MODEL CR

ORBINOX

ROUND BY SQUARE PORT KNIFE GATE VALVE

The CR model knife gate is a wafer valve designed for handling difficult applications. This valve is suitable for using in recycling applications, like junk or sand traps of pulpers, high density cleaners (HDC),... or as silo outlet with solid material. The two piece body with roud inlet and square outlet (larger than the inlet) assures non-jamming.

Sizes: DN 50 to DN 600 (larger diameters on request)

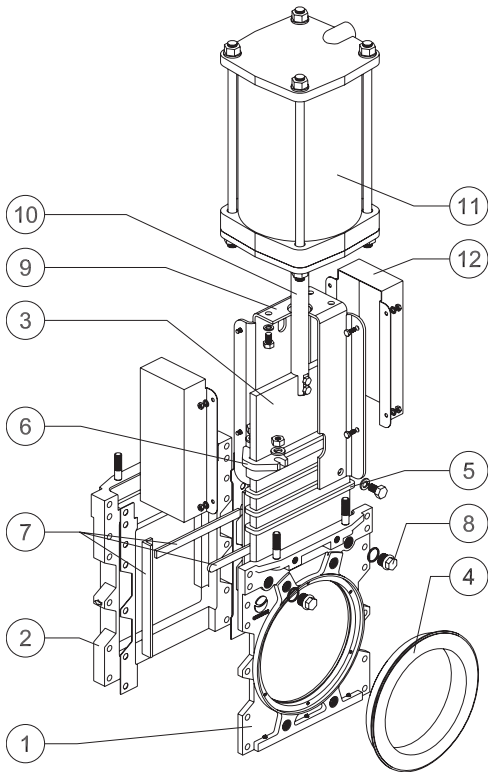
Working pressure: DN 50 to DN 600: 10 kg/cm^2

Standard flange connection: DIN PN 10 and ANSI B16.5 (class 150) (on valve inlet only). Others: under request

Option: For the square outlet, **ORBINOX** can designed a transition piece that passes of square section to round.

Directives: DIR 98/37/CE (MACHINES)
DIR 97/23/CE (PED) Fluid: Group 1(b), 2 (Cat. I, mod. A)
DIR 94/9/CE (ATEX) Group II, Cat. 3: zones 2 and 22

All valves are tested prior to shipping in accordance with the standard developed by the Quality Control Department at ORBINOX.



STANDARD PARTS LIST

Part:	Cast Iron:	Stainless Steel:
1- Body	GG25	CF8M
2- Body	GG25	CF8M
3- Gate	AISI 304	AISI 316
4- Sleeve	Natural Rubber	
4- Packing	Tallowed cotton	PTFE Impreg. Synth. Fibre (Both versions with a EPDM o-ring)
6- Gland Follower	CF8M	
7- Sliders	Brass	
8- Cap	Galv. Steel	AISI 316
9- Yoke	Carbon Steel - Epoxy Coated	
10- Piston Rod	AISI 304	
11- Cylinder	Aluminium	
12- Gate guards	AISI 304	

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DESIGN FEATURES

BODY:
Two-part bolted body, internally machined, with reinforced ribs in larger diameters for extra body strength.
Internal replaceable gate guides allow for smoother gate travel.
The square outlet (larger than the round inlet) avoids build-up of contaminants such as staples, wires,...
The standard bottom clean-out port allows for a quick inspection of the internals of the body.
For the most severe applications, the body has standard flush ports to flush out solids that may interfere with the gate travel.

GATE:
Stainless Steel gate, oversized thickness and polished on both sides, increases its wearing resistance and avoids damage to the seat. This design also allows to perfectly cut through the fluid.
The gate made be made of materials of a higher hardness on request, in order to resist more demanding service conditions or pressure rating.

SEAT / NATURAL RUBBER SLEEVE
The seat is made of a highly resistant, long-lasting sleeve, made of elastomer with a stainless steel core.
This design allows for easy sleeve replacement and avoids gasket installation between the flange and the valve.

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

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.
Reinforced design is standard starting from DN 200.

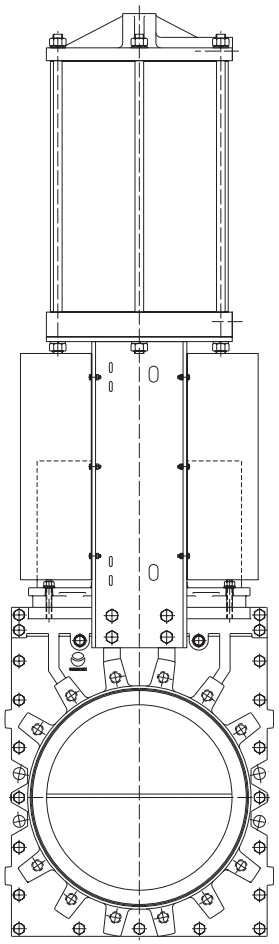
EPOXY COATING:
The epoxy coating on all **ORBINOX** cast iron and carbon steel valve bodies and components is electrostatically applied making the valves to be corrosion resistant with a high quality finished surface.
The **ORBINOX** standard colour is RAL-5015 blue.

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.

OTHER OPTIONS

Other marerials of construction:
Special alloys such as AISI 317, 254SMO, Hastelloys, Titanium,...

Fabricated valves:
Orbinox is equipped for in house fabrication of special valves.
Depending on the design, diameter, pressures, construction material,...



SURFACE TREATMENTS

Valve components can be protected or coated for a longer life expectancy, depending on the application and the service conditions.

At **ORBINOX** we can offer treatments and coatings for the valve components to improve the properties against **abrasion** (Stellite, Polyurethane...), **corrosion** (Halar, Rilsan, Galvanised...) and **adherence** (Polishing, PTFE...).

We recommend to consult our technical department.

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ACTUATOR TYPES

Manual:

Handwheel (rising & non-rising stem)
Chainwheel
Lever
Bevel Gear
Others (square nut...)

Automatic:

Double Acting Pneumatic
Electric
Single Acting Pneumatic
Hydraulic

All actuators supplied by ORBINOX are interchangeable.

FAIL SAFE SYSTEMS

Used on pneumatic actuated valves.

SINGLE ACTING / SPRING RETURN

Available up to DN 100

Options:
- Fail open
- Fail closed

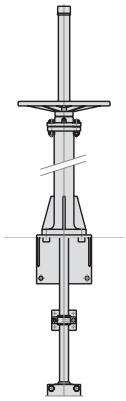
SINGLE ACTING / VOLUME TANK

Available for all sizes (DN>150)

Options:
- Pneumatic Failsafe
- Pneumatic or Electric Failsafe

ACCESSORIES

- Mechanical Stops
- Locking device
- Manual override
- Solenoid valves
- Positioners
- Limit Switches
- Proximity Switches
- Floor stands
- Stem extensions



Wide range of valve extensions available.

For further information about fail safe systems and valve extensions, please see EX chapter.

We recommend consultation with our technical department.

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TEMPERATURE CHART

SEAT / SLEEVES

Material	Max.Temp.(°C)	Applications
Natural Rubber	75	General

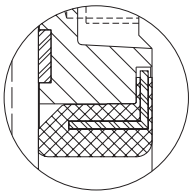
All of them are reinforced with a stainless steel core.
More details and other materials under request.

PACKING

Material	Max. Temp. (°C)	pH
Tallowed cotton (AH)	50	6 - 8
Dry cotton (AS)	50	6 - 8
PTFE impregn. synth. fibre (ST)	240	2 - 13
Braided PTFE (TH)	260	0 - 14

NOTE: all types include an elastomere O-ring (same material as seal), excl. TH

SEAT TYPE



NATURAL RUBBER SLEEVE

The sealing of the **CR** valve is achieved through a high resistance elastomer, which improves the watertightness at both the flange and closing area. The sleeve has a stainless core with very good resistance to pressure and working conditions.

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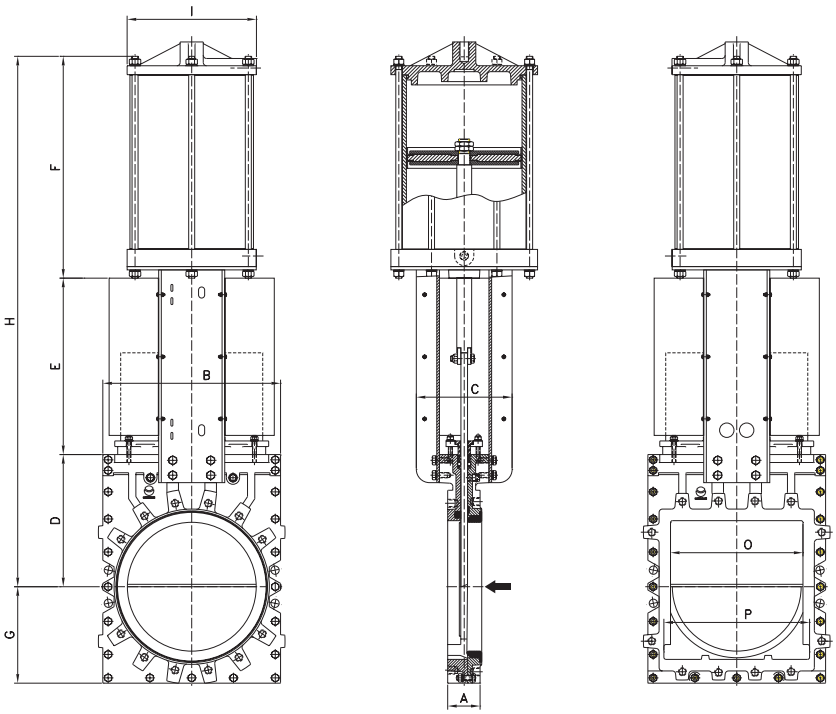
DOUBLE ACTING PNEUMATIC CYLINDER

- The standard pneumatic actuator (double acting on-off cylinder) consists of:
  - Aluminium jacket and covers
  - Stainless Steel (AISI 304) piston rod
  - Nitrile coated steel piston
- Available in DN 50 to DN 600
- Supply Pressure:
  minimum 3.5 kg/cm^2 - maximum 10 kg/cm^2
- Reinforced design of support plates (U-type) is standard starting from DN 200.
- Options (on request):
  - Hard anodized jacket and covers
  - Over / Undersized cylinder
  - Stainless Steel jacket and covers
  - Manual override
  - Fail safe system
  - Travel stops
- Instrumentation (on request):
  - Positioners
  - Solenoid valves
  - Flow regulators
  - Air preparation units



DN	A	B	C	D	E	F	G	H	I	O	P	Weight (kg.)	Std.Cyl.	Connect
50	40	152	100	110	129	178	63	417	115	50	59	14	C100/62	1/4" G
80	54	186	100	124	173	205	90	502	115	80	92	20	C100/95	1/4" G
100	54	206	100	140	198	225	110	563	115	100	112	35	C100/115	1/4" G
125	58.5	235	100	175	233	267	123	675	140	125	143	51	C125/143	1/4" G
150	64.5	260	118	185	275	316	130	776	175	150	167	78	C160/168	1/4" G
200	61.5	315	270	205	324	363	160	892	220	200	217	89	C200/220	3/8" G
250	71	371	270	250	407	439	200	1096	277	250	267	100	C250/270	3/8" G
300	80.5	428	270	340	455	492	232	1287	382	300	317	145	C300/320	1/2" G
350	93	500	270	370	517	561	260	1448	382	350	370	204	C300/375	1/2" G
400	103	565	290	400	569	680	292	1649	444	400	420	268	C350/425	3/4" G
500	123	670	290	450	688	792	345	1930	515	500	520	370	C400/525	3/4" G
600	123	780	290	510	788	892	400	2190	515	600	620	507	C400/525	3/4" G

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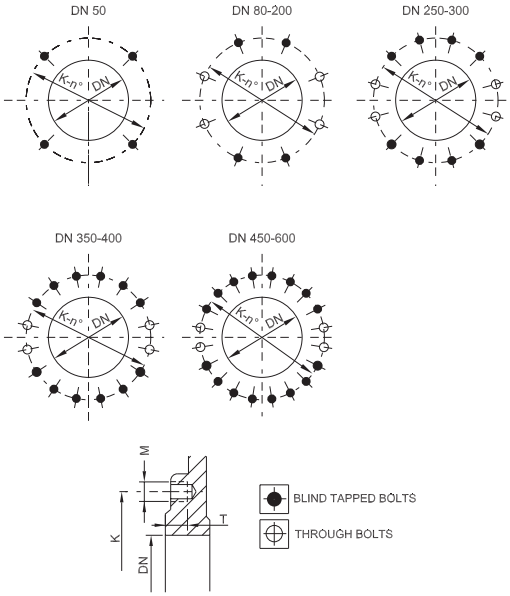
FLANGE AND BOLTING DETAILS

DIN PN10

DN	K	nº	M	T	⌖ ⊕
50	125	4	M-16	10	4 - –
80	160	8	M-16	11	4 - 4
100	180	8	M-16	11	4 - 4
125	210	8	M-16	11.5	4 - 4
150	240	8	M-20	13	4 - 4
200	295	8	M-20	11	4 - 4
250	350	12	M-20	13	8 - 4
300	400	12	M-20	14	8 - 4
350	460	16	M-20	25	12 - 4
400	515	16	M-24	22	12 - 4
450	565	20	M-24	22	16 - 4
500	620	20	M-24	22	16 - 4
600	725	20	M-27	22	16 - 4



ANSI B16.5, class 150

DN	K	nº	M	T	⌖ ⊕
2″	4 3/4″	4	5/8″ UNC	3/8″	4 - –
3″	6″	4	5/8″ UNC	7/16″	4 - –
4″	7 1/2″	8	5/8″ UNC	7/16″	4 - 4
5″	8 1/2″	8	3/4″ UNC	7/16″	4 - 4
6″	9 1/2″	8	3/4″ UNC	1/2″	4 - 4
8″	11 3/4″	8	3/4″ UNC	7/16″	4 - 4
10″	14 1/4″	12	7/8″ UNC	1/2″	8 - 4
12″	17″	12	7/8″ UNC	9/16″	8 - 4
14″	18 3/4″	12	1″ UNC	15/16″	8 - 4
16″	21 1/4″	16	1″ UNC	7/8″	12 - 4
18″	22 3/4″	16	1 1/8″ UNC	7/8″	12 - 4
20″	25″	20	1 1/8″ UNC	7/8″	16 - 4
24″	29 1/2″	20	1 1/4″ UNC	7/8″	16 - 4