

## KNIFE GATE VALVE DUCTILE IRON BODY

### TECHNICAL PASSPORT

#### KNIFE GATE VALVE WITH DOUBLE ACTING PNEUMATIC ACTUATOR DUCTILE IRON BODY - BETWEEN FLANGES PN10

VG 4400-03

#### APPLICATION

The knife gate valve is particularly suitable for the most difficult applications.

**Area of use:** water treatment networks, pulp and paper industry, chemical plants, winemaking, cement works, pneumatic transport, storage.



**Fluids:** water, sewage, pulp, pasty products, powdery, granular, fibrous, abrasive and crystallizing.

#### GENERAL CHARACTERISTICS

**Range:** from DN50 to DN1200.

- Knife Gate Valve on/off or regulation with rising stem.
- Molded monobloc body
- Unidirectional water tightness: Flow direction indicated on the body with an arrow.
- Installation between flanges ISO PN10.
- Small retention zone.
- Gate with a beveled cutting edge guided in the body with little backlash.
- Guaranteed closure, without risk of blockage.
- Standard polished gate, soft contact with the gaskets.
- Very resistant ductile iron packing flange avoids risks of breaks.
- Operating force reduced thanks to the elasticity of the gaskets.
- Pre-formed profiled sheet metal support plates from DN50 to DN300 for accessory or kit mounting.
- Full flow when fully opened, ensuring a high flow rate with low head loss.
- Flow regulation possible for pasty or abrasive fluids with installation of a deflector.



#### STANDARDS

|              |                                                                                                                            |                 |                   |                           |                   |                    |
|--------------|----------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|---------------------------|-------------------|--------------------|
| Design       | Manufacture according to the requirements of the European directive n° 2014/68/UE «Equipment under pressure» : modulate H. |                 |                   |                           |                   |                    |
|              | In option: product conform to European directive ATEX «ATmosphère EXplosive» n° 2014/34/UE.                                |                 |                   |                           |                   |                    |
| Face to face | Face to face dimension according to TECOFI standard                                                                        |                 |                   |                           |                   |                    |
| Connection   | Mounting between flanges in accordance with EN1092-2 and DIN 2501 : ISO PN10                                               |                 |                   |                           |                   |                    |
| Tests        | Pressure test according to standards EN12266-1, DIN 3230, BS 5154 and ISO 5208.                                            |                 |                   |                           |                   |                    |
|              | DN                                                                                                                         | Body            | Seat              | DN                        | Body              | Seat               |
|              | DN50-250 :<br>DN500-600:                                                                                                   | 15 bar<br>6 bar | 11 bar<br>4.4 bar | DN300-450:<br>DN700-1200: | 10.5 bar<br>3 bar | 7.7 bar<br>2.2 bar |

#### PRODUCT APPROVALS



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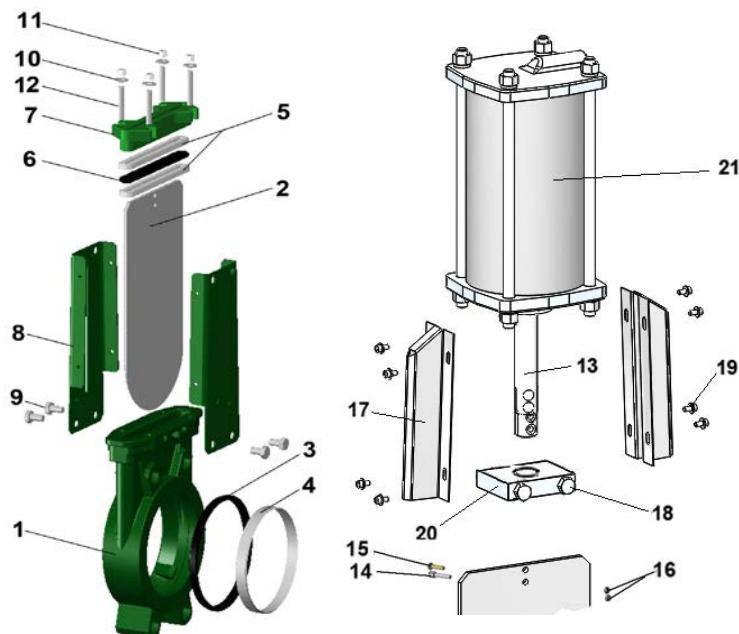
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#### CONSTRUCTION

The valves are coated with epoxy paint to protect them against corrosion

| Component         | Coating                              |
|-------------------|--------------------------------------|
| Body (1)          | Epoxy powder RAL 6005<br>150 microns |
| Support plate (8) | Liquid epoxy RAL 6005<br>70 microns  |
| Packing gland (7) |                                      |



| Pos. | Q-ty | Description        | Material                     | Equivalences |                  |                |
|------|------|--------------------|------------------------------|--------------|------------------|----------------|
|      |      |                    |                              | DIN          | ASTM             | BS             |
| 1    | 1    | Body               | Ductile iron EN-GJS-500-7    | GGG 50       | A536 65-70-50-05 | 1563 EN-JS1050 |
| 2    | 1    | Gate               | Stainless steel X5CrNi 18-10 | X5CrNi 18 10 | A 182 AISI 304   | 1449-2 304 S15 |
| 3    | 1    | Seat gasket (1)    | NBR                          |              |                  | NBR            |
| 4    | 1    | Support ring (1)   | Stainless steel X5CrNi 18-10 | X5CrNi 18 10 | A 182 AISI 304   | 1449-2 304 S15 |
| 5    | 2    | Packing            | PTFE                         |              |                  |                |
| 6    | 1    | O-Ring             | NBR                          |              |                  | NBR            |
| 7    | 1    | Packing gland      | Ductile iron EN-GJS-400-15   | GGG 40       | A536 65-45-12    | 1563 EN-JS1030 |
| 8    | 2    | Support plate      | Steel                        |              |                  |                |
| 9    | 4*   | Screw              | Stainless steel A2-70        |              |                  |                |
| 10   | 4*   | washer             | Stainless steel A2-70        |              |                  |                |
| 11   | 4*   | Nut                | Stainless steel A2-70        |              |                  |                |
| 12   | 4*   | Tie rod            | Stainless steel A2-70        |              |                  |                |
| 13   | 1    | Stem               | Stainless steel 13% Cr       | X12CR13      | AISI 410         |                |
| 14   | 1    | Detection screw    | Stainless steel X5CrNi 18-10 | X5CrNi 18 10 | A 182 AISI 304   | 1449-2 304 S15 |
| 15   | 1    | Screw              | Stainless steel A2-70        |              |                  |                |
| 16   | 2    | Nut                | Stainless steel X5CrNi 18-10 | X5CrNi 18 10 | A 182 AISI 304   | 1449-2 304 S15 |
| 17   | 1    | Protection plate   | Stainless steel X5CrNi 18-10 | X5CrNi 18 10 | A 182 AISI 304   | 1449-2 304 S15 |
| 18   | 4    | Screw              | Stainless steel A2-70        |              |                  |                |
| 19   | 1    | Screw              | Stainless steel A2-70        |              |                  |                |
| 20   | 1    | Support nut        | Zinc plated steel            |              |                  |                |
| 21   | 1    | Pneumatic actuator | Aluminium                    |              |                  |                |

\* - 8 for DN350-400; - 12 for DN450-900 and 16 for DN1000-1200 (1) - Parts missing on metal/metal sealing

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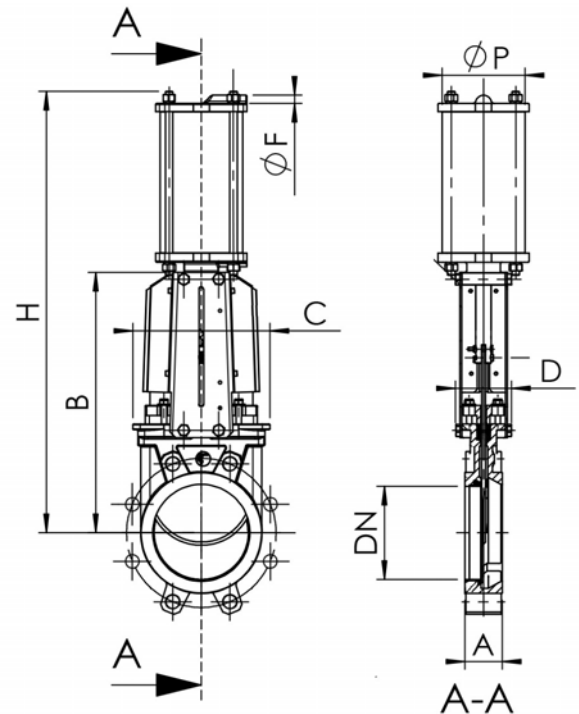
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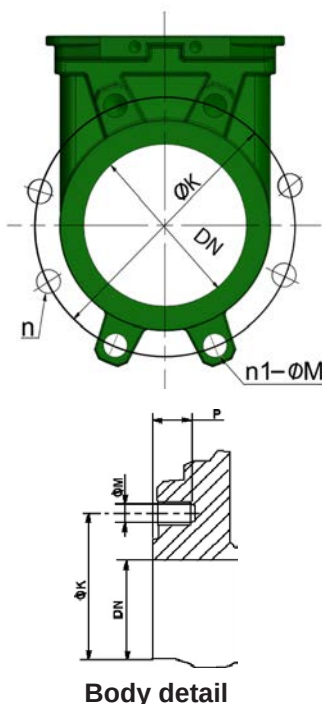
#### DIMENSIONS

| DN   |        | A   | B    | C    | D   | Ø F  | Ø P | H    | Weight (kg) |
|------|--------|-----|------|------|-----|------|-----|------|-------------|
| mm   | inch   |     |      |      |     |      |     |      |             |
| 50   | 2"     | 40  | 240  | 124  | 83  | 1/4" | 80  | 412  | 7,5         |
| 65   | 2 1/2" | 40  | 265  | 139  | 83  | 1/4" | 80  | 458  | 7.8         |
| 80   | 3"     | 50  | 29*0 | 154  | 83  | 1/4" | 80  | 502  | 8.4         |
| 100  | 4"     | 50  | 335  | 174  | 83  | 1/4" | 100 | 562  | 12.5        |
| 125  | 5"     | 50  | 373  | 189  | 93  | 1/4" | 125 | 642  | 16.4        |
| 150  | 6"     | 60  | 424  | 220  | 93  | 1/4" | 125 | 718  | 20.5        |
| 200  | 8"     | 60  | 533  | 275  | 108 | 1/4" | 160 | 882  | 35.8        |
| 250  | 10"    | 70  | 625  | 326  | 108 | 1/4" | 200 | 1044 | 52          |
| 300  | 12"    | 70  | 732  | 380  | 108 | 1/4" | 200 | 1164 | 72          |
| 350  | 14"    | 96  | 835  | 438  | 290 | 3/8" | 250 | 1362 | 129         |
| 400  | 16"    | 100 | 945  | 494  | 290 | 3/8" | 250 | 1542 | 144         |
| 450  | 18"    | 106 | 1040 | 547  | 290 | 3/8" | 250 | 1677 | 177         |
| 500  | 20"    | 110 | 1150 | 613  | 290 | 1/2" | 320 | 1815 | 268         |
| 600  | 24"    | 110 | 1354 | 716  | 290 | 1/2" | 320 | 2130 | 351         |
| 700  | 28"    | 110 | 1540 | 835  | 320 | 1/2" | 426 | 2488 | 556         |
| 800  | 32"    | 110 | 1750 | 972  | 320 | 1/2" | 426 | 2798 | 679         |
| 900  | 36"    | 110 | 1990 | 1041 | 320 | 1/2" | 538 | 3162 | 804         |
| 1000 | 40"    | 110 | 2195 | 1152 | 320 | 1/2" | 538 | 3452 | 1053        |
| 1200 | 48"    | 150 | 2390 | 1255 | 400 | 1/2" | 538 | 4048 | -           |

Dimension A - face to face according to TECOFI standard



#### MOUNTING



Body detail

| DN   |        | Maximum working (bar) | n  | n1-ØM  | P  | ØK   |
|------|--------|-----------------------|----|--------|----|------|
| mm   | inch   |                       |    |        |    |      |
| 50   | 2"     | 10                    | 4  | 4xM16  | 8  | 125  |
| 65   | 2 1/2" | 10                    | 4  | 4xM16  | 8  | 145  |
| 80   | 3"     | 10                    | 8  | 4xM16  | 9  | 160  |
| 100  | 4"     | 10                    | 8  | 4xM16  | 9  | 180  |
| 125  | 5"     | 10                    | 8  | 4xM16  | 9  | 210  |
| 150  | 6"     | 10                    | 8  | 4xM20  | 10 | 240  |
| 200  | 8"     | 10                    | 8  | 4xM20  | 12 | 295  |
| 250  | 10"    | 10                    | 12 | 8xM20  | 12 | 350  |
| 300  | 12"    | 7                     | 12 | 8xM20  | 19 | 400  |
| 350  | 14"    | 7                     | 16 | 10xM20 | 20 | 460  |
| 400  | 16"    | 7                     | 16 | 10xM24 | 24 | 515  |
| 450  | 18"    | 7                     | 20 | 14xM24 | 24 | 565  |
| 500  | 20"    | 4                     | 20 | 14xM24 | 24 | 620  |
| 600  | 24"    | 4                     | 20 | 14xM27 | 24 | 725  |
| 700  | 28"    | 2                     | 24 | 16xM27 | 29 | 840  |
| 800  | 32"    | 2                     | 24 | 16xM30 | 29 | 950  |
| 900  | 36"    | 2                     | 28 | 20xM30 | 40 | 1050 |
| 1000 | 40"    | 2                     | 28 | 20xM33 | 40 | 1160 |
| 1200 | 48"    | 2                     | 32 | 24xM36 | 40 | 1380 |

n- total number of holes  
n1- number of threaded holes



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#### WORKING CONDITIONS

Maximum working pressure: DN50-250 : 10 bar  
 DN 300-450 : 7 bar  
 DN500-600 : 4 bar  
 DN700-1200 : 2 bar

Maximum working temperature : -10°C / +80°C (standard tightness)

⚠ The above mentioned pressures are only valid if the direction of assembly indicated by the arrow on the valves is observed.

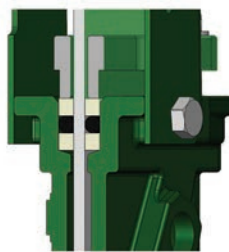
#### Upstream/downstream tightness



Elastomer  
tightness

Metal/metal  
tightness

#### Packing tightness



PTFE/Elastomer

#### Tightness in option

| Tightness            | maximum temperature   |
|----------------------|-----------------------|
| Metal/metal          | Tmax : -10°C / +80°C  |
| White NBR            | Tmax : -10°C / +80°C  |
| EPDM                 | Tmax : -10°C / +130°C |
| Silicone             | Tmax : -10°C / +170°C |
| FPM (Type Viton®)    | Tmax : -10°C / +170°C |
| PTFE                 | Tmax : +4°C / +170°C  |
| CSM (Type Hypalon ®) | Tmax : +4°C / +80°C   |

⚠ To ensure a satisfactory tightness, when using the PTFE gasket, the operating pressure must be at least 1 bar.

#### Flow rates of valves under different differential pressure (m³/h)

| DN   |        | 0.2<br>bar | 0.4<br>bar | 0.6<br>bar | 0.8<br>bar | 1.0<br>bar |
|------|--------|------------|------------|------------|------------|------------|
| mm   | inch   |            |            |            |            |            |
| 50   | 2"     | 93         | 134        | 165        | 185        | 206        |
| 65   | 2 1/2" | 129        | 180        | 213        | 268        | 309        |
| 80   | 3"     | 191        | 309        | 371        | 422        | 494        |
| 100  | 4"     | 443        | 618        | 721        | 824        | 927        |
| 125  | 5"     | 700        | 927        | 1133       | 1339       | 1545       |
| 150  | 6"     | 927        | 1339       | 1545       | 1906       | 2060       |
| 200  | 8"     | 1597       | 2369       | 2987       | 3399       | 4017       |
| 250  | 10"    | 2472       | 3502       | 4429       | 5150       | 5665       |
| 300  | 12"    | 4120       | 5665       | 6798       | 7828       | 8755       |
| 350  | 14"    | 5335       | 7372       | 8730       | 9700       | 11640      |
| 400  | 16"    | 6693       | 9312       | 11640      | 13580      | 15520      |
| 450  | 18"    | 8342       | 12610      | 14550      | 16490      | 18430      |
| 500  | 20"    | 9700       | 14550      | 17460      | 19400      | 22310      |
| 600  | 24"    | 14550      | 19400      | 25220      | 29100      | 33950      |
| 700  | 28"    | 17460      | 29100      | 36860      | 42680      | 48500      |
| 800  | 32"    | 25220      | 38800      | 48500      | 52380      | 58200      |
| 900  | 36"    | 34920      | 50440      | 61110      | 67900      | 77600      |
| 1000 | 40"    | 46560      | 62080      | 77600      | 87300      | 97000      |
| 1200 | 48"    | 62080      | 87300      | 106700     | 121250     | 145500     |

The column of the table under 1 bar gives the values of the Kvs of the valves.

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