

## DOUBLE GATE KNIFE GATE VALVE

The **SERIES 80** model knife gate is a bi-directional valve widely used in the Pulp and Paper industry (recycling or secondary fiber processing) designed to handle high concentrated or contaminated media. In open position, both gates retract into the body and allow full flow. When closing, the gates push stock and contaminants as staples, wires,... out of the body into the flow.

Stroke time is the half of conventional valves.

All components subject to wear are replaceable.

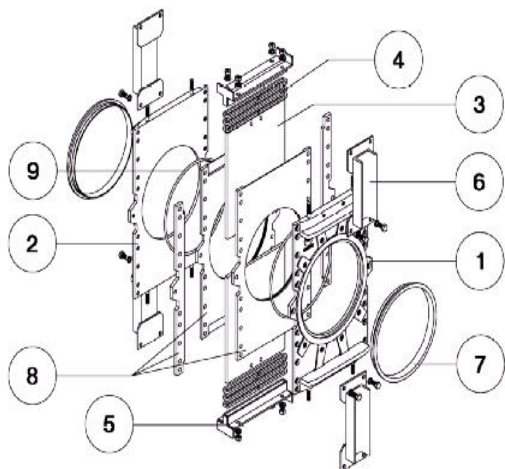
**Sizes:** 4" to 24" (larger diameters on request)

|                          |                           |         |
|--------------------------|---------------------------|---------|
| <b>Working Pressure:</b> | Sizes 4" to 10" : 150 PSI | 150 PSI |
|                          | Sizes 12" to 16" : 85 PSI | 85 PSI  |
|                          | Size 18" : 70 PSI         | 70 PSI  |
|                          | Sizes 20" to 24" : 60 PSI | 60 PSI  |

**Standard Flange Connection:** ANSI B16.5 (class 150) and DIN PN 10

**Note:** Other flange connections are available on request.

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



### STANDARD PARTS LIST

| Part:                    | Carbon Steel:               | Stainless Steel:     |
|--------------------------|-----------------------------|----------------------|
| <b>1 &amp; 2- Body</b>   | A 216 WCB / Fab. CS         | CF8M / Fab. AISI 316 |
| <b>3- Gate</b>           | AISI 304                    | AISI 316             |
| <b>4- Packing</b>        | AH                          | NT                   |
| <b>5- Gland Follower</b> | Carbon Steel                | AISI 316             |
| <b>6- Support Plate</b>  | Carbon Steel - Epoxy Coated |                      |
| <b>7- Seat Ring</b>      | CF8M                        |                      |
| <b>8- Body Liner</b>     | UHMW polyethylene           |                      |
| <b>9- O-ring</b>         | NBR                         |                      |



## DESIGN FEATURES

### BODY:

- Cast or fabricated two-part bolted body, internally machined, with reinforced ribs in larger diameters for extra body strength.
- Body interior is lined with UHMW Polyethylene acting as a bearing surface for the two gates to travel on.
- Full port design for greater flow capacity and minimal pressure drop.

### GATE:

- Standard oversized stainless steel gates.
- Gates are polished on both sides for a greater seal between the packing and the seat.
- Special abrasion resistant materials can be used on request.

### PACKING CHAMBER:

- Double stuffing box with several lines of braided fiber 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 & SUPPORT PLATES:

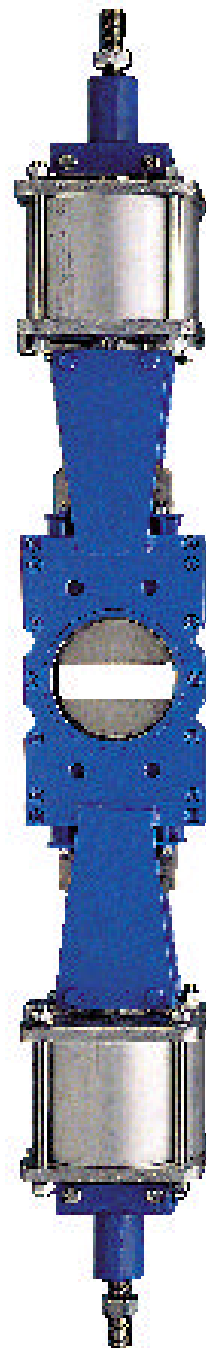
- EPOXY coated steel (stainless steel available on request).
- Compact design makes it extremely robust even in the most severe conditions.
- Reinforced design is standard starting from 8" size.

### EPOXY COATING:

- The electrostatic applied epoxy coating on all ORBINOX cast iron and carbon steel valve bodies and components make the valves corrosion resistant.

### GATE SAFETY PROTECTION:

- Gate guards are available upon request for areas where safety is a concern.
- The design feature prevents any objects from getting caught accidentally while the gate is moving.



## OTHER OPTIONS

### OTHER MATERIALS OF CONSTRUCTION AVAILABLE:

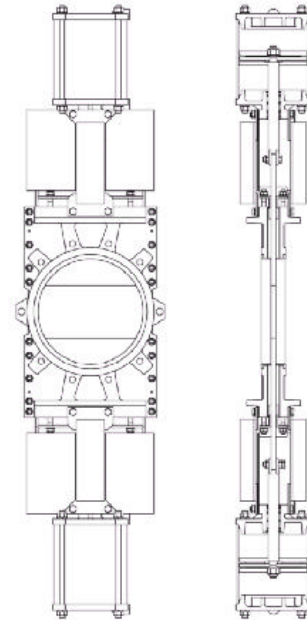
- Special alloys such as AISI 317, 254SMO, Hastelloys, Titanium, etc.

### FABRICATED VALVES:

- Orbinox is equipped for in house fabrication of special valves.
- Design is based on application, diameter, pressures, material of construction, etc..

### SQUARE / RECTANGULAR PORT:

- Modifications on port design are possible to suit customer's needs.



| SEAT  |                |                                     | PACKING   |                |        |
|---|----------------|-------------------------------------|---|----------------|--------|
| Material                                    | Max. Temp (°F) | Applications                        | Material  | Max. Temp (°F) | pH     |
| Metal / Metal<br>Polyethylene liner         | 75             | Standard                            | Tallowed cotton (AH)  | 50             | 6 - 8  |
| <b>On request</b>                           |                |                                     | PTFE impregn. Natural fiber (NT)  | 120            | 4 - 12 |
| Metal / Metal<br>PTFE liner                 | 250            | High temp.<br>Corrosion resistance. | PTFE impregn. Synth. fiber (ST)   | 240            | 2 - 13 |
|   |                |                                     | Braided PTFE (TH)   | 260            | 0 - 14 |
| More details and other materials on request |                |                                     | NOTE: All types includes an elastomer O-ring (same material seal), excluding TH |                |        |

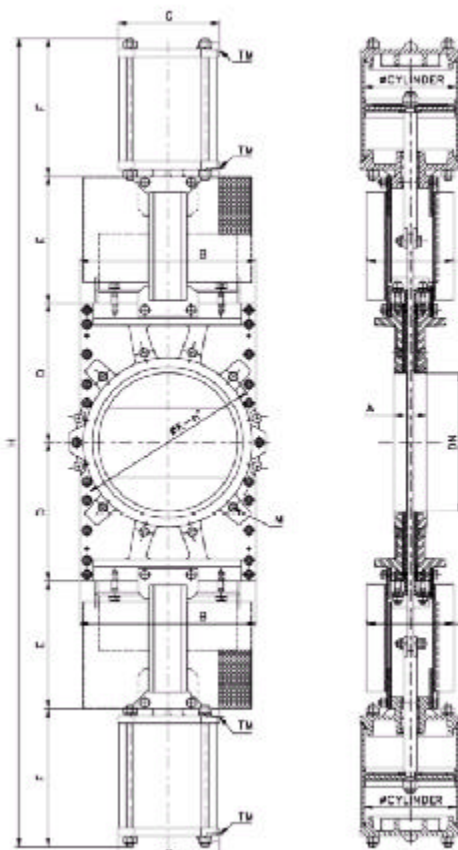
## SEAT TYPE

- Two replaceable reinforced stainless steel rings protect the seat.
- There is no elastomer seal.
- The four-piece liner of the body provides gate support to all sides giving a good valve seal.

## DOUBLE ACTING PNEUMATIC CYLINDER

- The standard pneumatic actuator (double acting on-off cylinder) consists of:
  - Carbon steel construction
  - Stainless (AISI 304) Piston Rod
  - Nitrile coated Steel Piston
- Valve sizes available in 4" to 24", larger on request.
- Supply Pressure: minimum 40 PSI - maximum 150 PSI
- **All valves installed in a horizontal position, pneumatic actuators must be supported.**
- NOTE: Depending on the application and service conditions, Orbinox can supply larger bore size cylinders. The table below shows the most commonly used bore sizes. Please consult our technical department for maximum differential pressure and minimum air supply for all pneumatic operated knife gate valves.
- Instrumentation and options on request:

For other instrumentation and options, please consult our technical department.



| SIZE | A   | B    | C    | D    | E    | F    | G    | H     | Weight (lbs) | Standard Cyl. | Connect. |
|------|-----|------|------|------|------|------|------|-------|--------------|---------------|----------|
| 4"   | 2.0 | 7.1  | 3.6  | 4.6  | 5.7  | 5.9  | 4.5  | 32.4  | 106          | C100/55       | 1/4" NPT |
| 5"   | 2.0 | 8.3  | 4.1  | 5.7  | 7.1  | 7.4  | 5.5  | 40.5  | 123          | C125/67,5     | 1/4" NPT |
| 6"   | 2.4 | 8.7  | 4.1  | 6.9  | 8.5  | 8.4  | 5.5  | 47.7  | 147          | C125/80       | 1/4" NPT |
| 8"   | 2.4 | 11.0 | 7.4  | 8.3  | 8.2  | 9.4  | 6.9  | 51.7  | 176          | C160/105      | 1/4" NPT |
| 10"  | 2.8 | 13.0 | 7.4  | 10.4 | 9.8  | 10.7 | 8.7  | 62.0  | 198          | C200/130      | 3/8" NPT |
| 12"  | 2.8 | 15.0 | 7.4  | 11.8 | 10.8 | 11.7 | 8.7  | 68.7  | 352          | C200/155      | 3/8" NPT |
| 14"  | 3.8 | 18.1 | 11.4 | 13.1 | 12.5 | 13.8 | 10.9 | 78.8  | 561          | C250/185      | 3/8" NPT |
| 16"  | 3.9 | 20.1 | 11.4 | 13.8 | 13.7 | 14.8 | 10.9 | 84.5  | 748          | C250/210      | 3/8" NPT |
| 18"  | 4.2 | 22.2 | 11.4 | 15.9 | 14.4 | 16.1 | 15.0 | 93.1  | 891          | C300/235      | 1/2" NPT |
| 20"  | 4.3 | 24.0 | 11.4 | 17.7 | 16.1 | 17.9 | 15.0 | 103.3 | 1078         | C300/260      | 1/2" NPT |
| 24"  | 4.3 | 28.3 | 11.4 | 21.7 | 18.0 | 19.8 | 15.0 | 119.1 | 1276         | C300/310      | 1/2" NPT |

ORBINOX reserves the right to change specifications without notice. OBX 1/01 4TH EDITION



ORBINOX SPAIN, Políg. Ind. Anoeta – Apdo 80 – 20400 Tolosa, Spain Tel: 943-69 80 30 Fax: 943-65 30 66 e-mail: orbinox@orbinox.com



ORBINOX CANADA, 2050 Dagenais West, Laval, Quebec, H7L 5W2 Tel: 450-622-8775 Fax: 450-622-6831 e-mail: orbe@orbevalve.com / www.orbevalve.com



ORBINOX USA, 311 North Front Street, Amory, Mississippi 38821 Tel: 662-256-2227 Fax: 662-256-2119 e-mail: orbe@orbevalve.com / www.orbevalve.com

**FLANGE AND BOLTING DETAILS**

**DIN PN10**

| DN  | K   | n° | M    | T  |        |
|-----|-----|----|------|----|--------|
| 100 | 180 | 8  | M-16 | 8  | 4 - 4  |
| 125 | 210 | 8  | M-16 | 8  | 4 - 4  |
| 150 | 240 | 8  | M-20 | 10 | 4 - 4  |
| 200 | 295 | 8  | M-20 | 10 | 4 - 4  |
| 250 | 350 | 12 | M-20 | 11 | 8 - 4  |
| 300 | 400 | 12 | M-20 | 11 | 8 - 4  |
| 350 | 460 | 16 | M-20 | 18 | 12 - 4 |
| 400 | 515 | 16 | M-24 | 20 | 12 - 4 |
| 450 | 565 | 20 | M-24 | 20 | 16 - 4 |
| 500 | 620 | 20 | M-24 | 20 | 16 - 4 |
| 600 | 725 | 20 | M-27 | 20 | 16 - 4 |

**ANSI B16.5, class 150**

| DN  | K       | n° | M          | T      |        |
|-----|---------|----|------------|--------|--------|
| 4"  | 7 1/2"  | 8  | 5/8" UNC   | 5/16"  | 4 - 4  |
| 5"  | 8 1/2"  | 8  | 3/4" UNC   | 5/16"  | 4 - 4  |
| 6"  | 9 1/2"  | 8  | 3/4" UNC   | 3/8"   | 4 - 4  |
| 8"  | 11 3/4" | 8  | 3/4" UNC   | 3/8"   | 4 - 4  |
| 10" | 14 1/4" | 12 | 7/8" UNC   | 7/16"  | 8 - 4  |
| 12" | 17"     | 12 | 7/8" UNC   | 7/16"  | 8 - 4  |
| 14" | 18 3/4" | 12 | 1" UNC     | 11/16" | 8 - 4  |
| 16" | 21 1/4" | 16 | 1" UNC     | 13/16" | 12 - 4 |
| 18" | 22 3/4" | 16 | 1 1/8" UNC | 13/16" | 12 - 4 |
| 20" | 25"     | 20 | 1 1/8" UNC | 13/16" | 16 - 4 |
| 24" | 29 1/2" | 20 | 1 1/4" UNC | 13/16" | 16 - 4 |

