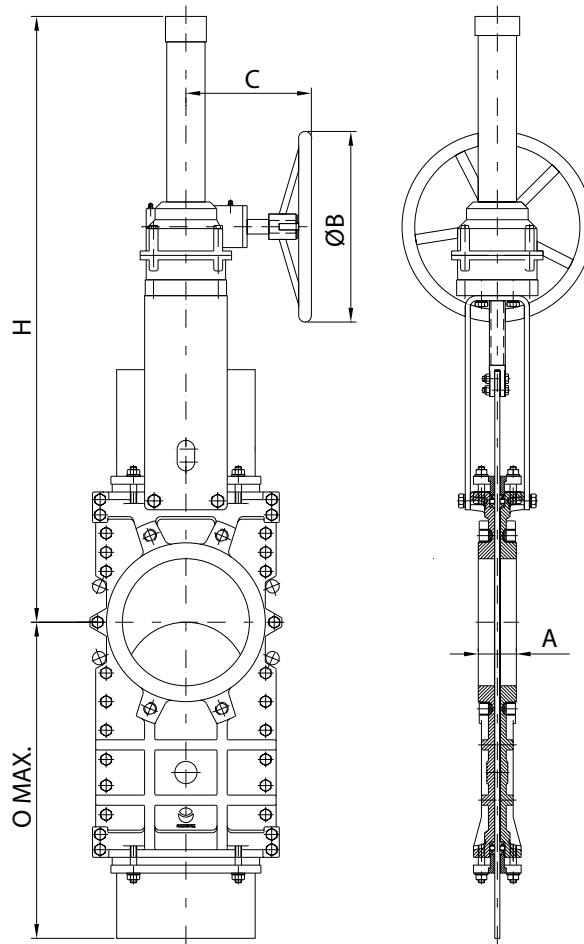


DN (in/mm)	A (in/mm)	ØB (in/mm)	H (in/mm)	O max.
2/50	1,57/40	8,86/225	12,48/317	9,13/232
2,5/65	1,57/40	8,86/225	13,34/339	10,04/255
3/80	1,96/50	8,86/225	14,33/364	12,20/310
4/100	1,96/50	8,86/225	15,94/405	14,44/367
5/125	1,96/50	8,86/225	17,28/439	17,00/432
6/150	2,36/60	8,86/225	19,29/490	19,56/497
8/200	2,36/60	12,20/310	23,42/595	25,00/635
10/250	2,75/70	12,20/310	27,16/690	30,59/777
12/300	2,75/70	12,20/310	30,51/775	35,62/905
14/350	3,78/96	16,14/410	35,71/907	41,22/1047
16/400	3,93/100	16,14/410	39,64/1007	46,10/1171
18/450	4,17/106	21,65/550	44,44/1129	51,22/1301
20/500	4,33/110	21,65/550	47,99/1219	57,52/1461
24/600	4,33/110	21,65/550	55,07/1399	67,36/1711

Other diameters on request

BEVEL GEAR

Recommended for valves larger than 14in/350mm. Available both for rising stem and non-rising stem configurations and with different reduction ratios

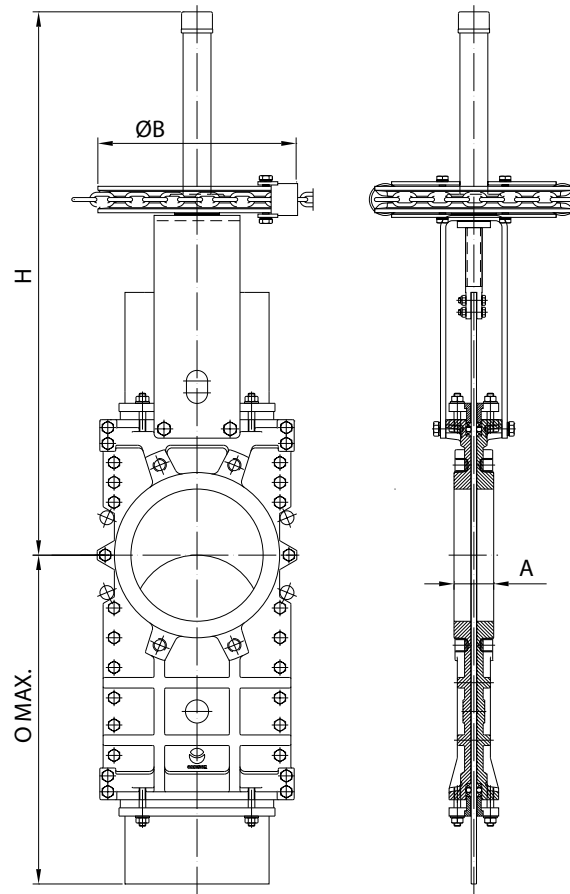


DN (in/mm)	A (in/mm)	ØB (in/mm)	H (in/mm)	C (in/mm)	O max.
8/200	2,36/60	12/300	39,13/994	7,87/200	25,00/635
10/250	2,75/70	12/300	42,87/1089	7,87/200	30,59/777
12/300	2,75/70	12/300	45,43/1154	7,87/200	35,62/905
14/350	3,78/96	18/450	60,47/1536	10,62/270	41,22/1047
16/400	3,93/100	18/450	64,40/1636	10,62/270	46,10/1171
18/450	4,17/106	18/450	69,21/1758	10,62/270	51,22/1301
20/500	4,33/110	18/450	72,75/1848	10,62/270	57,52/1461
24/600	4,33/110	18/450	79,84/2028	10,62/270	67,36/1711

Other diameters on request

CHAINWHEEL

Recommended for elevated installations. The handwheel is replaced by a chainwheel to accommodate the chain. Available both for rising stem and non-rising stem and for sizes from 2in/50mm to 24in/600mm



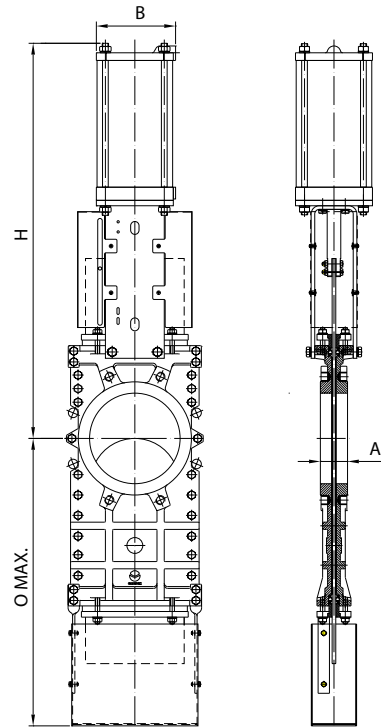
DN (in/mm)	A (in/mm)	ØB (in/mm)	H (in/mm)	O max.
2/50	1,57/40	8,86/225	16,88/429	9,13/232
2,5/65	1,57/40	8,86/225	17,75/451	10,04/255
3/80	1,96/50	8,86/225	18,74/476	12,20/310
4/100	1,96/50	8,86/225	20,39/518	14,44/367
5/125	1,96/50	8,86/225	23,66/601	17,00/432
6/150	2,36/60	8,86/225	25,66/652	19,56/497
8/200	2,36/60	12,00/300	32,36/822	25,00/635
10/250	2,75/70	12,00/300	40,04/1017	30,59/777
12/300	2,75/70	12,00/300	43,38/1102	35,62/905
14/350	3,78/96	17,87/454	50,59/1285	41,22/1047
16/400	3,93/100	17,87/454	54,52/1385	46,10/1171
18/450	4,17/106	17,87/454	62,09/1577	51,22/1301
20/500	4,33/110	17,87/454	65,82/1672	57,52/1461
24/600	4,33/110	17,87/454	77,24/1962	67,36/1711

Other diameters on request

PNEUMATIC CYLINDER

With a double-acting pneumatic cylinder as standard, it is available in sizes from 2in/50mm to 32in/800mm. 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)	B (in/mm)	H (in/mm)	O max.	Connect.	Weight (lbs./kg.)
2/50	1,57/40	4,53/115	16,41/417	9,13/232	1/4" G	30/14
2,5/65	1,57/40	4,53/115	17,87/454	10,04/255	1/4" G	35/16
3/80	1,96/50	4,53/115	19,56/497	12,20/310	1/4" G	40/18
4/100	1,96/50	4,53/115	21,96/558	14,44/367	1/4" G	51/23
5/125	1,96/50	5,51/140	24,88/632	17,00/432	1/4" G	75/34
6/150	2,36/60	5,51/140	27,87/708	19,56/497	1/4" G	90/41
8/200	2,36/60	6,89/175	34,33/872	25,00/635	1/4" G	160/73
10/250	2,75/70	8,66/220	40,82/1037	30,59/777	3/8" G	231/105
12/300	2,75/70	8,66/220	46,14/1172	35,62/905	3/8" G	282/128
14/350	3,78/96	10,90/277	53,50/1359	41,22/1047	3/8" G	456/207
16/400	3,93/100	10,90/277	59,40/1509	46,10/1171	3/8" G	662/300
18/450	4,17/106	15,03/382	67,24/1708	51,22/1301	1/2" G	833/378
20/500	4,33/110	15,03/382	72,75/1848	57,52/1461	1/2" G	981/445
24/600	4,33/110	17,48/444	86,85/2206	67,36/1711	3/4" G	1365/619
28/700	4,33/110	17,48/444	98,03/2490	78,74/2000	3/4" G	2679/1215
32/800	4,33/110	17,48/444	107,48/2730	94,49/2400	3/4" G	3153/1430

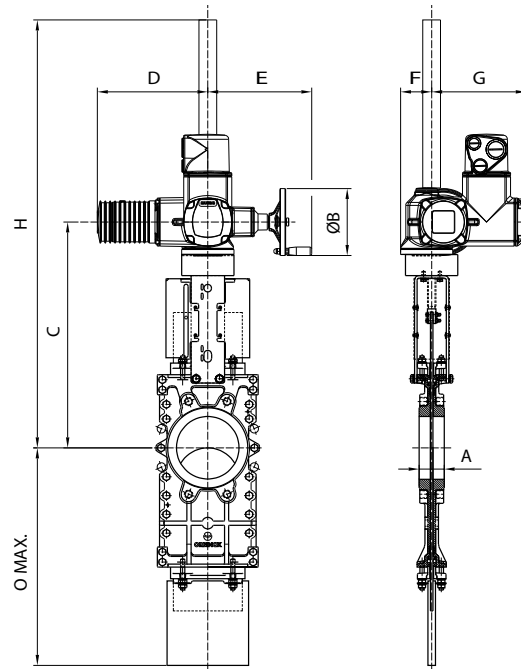
Other diameters on request

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 32in/800mm, 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



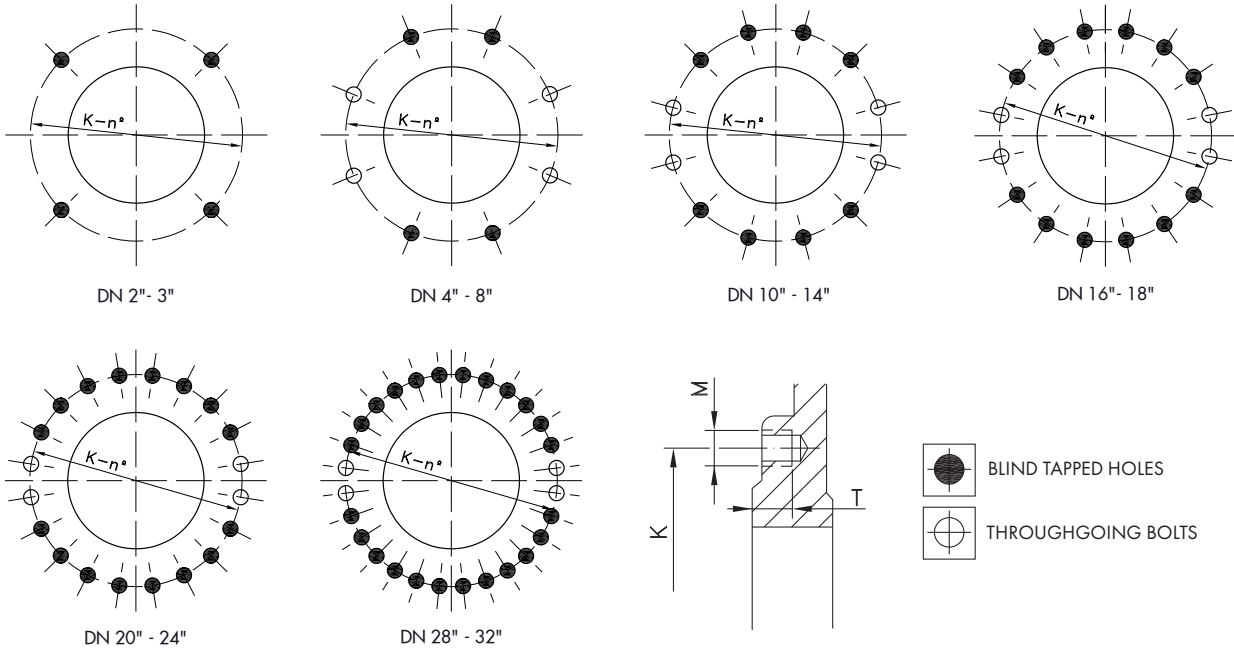
DN (in/mm)	A (in/mm)	C(in/mm)	ØB (in/mm)	H (in/mm)	O max.	D (in/mm)	E (in/mm)	F (in/mm)	G (in/mm)
2/50	1,57/40	14,05/357	6,30/160	20,74/527	9,13/232	10,43/265	9,80/249	2,44/62	9,37/238
2,5/65	1,57/40	14,92/379	6,30/160	21,61/549	10,04/255	10,43/265	9,80/249	2,44/62	9,37/238
3/80	1,96/50	15,90/404	6,30/160	22,59/574	12,20/310	10,43/265	9,80/249	2,44/62	9,37/238
4/100	1,96/50	17,51/445	6,30/160	24,21/615	14,44/367	10,43/265	9,80/249	2,44/62	9,37/238
5/125	1,96/50	18,85/479	6,30/160	25,55/649	17,00/432	10,43/265	9,80/249	2,44/62	9,37/238
6/150	2,36/60	20,86/530	6,30/160	43,30/1100	19,56/497	10,43/265	9,80/249	2,44/62	9,37/238
8/200	2,36/60	24,88/632	6,30/160	49,29/1252	25,00/635	10,43/265	9,80/249	2,44/62	9,37/238
10/250	2,75/70	29,09/739	7,87/200	51,93/1319	30,59/777	11,14/283	10,00/254	2,55/65	9,76/248
12/300	2,75/70	32,44/824	7,87/200	55,47/1409	35,62/905	11,14/283	10,00/254	2,55/65	9,76/248
14/350	3,78/96	37,00/940	7,87/200	60,04/1525	41,22/1047	11,14/283	10,00/254	2,55/65	9,76/248
16/400	3,93/100	42,71/1085	12,40/315	65,74/1670	46,10/1171	15,31/389	13,22/336	3,58/91	11,25/286
18/450	4,17/106	47,36/1203	12,40/315	70,98/1803	51,22/1301	15,31/389	13,22/336	3,58/91	11,25/286
20/500	4,33/110	50,90/1293	12,40/315	74,52/1893	57,52/1461	15,31/389	13,22/336	3,58/91	11,25/286
24/600	4,33/110	59,25/1505	12,40/315	86,81/2205	67,36/1711	15,31/389	13,22/336	3,58/91	11,25/286
28/700	4,33/110	65,04/1652	16,00/400	107,68/2735	78,74/2000	15,31/389	13,22/336	3,58/91	11,25/286
32/800	4,33/110	70,95/1802	16,00/400	113,58/2885	94,49/2400	15,31/389	13,22/336	3,58/91	11,25/286

Other diameters on request



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

DN	K	n°	M	T	 
2"	4 3/4"	4	5/8" - 11 UNC	7/16"	4 - 0
2 1/2"	5 1/2"	4	5/8" - 11 UNC	7/16"	4 - 0
3"	6"	4	5/8" - 11 UNC	9/16"	4 - 0
4"	7 1/2"	8	5/8" - 11 UNC	9/16"	4 - 4
5"	8 1/2"	8	3/4" - 10 UNC	9/16"	4 - 4
6"	9 1/2"	8	3/4" - 10 UNC	11/16"	4 - 4
8"	11 3/4"	8	3/4" - 10 UNC	11/16"	4 - 4
10"	14 1/4"	12	7/8" - 9 UNC	7/9"	8 - 4
12"	17"	12	7/8" - 9 UNC	7/9"	8 - 4
14"	18 3/4"	12	1" - 8 UNC	7/9"	8 - 4
16"	21 1/4"	16	1" - 8 UNC	16"	12 - 4
18"	22 3/4"	16	1 1/8" - 7 UNC	7/9"	12 - 4
20"	25"	20	1 1/8" - 7 UNC	1 1/4"	16 - 4
24"	29 1/2"	20	1 1/4" - 7 UNC	1"	16 - 4
28"	34"	28	1 1/4" - 7 UNC	7/8"	24 - 4
32"	38 1/2"	28	1 1/2" - 6 UNC	7/8"	24 - 4

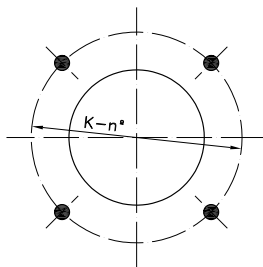
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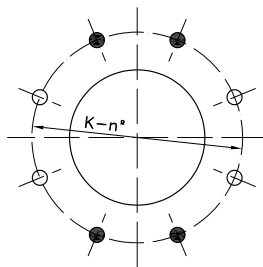
FLANGE AND BOLTING DETAILS EN-1092 PN10

DN	K	n°	M	T	 
50	125	4	M-16	11	4 - 0
65*	145	4	M-16	11	4 - 0
80	160	8	M-16	14	4 - 4
100	180	8	M-16	14	4 - 4
125	210	8	M-16	14	4 - 4
150	240	8	M-20	18	4 - 4
200	295	8	M-20	18	4 - 4
250	350	12	M-20	22	8 - 4
300	400	12	M-20	22	8 - 4
350	460	16	M-20	28	12 - 4
400	515	16	M-24	28	12 - 4
450	565	20	M-24	32	16 - 4
500	620	20	M-24	32	16 - 4
600	725	20	M-27	25	16 - 4
700	840	24	M-27	22	20 - 4
800	950	24	M-30	22	20 - 4

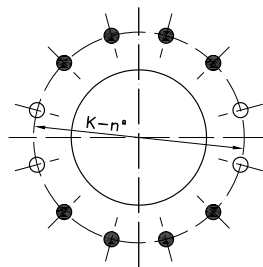
* Flange drilling of DN 65 PN10/16 according to EN-1092 allow 4 or 8 drills. ORBINOX designs of DN 65 PN10/16 have 4 drills



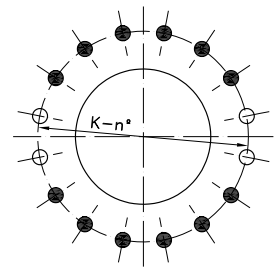
DN 50-65



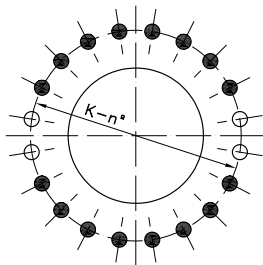
DN 80-200



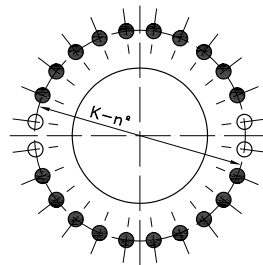
DN 250-300



DN 350-400



DN 450-600



DN 700-800

