

## KNIFE GATE VALVE DUCTILE IRON BODY

### TECHNICAL PASSPORT

#### KNIFE GATE VALVE - RISING STEM WITH ELECTRIC ACTUATOR AUMA DUCTILE IRON BODY - BETWEEN FLANGES PN10

VG 4400-UX4

#### 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.

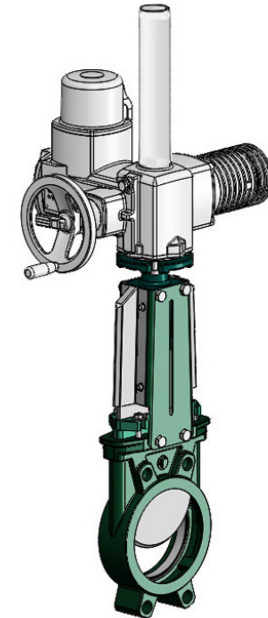


**Fluids:** water, sewage, pulp, pasty products, powdery, granular, fibrous, abrasive and crystallizing.

#### 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.



| References  | Actuator types |
|-------------|----------------|
| VG 4400-U04 | AUMA 400V 3PH  |
| VG 4400-U24 | AUMA 230V 1PH  |
|             |                |

#### STANDARD

|                     |   |        |         |             |          |         |
|---------------------|---|--------|---------|-------------|----------|---------|
| <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 | DN700-1200; | 3 bar    | 2.2 bar |

#### PRODUCT APPROVALS



**Tecofi France**

83 rue Marcel Mérieux - 69960 Corbas  
Tél. +33 (0)4 72 79 05 79 - Fax. +33 (0)4 78 90 19 19  
E-mail : sales@tecofi.fr - [www.tecofi.fr](http://www.tecofi.fr)



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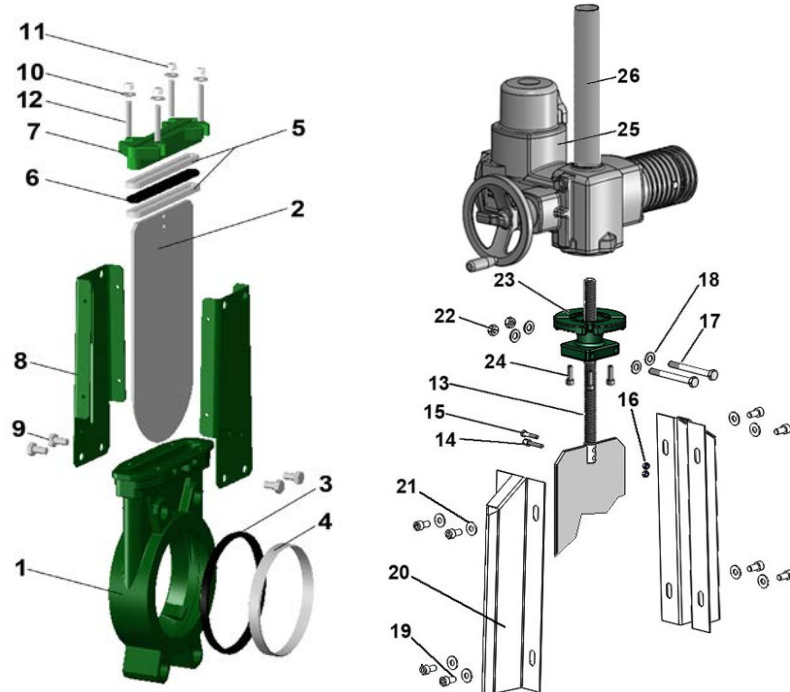
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VG 4400-UX4

#### CONSTRUCTION

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

| Constituant       | Revêtement                           |
|-------------------|--------------------------------------|
| Body (1)          | Epoxy powder RAL 6005<br>150 microns |
| Support plate(8)  |                                      |
| Packing gland (7) | Liquid epoxy RAL 6005<br>70 microns  |
| ISO plate (23)    |                                      |



| Pos. | Q-ty | Description       | Material                     | Equivalence  |                  |                |
|------|------|-------------------|------------------------------|--------------|------------------|----------------|
|      |      |                   |                              | 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 304          | 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   | 2    | Screw             | Stainless steel A2-70        |              |                  |                |
| 18   | 4    | Washer            | Stainless steel A2-70        |              |                  |                |
| 19   | 8    | Screw             | Stainless steel A2-70        |              |                  |                |
| 20   | 2    | Protection cap    | Stainless steel X5CrNi 18 10 | X5CrNi 18 10 | A 182 AISI 304   | 1449-2 304 S15 |
| 21   | 8    | Washer            | Stainless steel A2-70        |              |                  |                |
| 22   | 2    | Nut               | Stainless steel A2-70        |              |                  |                |
| 23   | 1    | ISO 5210 plate    | Steel A45                    |              |                  |                |
| 24   | 4    | Screw             | Stainless steel A2-70        |              |                  |                |
| 25   | 1    | Electric actuator | AUMA model                   |              |                  |                |
| 26   | 1    | Protection tube   |                              |              |                  |                |

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

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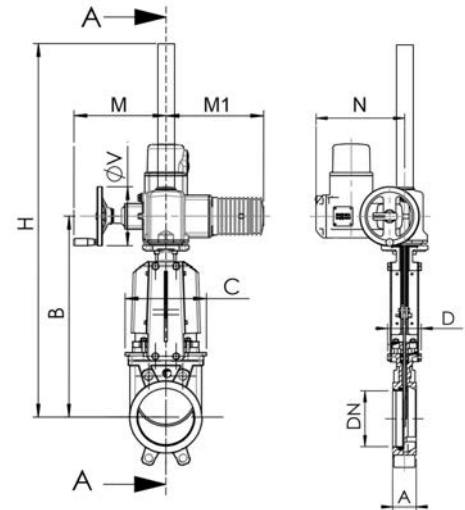
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### TECHNICAL PASSPORT

#### VG 4400-UX4

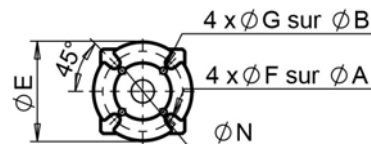
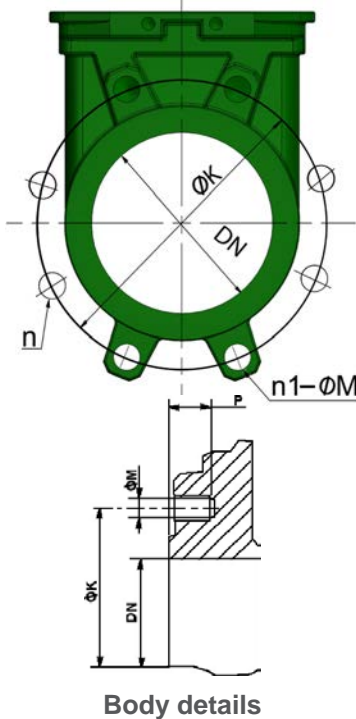
### DIMENSIONS

| DN   |        | Type moteur | A   | B    | C    | D   | M   | M1  | N   | ØV  | H    | Poids (kg) |
|------|--------|-------------|-----|------|------|-----|-----|-----|-----|-----|------|------------|
| mm   | inch   |             |     |      |      |     |     |     |     |     |      |            |
| 50   | 2"     | SA07.2      | 40  | 383  | 124  | 83  | 249 | 265 | 238 | 160 | 578  | 27         |
| 65   | 2 1/2" | SA07.2      | 40  | 408  | 139  | 83  | 249 | 265 | 238 | 160 | 603  | 29         |
| 80   | 3"     | SA07.2      | 50  | 433  | 154  | 83  | 249 | 265 | 238 | 160 | 628  | 30         |
| 100  | 4"     | SA07.2      | 50  | 478  | 174  | 83  | 249 | 265 | 238 | 160 | 673  | 31         |
| 125  | 5"     | SA07.6      | 50  | 516  | 189  | 93  | 249 | 265 | 238 | 160 | 711  | 38         |
| 150  | 6"     | SA07.6      | 60  | 567  | 220  | 93  | 249 | 265 | 238 | 160 | 762  | 42         |
| 200  | 8"     | SA07.6      | 60  | 686  | 275  | 108 | 249 | 265 | 238 | 160 | 881  | 57         |
| 250  | 10"    | SA10.2      | 70  | 778  | 326  | 108 | 254 | 282 | 248 | 200 | 973  | 75         |
| 300  | 12"    | SA7.6       | 70  | 887  | 380  | 108 | 249 | 265 | 238 | 160 | 1082 | 87         |
| 350  | 14"    | SA10.2      | 96  | 990  | 438  | 290 | 254 | 283 | 248 | 200 | 1185 | 137        |
| 400  | 16"    | SA10.2      | 100 | 1100 | 494  | 290 | 254 | 283 | 248 | 200 | 1295 | 167        |
| 450  | 18"    | SA14.2      | 106 | 1225 | 547  | 290 | 336 | 389 | 286 | 315 | 1430 | 231        |
| 500  | 20"    | SA14.2      | 110 | 1335 | 613  | 290 | 336 | 389 | 286 | 315 | 1540 | 266        |
| 600  | 24"    | SA14.2      | 110 | 1539 | 716  | 290 | 336 | 389 | 286 | 315 | 1744 | 310        |
| 700  | 28"    | SA14.6      | 110 | 1738 | 835  | 320 | 339 | 389 | 286 | 400 | 1964 | -          |
| 800  | 32"    | SA14.6      | 110 | 1953 | 972  | 320 | 339 | 389 | 286 | 400 | 2179 | -          |
| 900  | 36"    | SA14.6      | 110 | 2226 | 1041 | 320 | 339 | 389 | 286 | 400 | 2452 | -          |
| 1000 | 40"    | SA14.6      | 110 | 2410 | 1152 | 320 | 339 | 389 | 286 | 400 | 2636 | -          |
| 1200 | 48"    | SA16.2      | 150 | 2847 | 1255 | 400 | 365 | 430 | 303 | 500 | 3077 | -          |



Dimension A - face à face suivant standard TECOFI

### MOUNTING



#### Embase ISO

| DN   |        | Maximum pressure (bar) | n  | n1-ØM  | P  | ØK   | ISO plate | ØA  | ØB  | ØE  | ØF | ØG | ØN  |
|------|--------|------------------------|----|--------|----|------|-----------|-----|-----|-----|----|----|-----|
| mm   | inch   |                        |    |        |    |      |           |     |     |     |    |    |     |
| 50   | 2"     | 10                     | 4  | 4xM16  | 8  | 125  | F07/F10   | 70  | 102 | 125 | 9  | 11 | 70  |
| 65   | 2 1/2" | 10                     | 4  | 4xM16  | 8  | 145  | F07/F10   | 70  | 102 | 125 | 9  | 11 | 70  |
| 80   | 3"     | 10                     | 8  | 4xM16  | 9  | 160  | F07/F10   | 70  | 102 | 125 | 9  | 11 | 70  |
| 100  | 4"     | 10                     | 8  | 4xM16  | 9  | 180  | F07/F10   | 70  | 102 | 125 | 9  | 11 | 70  |
| 125  | 5"     | 10                     | 8  | 4xM16  | 9  | 210  | F07/F10   | 70  | 102 | 125 | 9  | 11 | 70  |
| 150  | 6"     | 10                     | 8  | 4XM20  | 10 | 240  | F07/F10   | 70  | 102 | 125 | 9  | 11 | 70  |
| 200  | 8"     | 10                     | 8  | 4XM20  | 12 | 295  | F10       | 102 | -   | 125 | 12 | -  | 70  |
| 250  | 10"    | 10                     | 12 | 8XM20  | 12 | 350  | F10       | 102 | -   | 125 | 12 | -  | 70  |
| 300  | 12"    | 7                      | 12 | 8XM20  | 19 | 400  | F10       | 102 | -   | 125 | 12 | -  | 70  |
| 350  | 14"    | 7                      | 16 | 10XM20 | 20 | 460  | F10/F14   | 102 | 140 | 175 | 11 | 17 | 100 |
| 400  | 16"    | 7                      | 16 | 10XM24 | 24 | 515  | F10/F14   | 102 | 140 | 175 | 11 | 17 | 100 |
| 450  | 18"    | 7                      | 20 | 14XM24 | 24 | 565  | F10/F14   | 102 | 140 | 175 | 11 | 17 | 100 |
| 500  | 20"    | 4                      | 20 | 14XM24 | 24 | 620  | F10/F14   | 102 | 140 | 175 | 11 | 17 | 100 |
| 600  | 24"    | 4                      | 20 | 14XM27 | 24 | 725  | F10/F14   | 102 | 140 | 175 | 11 | 17 | 100 |
| 700  | 28"    | 2                      | 24 | 16XM27 | 29 | 840  | F14       | 140 | -   | 175 | 17 | -  | 100 |
| 800  | 32"    | 2                      | 24 | 16XM30 | 29 | 950  | F14       | 140 | -   | 175 | 17 | -  | 100 |
| 900  | 36"    | 2                      | 28 | 20XM30 | 40 | 1050 | F16       | 165 | -   | 210 | 23 | -  | 130 |
| 1000 | 40"    | 2                      | 28 | 20XM33 | 40 | 1160 | F16       | 165 | -   | 210 | 23 | -  | 130 |
| 1200 | 48"    | 2                      | 32 | 24XM36 | 40 | 1380 | F16       | 165 | -   | 210 | 23 | -  | 130 |

n- Total number of holes  
n1- number of threaded holes

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#### WORKING CONDITIONS

Maximum working pressure: DN50-250 : 10 bar  
 DN300-450 : 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.

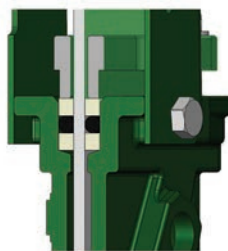
#### Upstream/downstream tightness



Elastomer tightness

Metal/metal tightness

#### Packing tightness



PTFE/élastomer

#### 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.

#### FLOWS

##### Flow rates of valves under different differential pressure (m<sup>3</sup>/h)

| DN   |        | 0.2 bar | 0.4 bar | 0.6 bar | 0.8 bar | 1.0 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   | 21100   | 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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 Tél. +33 (0)4 72 79 05 79 - Fax. +33 (0)4 78 90 19 19  
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