

MODEL**CR****SERIES 70**

ROUND BY SQUARE PORT KNIFE GATE VALVE

The CR(SER.70) model knife gate is a wafer valve designed for the use in difficult applications. This valve is generally suitable for recycling applications, such as junk or sand traps of pulpers, high density cleaners (HDC) or as silo outlet with solid material. The two piece body with round inlet and square outlet (larger than the inlet) ensures non-jamming.

Sizes:

DN 6"/100mm to DN 24"/600mm (larger diameters on request)

Working pressure:

DN 6"/100mm to DN 16"/400mm: 100psi/(7 kg/cm²)

DN 20"/500mm to DN 24"/600mm: 60psi/(4 kg/cm²)

Standard flange connection:

DIN PN 10 and ANSI B16.5 (class 150)
(on valve inlet only)

Others: on request

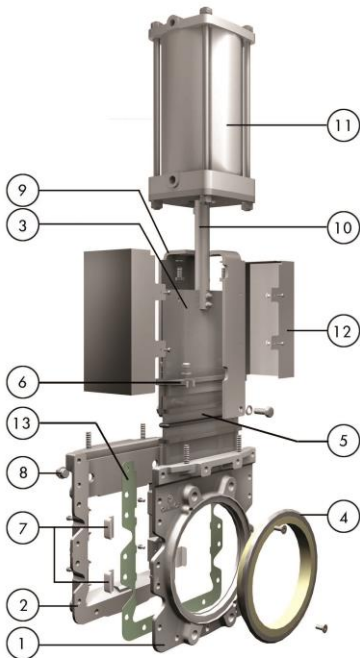
Option: For the square outlet, ORBINOX can also design a square-to-round transition piece

Directives:

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



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:
01- Body	GJL 250 (0.6025)	CF8M (1.4408)
02- Body	GJL 250 (0.6025)	CF8M (1.4408)
03- Gate	2205 (1.4462)	
04- Sleeve	Polyurethane Rubber	
05- Packing	Dynapack (Graphite impregnated PTFE and Aramid yarn combination with an elastomeric core).	
06- Gland Follower	CF8M	
07- Sliders	HWMPE	
08- Cap	Galv. Steel	AISI 316 (1.4404)
09- Yoke	Carbon Steel - Epoxy Coated	
10- Piston Rod	AISI 304 (1.4301)	
11- Cylinder	Aluminum	
12- Gate guards	AISI 304 (1.4301)	
13- Gasket	Aramid fibres	

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DESIGN FEATURES

BODY:

Cast two-part bolted body, internally machined and with reinforcing ribs in larger diameters for extra body strength. The internal replaceable gate guides allow for smoother gate traveling. The square outlet (reinforced with sliders) prevents the build-up of contaminants such as staples, wires, etc.

For the most severe applications, the body includes standard flush ports to flush out the solids that may interfere with the gate traveling.

GATE:

Duplex stainless steel gate, oversized thickness and polished on both sides, increases its wearing resistance and prevents damage to the seat.

This design also allows to perfectly cut through the fluid.

SEAT/POLYURETHANE SLEEVE:

The seat is composed of a highly resistant, long-lasting sleeve, made of polyurethane and 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 graphite impregnated PTFE and Aramid yarn combination with an elastomeric core, together with an easy adjusting and 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 10"/250mm.

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



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OTHER OPTIONS

Other materials of construction:

Special stainless steels and alloys such as AISI 317, 254SMO, Hastelloys, etc.

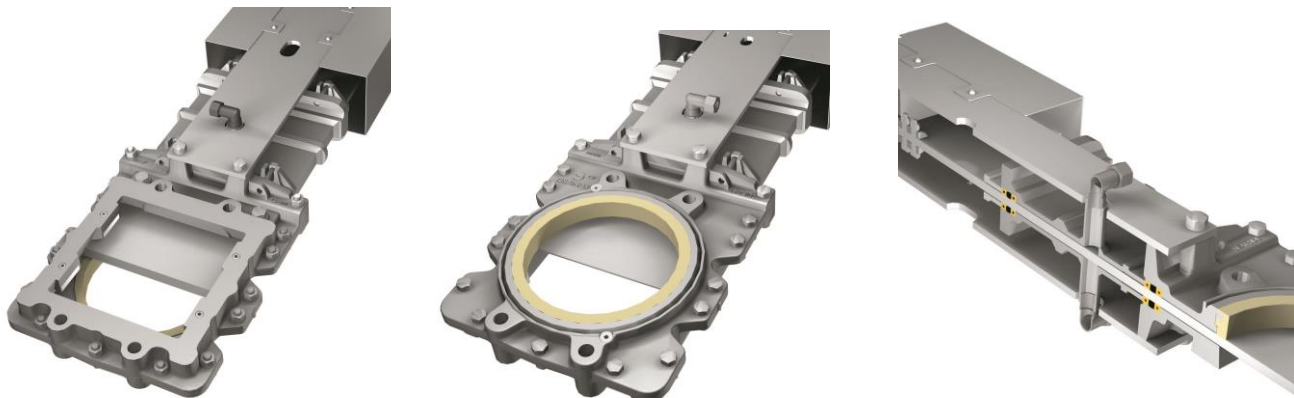
Fabricated valves:

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 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...).



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TEMPERATURE CHART

SEAT / SLEEVES

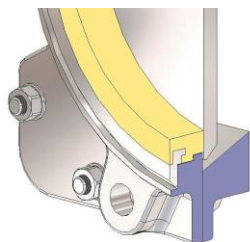
Material	T. max. (°F)	(°C)	Applications
Polyurethane	194	90	General

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

PACKING

Material	Max.T. (°F)	(°C)	pH
Dynapack (DP)	518	270	2-14
PTFE impregn. synth. fibre (ST)	482	250	2-13
Braided PTFE (TH)	500	260	0-14

SEAT TYPE



POLYURETHANE

The sealing of the CR(SER.70) 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.

DOUBLE ACTING PNEUMATIC CYLINDER

- The standard pneumatic actuator (double acting on-off cylinder) consists of:

- $\varnothing \leq 12''/300\text{mm}$: Aluminum barrels
- $\varnothing \geq 14''/350\text{mm}$: Composite barrels
- Aluminium covers
- Stainless Steel (AISI 304) piston rod
- Nitrile coated steel piston

- Available from DN 4''/100mm to DN 24''/600mm

- Supply Pressure: min.50psi (3.5 kg/cm²) - max. 150psi (10 kg/cm²). Actuator designed with 85psi (6 kg/cm²) air supply

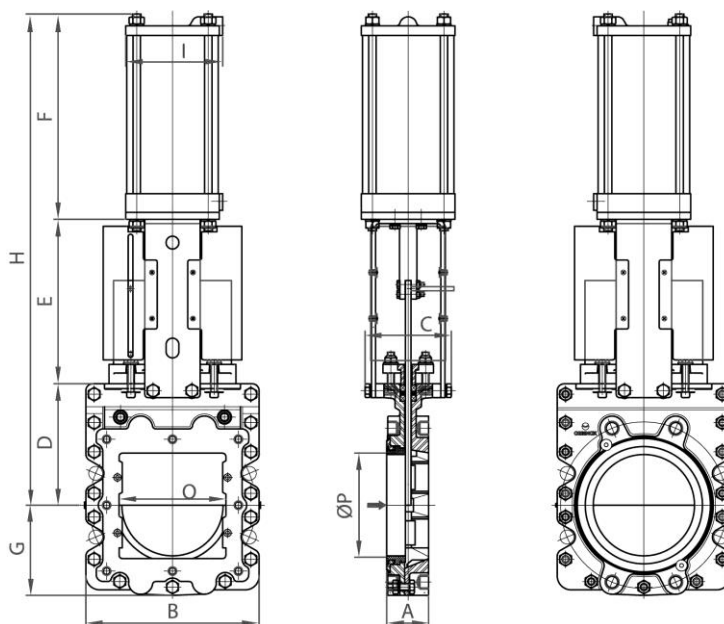
- Reinforced design of support plates (U type) is standard starting from DN 10''/250mm

- Options (on request):

- Hard anodized barrel and covers
- Stainless Steel barrel and covers
- Over/Undersized cylinder
- Manual override
- Fail safe system
- Limit switches

- Instrumentation (on request):

- Positioners
- Solenoid valves
- Flow regulators
- Air preparation units



DN	A	B	C	D	E	F	G	H	I	O	P	Weight (lbs./kg.)	Std.Cyl.	Connect.
4"/100	2.03/52	8.11/206	4/100	5.51/140	7.80/198	8.86/225	4.33/110	22.16/563	4.52/115	3.74/95	3.81/97	77/35	C4"-4.52"/(100/115)	1/4"G
6"/150	2.36/60	9.92/252	4.25/108	6.89/175	9.33/237	11.65/296	5.11/130	27.87/708	5.51/140	5.71/145	5.75/146	172/78	C5"-6.30"/(125/168)	1/4"G
8"/200	2.36/60	12.40/315	4.84/123	8.07/205	12.16/309	14.09/358	6.61/168	34.33/872	6.89/175	7.63/194	7.63/194	196/89	C6.30"-8.66"/(160/220)	3/8"G
10"/250	2.72/69	15.28/388	7.28/185	9.84/250	14.80/376	16.85/428	7.63/194	41.49/1054	8.66/220	9.64/245	9.72/247	220/100	C8"-10.62"/(200/270)	3/8"G
12"/300	3.07/78	16.85/428	7.28/185	11.42/290	16.77/426	18.81/478	9.13/232	47.00/1194	8.66/220	11.57/294	11.73/298	320/145	C8"-12.60"/(200/320)	3/8"G
16"/400	3.50/89	22.04/560	10.63/270	15.43/392	22.60/574	23.58/599	11.49/292	61.61/1565	10.90/277	15.66/398	15.67/398	591/268	C10"-16.73"/(250/425)	3/8"G
20"/500	4.49/114	25.47/647	10.63/270	17.71/450	26.57/675	27.95/730	13.34/339	72.24/1835	13.18/335	19.64/499	18.85/479	816/370	C12"-20.67"/(300/525)	1/2"G
24"/600	4.49/114	29.41/747	10.63/270	20.08/510	30.51/775	31.89/830	15.63/397	82.48/2095	13.18/335	24/600	22.75/578	1118/507	C12"-24.60"/(300/625)	1/2"G

MODEL

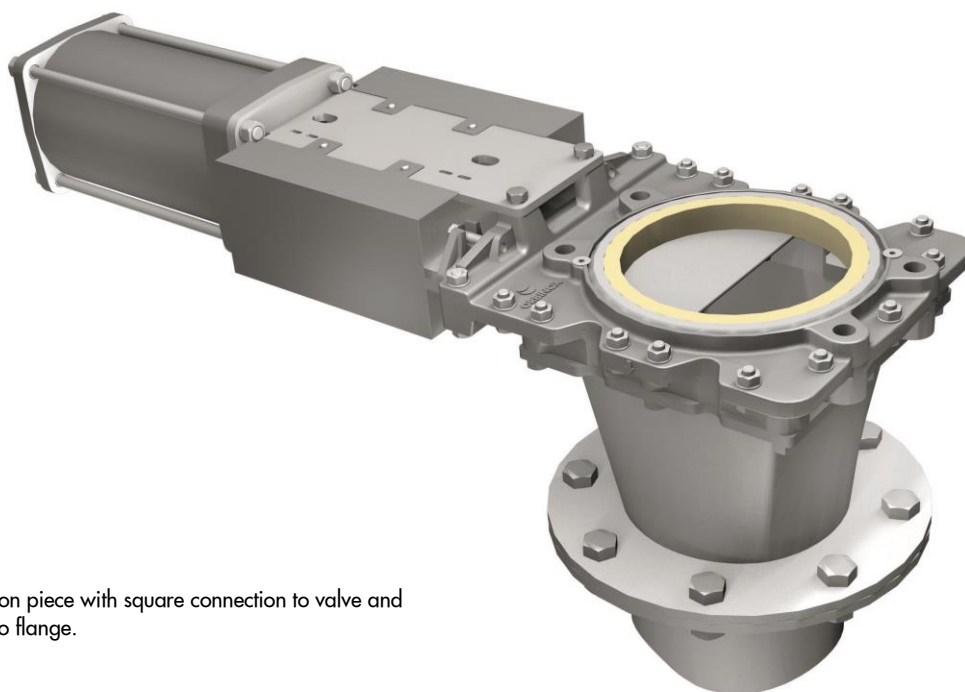
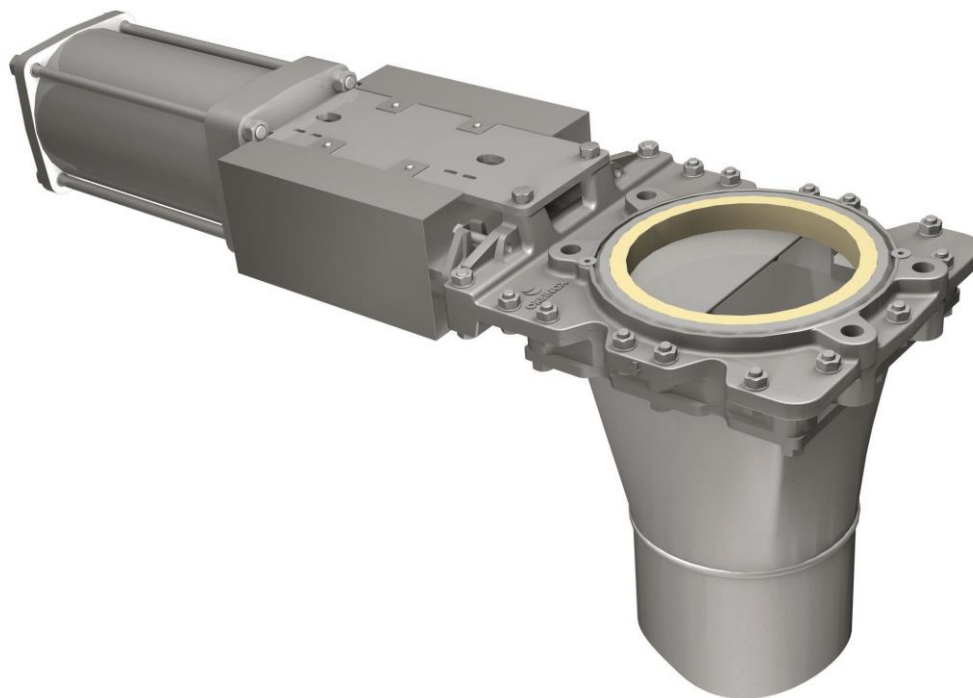
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TRANSITION TYPES

The CR(SER.70) valve can be supplied with a square to round transition piece, that connects the valve square outlet with the round flange or pipe.



Transition piece with square connection to valve and round to flange.

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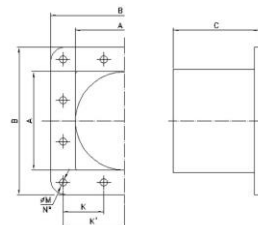
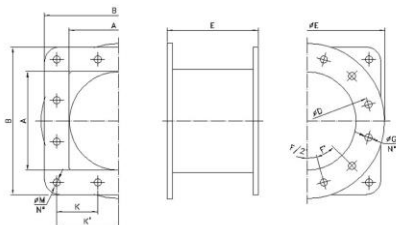
VALVE SOLUTIONS IN MORE THAN 70 COUNTRIES

TRANSITION TYPES

Two transition types:

1.- Flange connection

2.- Welding connection



DN	A	B	K	K'	ØM	Qty	FACE TO FACE	
							C	Transition + valve
4/100	4/100	8.26/210	2.75/70	2.75/70	0.55/14	8	4/100	5.98/152
6/150	6/150	10.23/260	3.74/95	3.74/95	0.55/14	8	6/150	8.26/210
8/200	8/200	12.60/320	4.82/122.5	4.82/122.5	0.55/14	8	8/200	10.24/260
10/250	10/250	16/400	6/150	6/150	0.55/14	8	10/250	12.55/319
12/300	12/300	18.50/470	4.88/124	7.32/186	0.55/14	12	10/250	12.91/328
16/400	16/400	22.83/580	6.06/154	9.09/231	0.70/18	12	10/250	13.34/339
20/500	20/500	24/600	7.36/187	11.04/280	0.70/18	12	12/300	16.30/414
24/600	24/600	28.35/720	6/220	12.99/330	0.78/20	12	12/300	16.30/414

Flange drilling dimensions

ANSI B16.5, class 150

DN	ØD	ØE	F	ØG	Qty
4"	7 1/2"	9	1.77	0.75	8
6"	9 1/2"	11	1.77	0.86	8
8"	11 3/4"	13.5	1.77	0.86	8
10"	14 1/4"	16	1.18	0.86	12
12"	17"	19	1.18	0.86	12
16"	21 1/4"	23.43	0.88	1.10	16
20"	25"	27.55	0.70	1.25	20
24"	29 1/2"	32.09	0.70	1.37	20



DIN PN10

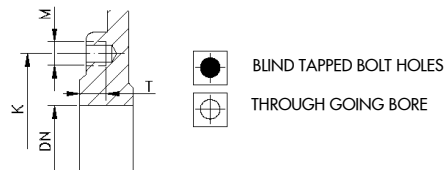
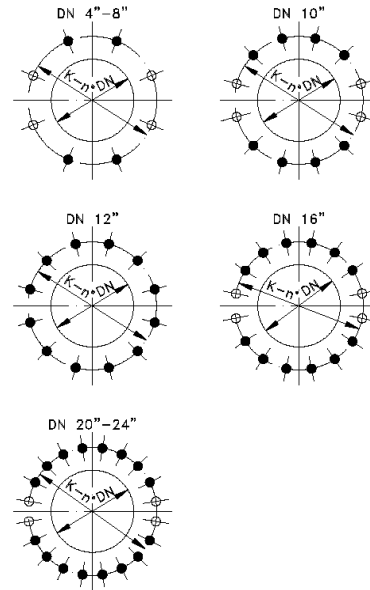
DN	ØD	ØE	F	ØG	Qty
100	180	220	45	18	8
150	240	285	45	22	8
200	295	340	45	22	8
250	350	395	30	22	12
300	400	445	30	22	12
400	515	565	22.5	27	16
500	620	670	18	27	20
600	725	780	18	30	20



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MODEL**CR****SERIES 70****FLANGE AND BOLTING DETAILS****ANSI B16.5, class 150**

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

**EN 1092-2 PN10**

DN	K	n°	M	T	 
100	180	8	M-16	11	4 - 4
150	240	8	M-20	13	4 - 4
200	295	8	M-20	16	4 - 4
250	350	12	M-20	16	8 - 4
300	400	12	M-20	16	12 - 0
400	515	16	M-24	22	12 - 4
500	620	20	M-24	22	16 - 4
600	725	20	M-27	22	16 - 4

