

**MODEL****DT**

## DOUBLE GATE KNIFE GATE VALVE

The DT model knife gate valve is a bi-directional valve widely used in the Pulp and Paper industry (paper recycling) and especially designed to handle high concentrated or contaminated media. In the open position, both gates are retracted into the body, assuring full flow. When the gates close, they push stock and contaminants as staples, wires, etc., out of the body and back into the flow. As a result of this double gate design, the stroke time of these valves is half of that of the conventional valves. All components subject to wear can be easily replaced.

**Sizes:**

DN 100 to DN 600 (larger diameters on request)

**Working pressure:**

DN 100 to DN 250	10 kg/cm <sup>2</sup>
DN 300 to DN 400	6 kg/cm <sup>2</sup>
DN 450	5 kg/cm <sup>2</sup>
DN 500 to DN 600	4 kg/cm <sup>2</sup>

**Standard flange connection:**

DIN PN 10 and ANSI B16.5 (class 150)

Note: other flange connections are available on request

**Directives:**

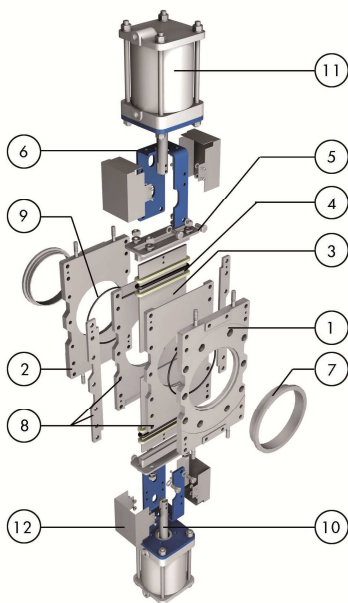
2006/42/CE (MACHINES)

97/23/CE (PED) Fluid: Group 1(b), 2 (Cat. I, mod. A)

94/9/CE (ATEX)



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



### STANDARD PARTS LIST

Part:	Carbon Steel:	Stainless steel:
1- Body	Carbon steel	AISI 316
2- Counterbody	Carbon steel	AISI 316
3- Gate	AISI 304	AISI 316
4- Packing	PTFE Impreg. Synth. Fibre (both with an EPDM o-ring)	
5- Gland Follower	Carbon Steel	AISI 316
6- Yoke	Carbon Steel-Epoxy Coated	
7- Seat rings	CF8M	
8- Body Liner	HMW Polyethylene	
9- O-ring	Nitrile	

## DESIGN FEATURES

### **BODY:**

Cast or fabricated two-part bolted body, internally machined, with reinforcing ribs in larger diameters for extra body strength. The body is internally lined with HMW Polyethylene that provides an optimum guiding and sliding surface for the two gates when traveling. For additional safety, the port includes two stainless steel reinforced rings. Full port design for higher flow capacity and minimal pressure drop. When the valve is in the open position, both gates are retracted into the body, assuring full flow. When the gates close, they push back into the media the fluid and contaminants that might have accumulated within the body.

### **GATE:**

Oversized stainless steel gates. Gates are polished on both sides to avoid jamming and to ensure a greater seal between the gate with both packing and seat. Special abrasion resistant materials and/or thickness can be used on request.

### **PACKING:**

Double stuffing box with several layers of braided PTFE impregnated synthetic 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.

### **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 "U" type design is standard starting from DN 250.

### **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 PROTECTIONS:**

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



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## OTHER OPTIONS

### Other materials of constructions:

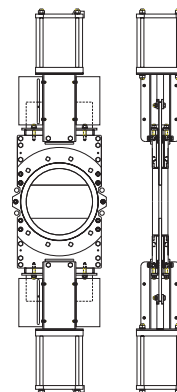
Special alloys such as AISI 317 (1.4449), 254SMO (1.4547), Hastelloys, Titanium, etc.

### Fabricated valves:

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

### Square/rectangular port:

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

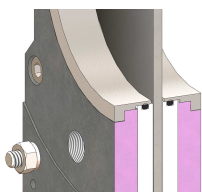


## TEMPERATURE CHART

SEAT			PACKING		
Material	Max. Temp (°C)	Applications	Material	Max. Temp (°C)	pH
Metal / Metal PE liner	75	General	PTFE impregn. synth. fibre (ST)	240	2-13
On request:			Braided PTFE (TH)	600	0-14
Metal / Metal PTFE liner	250	High temp./Corrosion resistance	NOTE: all types include an elastomere O-ring (same material as seal), excluding TH		

More details and other materials under request

## SEAT TYPE



### METAL / METAL

Used for applications with high temperature or applications where tight shutoff is not required. Two replaceable reinforced stainless steel rings protect the body. There is no elastomer seal. The four-piece liner (HMWPE as standard, PTFE or Nylon also available) of the body provides gate support to all sides ensuring gate guiding and sliding, as well as a good valve seal

## ATEX



Please contact our ORBINOX representative for information and availability. Some considerations:

- Hand operated DT valves have been subject to an ignition risk assessment according to the DIN EN 13463: 1-5 standard and they are out the scope of application of ATEX Directive. Therefore hand operated valves are suitable for ALL ATEX zones.
- Electrically, pneumatically and hydraulically operated valves must be subject to a conformity assessment of their own and also of the whole unit valve actuator to get EC Type Approval to Directive 94/9.

Please contact our technical department

**DOUBLE ACTING PNEUMATIC CYLINDERS**

• The standard pneumatic actuator (double acting on-off cylinder)

consists of:

- DN ≤ 250: Aluminium barrels
- DN ≥ 300: Composite barrels
- Aluminium covers
- Stainless Steel (AISI 304) piston rod
- Nitrile coated steel piston

• Available from DN 100 to DN 600

• Supply Pressure: min. 3,5 kg/cm<sup>2</sup> - max. 10 kg/cm<sup>2</sup>. Actuator designed with 6 kg/cm<sup>2</sup> air supply

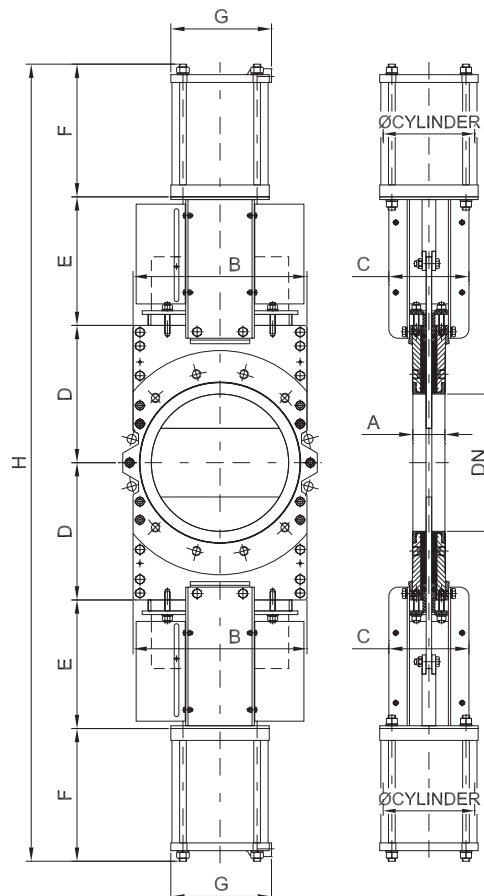
• Reinforced design of support plates (U-type) is standard starting from DN 250

• Options (on request):

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

• Instrumentation (on request):



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

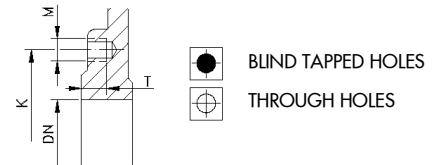
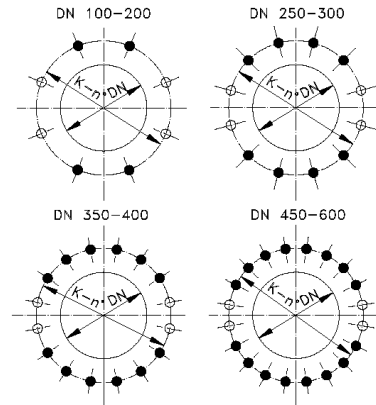


DN	A	B	C	D	E	F	G	H	Weight (kg.)	Standard Cyl	Connect
100	50	162	100	140	132	169	115	882	48	C100/52	1/4" G
125	50	210	100	146	142	179	140	934	56	C125/65	1/4" G
150	60	215	100	175	154	206	140	1070	67	C125/78	1/4" G
200	60	265	165	210	204	241	175	1310	80	C160/103	1/4" G
250	70	330	270	265	231	285	220	1562	90	C200/128	3/8" G
300	70	380	270	300	256	310	220	1732	160	C200/153	3/8" G
350	96	450	270	325	325	340	277	1980	255	C250/180	3/8" G
400	100	510	270	350	355	365	277	2140	340	C250/205	3/8" G
450	106	565	270	405	379	401	382	2370	405	C300/230	1/2" G
500	110	610	270	450	420	445	382	2630	490	C300/255	1/2" G
600	110	715	270	500	470	495	382	2930	580	C300/305	1/2" G



**FLANGE AND BOLTING DETAILS**

**EN 1092-2 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

