

## KNIFE GATE VALVE DUCTILE IRON BODY

### TECHNICAL PASSPORT

#### KNIFE GATE VALVE WITH HANDWHEEL RISING STEM DUCTILE IRON BODY - WAFER TYPE PN10

VG 4400-00

#### 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: DN50 to DN600.
- 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

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

#### PRODUCT APPROVALS



On request

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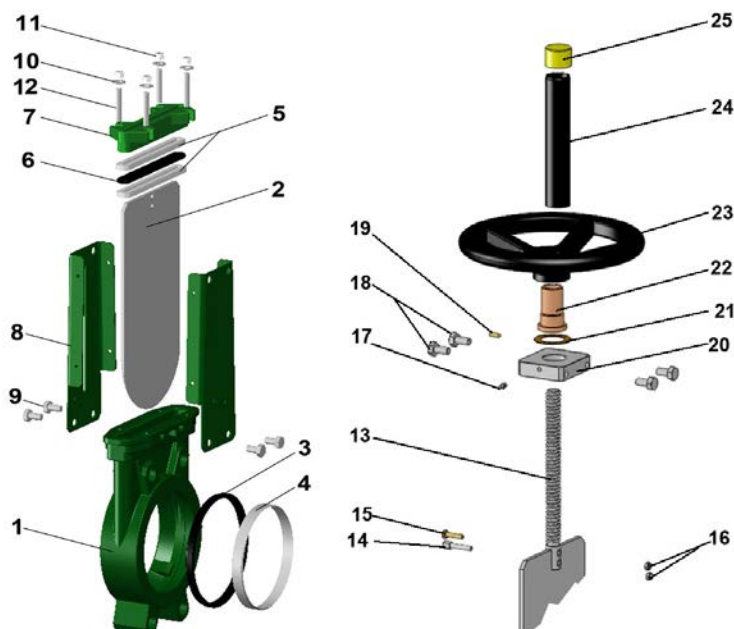
### TECHNICAL PASSPORT

VG 4400-00

#### CONSTRUCTION DN50 - DN300

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  |
| Gland packing (7)    |                                      |
| Handwheel (23)       | Liquid epoxy RAL 9005<br>70 microns  |
| Protection tube (24) |                                      |



| 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      | 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-500-7    | GGG 50       | A536 65-70-50-05 | 1563 EN-JS1050 |
| 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    | Greaser          | 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    | Nut support      | Zinc plated steel            |              |                  |                |
| 21   | 1    | Support washer   | Bronze CuSn5Zn8Pb5-C         |              |                  |                |
| 22   | 1    | Nut              | Bronze CuSn5Zn8Pb5-C         |              |                  |                |
| 23   | 1    | Handwheel        | Cast iron EN-GJL-250         | GG25         | A48 class 40B    | 1452 Grade 250 |
| 24   | 1    | Protection tube  | Steel A45                    |              |                  |                |
| 25   | 1    | Plug             | Polyurethane                 |              |                  |                |

(1) - Parts missing on metal/metal sealing

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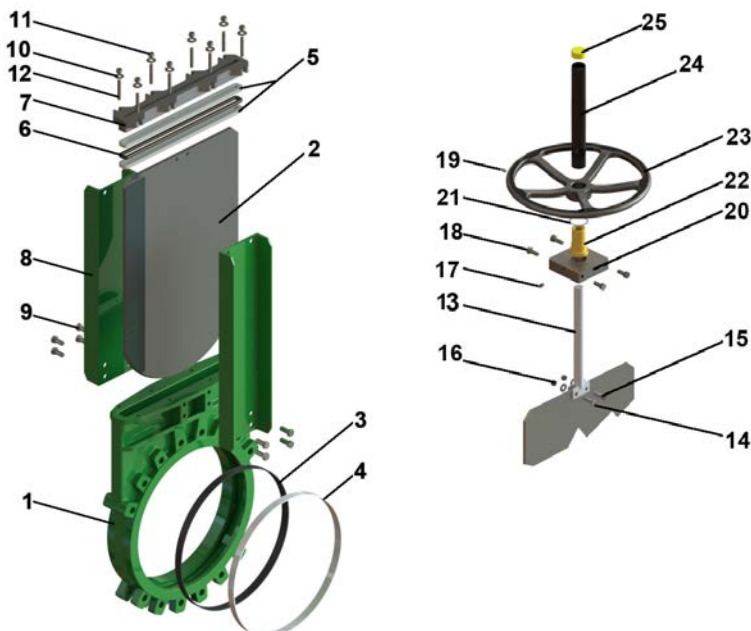
### TECHNICAL PASSPORT

VG 4400-00

#### CONSTRUCTION DN350- DN600

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  |
| Gland packing (7)    |                                      |
| Handwheel (23)       | Liquid epoxy RAL 9005<br>70 microns  |
| Protection tube (24) |                                      |



| 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      | 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-500-7    | GGG 50       | A536 65-70-50-05 | 1563 EN-JS1050 |
| 8    | 2    | Support plate    | Steel                        |              |                  |                |
| 9    | 12   | Screw            | Stainless steel A2-70        |              |                  |                |
| 10   | 8    | Washer           | Stainless steel A2-70        |              |                  |                |
| 11   | 8    | Nut              | Stainless steel A2-70        |              |                  |                |
| 12   | 8    | 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    | Greaser          | 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    | Nut support      | Zinc plated steel            |              |                  |                |
| 21   | 1    | Support washer   | Bronze CuSn5Zn8Pb5-C         |              |                  |                |
| 22   | 1    | Nut              | Bronze CuSn5Zn8Pb5-C         |              |                  |                |
| 23   | 1    | Handwheel        | Cast iron EN-GJL-250         | GG25         | A48 class 40B    | 1452 Grade 250 |
| 24   | 1    | Protection tube  | Steel A45                    |              |                  |                |
| 25   | 1    | Plug             | Polyurethane                 |              |                  |                |

(1) - Parts missing on metal/metal sealing

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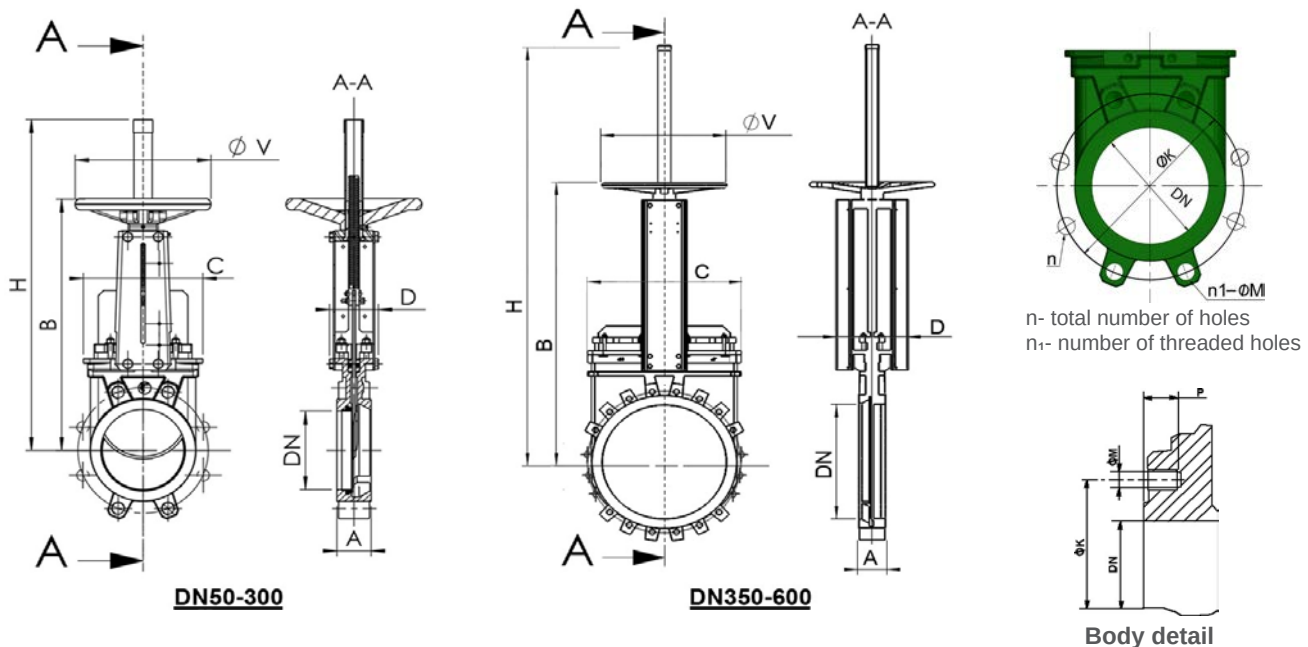


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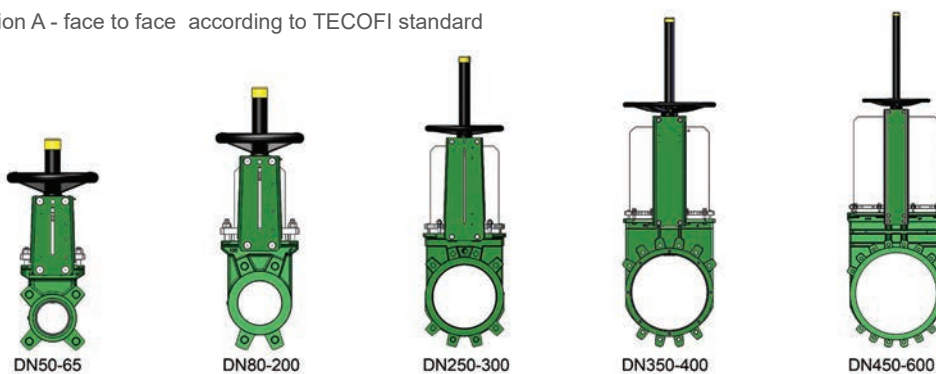
#### DIMENSIONS



#### MOUNTING DIMENSIONS

| DN  |           | A   | B    | C   | D   | Ø V | H    | Maxi pressure (bar) | n  | n1-ØM  | P  | ØK  | Weight (kg) |
|-----|-----------|-----|------|-----|-----|-----|------|---------------------|----|--------|----|-----|-------------|
|     | mm / inch |     |      |     |     |     |      |                     |    |        |    |     |             |
| 50  | 2"        | 40  | 283  | 124 | 83  | 200 | 348  | 10                  | 4  | 4xM16  | 8  | 125 | 7,5         |
| 65  | 2 1/2"    | 40  | 308  | 139 | 83  | 200 | 388  | 10                  | 4  | 4xM16  | 8  | 145 | 9           |
| 80  | 3"        | 50  | 333  | 154 | 83  | 200 | 413  | 10                  | 8  | 4xM16  | 9  | 160 | 10          |
| 100 | 4"        | 50  | 378  | 174 | 83  | 200 | 488  | 10                  | 8  | 4xM16  | 9  | 180 | 11,5        |
| 125 | 5"        | 50  | 423  | 189 | 93  | 250 | 564  | 10                  | 8  | 4xM16  | 9  | 210 | 15,5        |
| 150 | 6"        | 60  | 474  | 220 | 93  | 250 | 635  | 10                  | 8  | 4XM20  | 10 | 240 | 18,5        |
| 200 | 8"        | 60  | 593  | 275 | 108 | 310 | 809  | 10                  | 8  | 4XM20  | 12 | 295 | 35          |
| 250 | 10"       | 70  | 685  | 326 | 108 | 310 | 946  | 10                  | 12 | 8XM20  | 12 | 350 | 47          |
| 300 | 12"       | 70  | 792  | 380 | 108 | 310 | 1118 | 7                   | 12 | 8XM20  | 19 | 400 | 61          |
| 350 | 14"       | 96  | 900  | 438 | 290 | 500 | 1282 | 7                   | 16 | 10XM20 | 20 | 460 | 117         |
| 400 | 16"       | 100 | 978  | 494 | 290 | 500 | 1441 | 7                   | 16 | 10XM24 | 24 | 515 | 151         |
| 450 | 18"       | 106 | 1105 | 547 | 290 | 500 | 1587 | 7                   | 20 | 14XM24 | 24 | 565 | 187         |
| 500 | 20"       | 110 | 1215 | 613 | 290 | 500 | 1809 | 4                   | 20 | 14XM24 | 24 | 620 | 205         |
| 600 | 24"       | 110 | 1418 | 716 | 290 | 500 | 2060 | 4                   | 20 | 14XM27 | 24 | 725 | 292         |

Dimension A - face to face according to TECOFI standard



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ISO 9001  
ISO 14001  
BUREAU VERITAS  
Certification



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**VG 4400-00**

#### WORKING CONDITIONS

Maximum working pressure: DN50-250 : 10 bar  
DN300-450 : 7 bar  
DN500-600 : 4 bar

Maximum working temperature : -10°C / +80°C (NBR joint in standard)

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

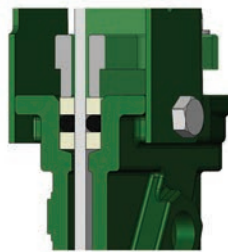
##### Upstream/downstream tightness



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

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      |

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

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