

**Tecofi'Φ**  
VALVE DESIGNER - FRANCE

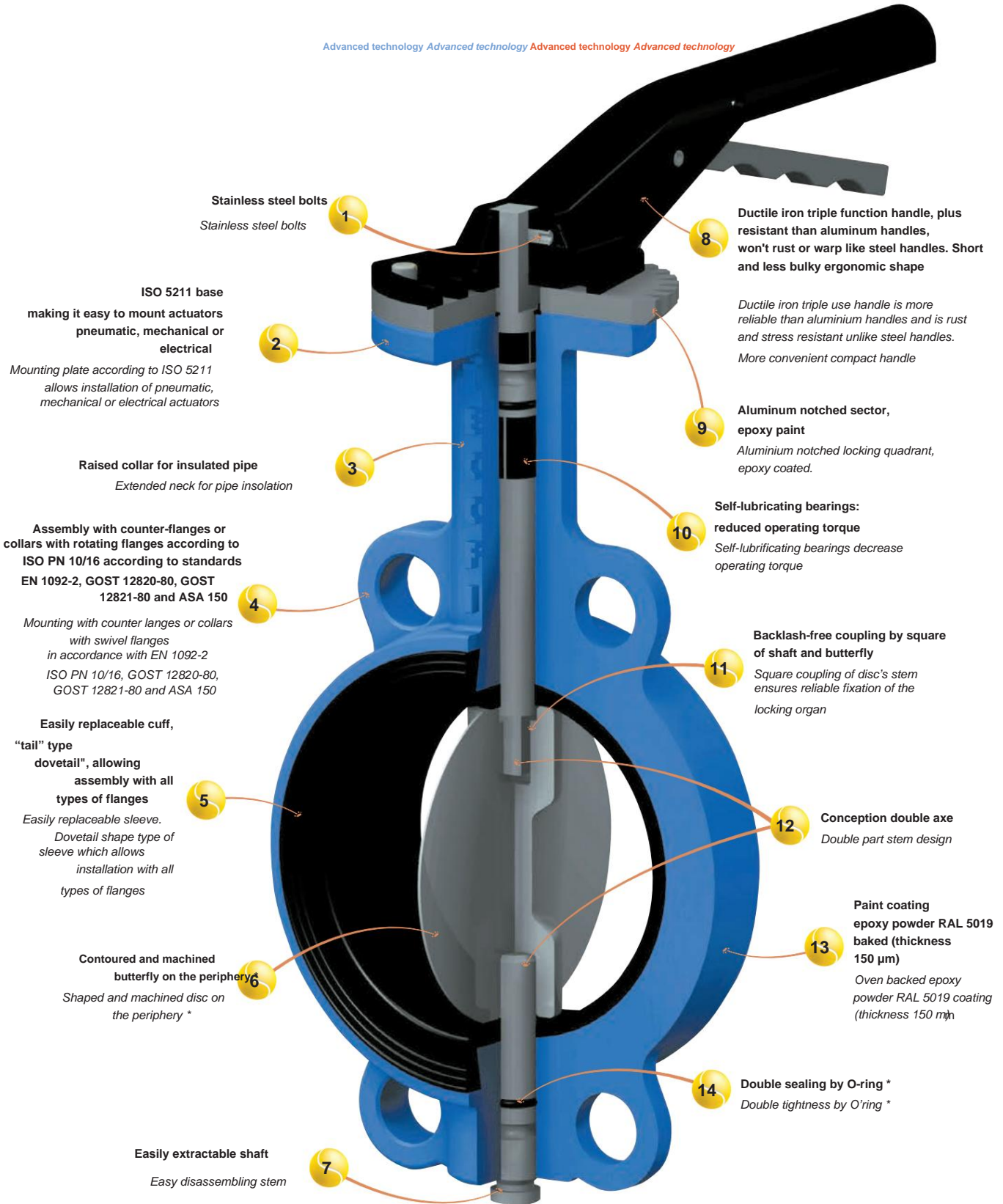


Robinets à papillon  
*Butterfly valves*



Complies with the European Directive "Equipment under pressure" No. 97/23/EC: category III module H  
 In accordance with European directive «Pressure equipments» N°97/23/CE : category III module H

Advanced technology Advanced technology Advanced technology Advanced technology



1 Stainless steel bolts  
 Stainless steel bolts

2 ISO 5211 base  
 making it easy to mount actuators  
 pneumatic, mechanical or  
 electrical  
 Mounting plate according to ISO 5211  
 allows installation of pneumatic,  
 mechanical or electrical actuators

3 Raised collar for insulated pipe  
 Extended neck for pipe insulation

4 Assembly with counter-flanges or  
 collars with rotating flanges according to  
 ISO PN 10/16 according to standards  
 EN 1092-2, GOST 12820-80, GOST  
 12821-80 and ASA 150  
 Mounting with counter flanges or collars  
 with swivel flanges  
 in accordance with EN 1092-2  
 ISO PN 10/16, GOST 12820-80,  
 GOST 12821-80 and ASA 150

5 Easily replaceable cuff,  
 "tail" type  
 dovetail", allowing  
 assembly with all  
 types of flanges  
 Easily replaceable sleeve.  
 Dovetail shape type of  
 sleeve which allows  
 installation with all  
 types of flanges

6 Contoured and machined  
 butterfly on the periphery  
 Shaped and machined disc on  
 the periphery \*

7 Easily extractable shaft  
 Easy disassembling stem

8 Ductile iron triple function handle, plus  
 resistant than aluminum handles,  
 won't rust or warp like steel handles. Short  
 and less bulky ergonomic shape

Ductile iron triple use handle is more  
 reliable than aluminium handles and is rust  
 and stress resistant unlike steel handles.  
 More convenient compact handle

9 Aluminum notched sector,  
 epoxy paint  
 Aluminium notched locking quadrant,  
 epoxy coated.

10 Self-lubricating bearings:  
 reduced operating torque  
 Self-lubricating bearings decrease  
 operating torque

11 Backlash-free coupling by square  
 of shaft and butterfly  
 Square coupling of disc's stem  
 ensures reliable fixation of the  
 locking organ

12 Conception double axe  
 Double part stem design

13 Paint coating  
 epoxy powder RAL 5019  
 baked (thickness  
 150 µm)  
 Oven backed epoxy  
 powder RAL 5019 coating  
 (thickness 150 µm)

14 Double sealing by O-ring \*  
 Double tightness by O'ring \*

\* Complies with EN 12266-1, DIN 3230 and ISO 5208 standards  
 In accordance with EN 12266-1, DIN 3230 and ISO 5208

# Summary

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## Material tables Connection

## Material chart Connection

|   | TECFLY      | TECFLY LUG  | TECLARGE       | TECLARGE FL    | TECWAT         | TECSUP       | TECBLOC      | TECFLO   |
|---|-------------|-------------|----------------|----------------|----------------|--------------|--------------|--|
| DN  | 40 to 300mm | 40 to 300mm | 350 to 1200 mm | 350 to 1200 mm | 100 to 2000 mm | 50 to 600 mm | 50 to 600 mm | 50 to 300 mm   |
| <b>Corps / Body</b>                         |             |             |                |                |                |              |              |  |
| Fonte / Cast iron<br>EN-GJL-250             | •           | •           | •              | •              |                |              | •            |  |
| Fonte GS / Ductile iron<br>EN-GJS-400-15    | •           | •           | •              | •              | •              |              | •            |  |
| Steel / Cast steel<br>GP240GH               | ••••        | •           |                |                |                | •            |              | •  |
| Inox / Stainless steel<br>GX5CrNiMo 19-11-2 | ••••        | •           |                |                |                |              |              | •  |
| Aluminium                                   |             |             |                |                |                |              | •            |  |
| <b>Butterfly / Disc</b>                     |             |             |                |                |                |              |              |  |
| Fonte GS / Ductile iron                     | •           | •           | •              | •              | •              |              |              |  |
| Steel / Cast steel                          | ••••        | •           |                |                |                | •            | • (1)        |  |
| Fonte / Cast iron                           | ••••        | •           |                |                |                |              |              |  |
| Inox 304 / Stainless steel 304              | ••••        | •           |                |                |                | •            | • (2)        | • (3)  |
| Inox 316 / Stainless steel 316              | •           | •           | •              | •              | •              | •            | • (2)        | • (3)  |
| Inox 316 L / Stainless steel 316 L          | •           | •           | •              | •              |                | •            | •            |  |
| Copper alloy<br>Aluminium bronze            | ••••        | •           |                |                |                |              |              |  |
| Hastelloy C.B                               | ••••        | •           |                |                |                |              |              |  |
| 904 L (Uranus B6®)                          | •           | •           | •              | •              |                |              | •            |  |
| <b>Cuff or seat / Sleeve or seat</b>        |             |             |                |                |                |              |              |  |
| Metal seat / Metal seat                     |             |             |                |                |                | •            | •            |  |
| EPDM  | •           | •           | •              | •              | •              |              | •            | •  |
| EPDM heat<br>Heat EPDM                      | •           | •           | •              | •              |                |              | •            |  |
| Nitrile / Nitril                            | •           | •           | ••••           |                |                |              |              |  |
| PTFE  | •           | •           |                |                |                | •            |              | •  |
| FPM (type Viton®)                           | •••••       | •           |                |                |                |              |              |  |
| CSM (type Hypalon®)                         | ••••        | •           |                |                |                |              | •            |  |
| Silicone                                    | ••••        | •           |                |                |                |              | •            |  |
| Elastomère blanc* / White rubber*           | •           | •           | •              | •              |                |              | •            | Seat / Seat  |
| <b>Axe / Stem</b>                           |             |             |                |                |                |              |              |  |
| Inox 416 / Stainless steel 416              | •           | •           | •              | •              | •              | •            |              | Monobloc with<br>the butterfly<br><br>One piece with<br>the disc |
| Inox 316 / Stainless steel 316              | •           | •           | •              | ••••           |                |              |              |  |
| Inox 420 / Stainless steel 420              | •           | •           | •              | •              | •              |              |              |  |
| Hastelloy C.B                               | •••••       | •           |                |                |                |              |              |  |
| 904 L (Uranus B6®)                          | •••••       | •           |                |                |                |              |              |  |

• Available as standard / Available on stock    • On request / Available on request    □ Not available / Not available

\* Elastomère blanc : FPM (type Viton®) - Nitrile - EPDM - Silicone / White rubber: FPM (type Viton®) - Nitril - EPDM - Silicone  
1. Ebonité / Hard rubber lined 2. Revêtu halar en option / Halar lined on request 3. Revêtu PFA / PFA lined

### Connection possibilities / Connection eventuality

|                     | TECFLY | TECFLY LUG | TECLARGE | TECLARGE FL | TECWAT | TECSUP | TECBLOC | TECFLO |
|---------------------|--------|------------|----------|-------------|--------|--------|---------|--------|
| ISO PN 10           | •      | •          | •        | •           | •      |        | •       | •      |
| ISO PN 16           | •      | •          | •        | •           | •      |        | •       |        |
| ISO PN 25           | •      |            |          |             | •      |        |         |        |
| ISO PN 40           |        |            |          |             | •      |        |         |        |
| ISOPN 50            |        |            |          |             |        | •      |         |        |
| ISOPN 100           |        |            |          |             |        |        |         |        |
| ASA 150 - ISO PN 20 | ••••   |            |          |             |        | •      | •       | •      |
| 300 WORKS           |        |            |          |             |        | •      |         |        |
| 600 WORKS           |        |            |          |             |        |        |         |        |

# Couples - Flows

# Torque - Flow

Operating torque of valves (Nm) / Operating torque of valves (Nm)

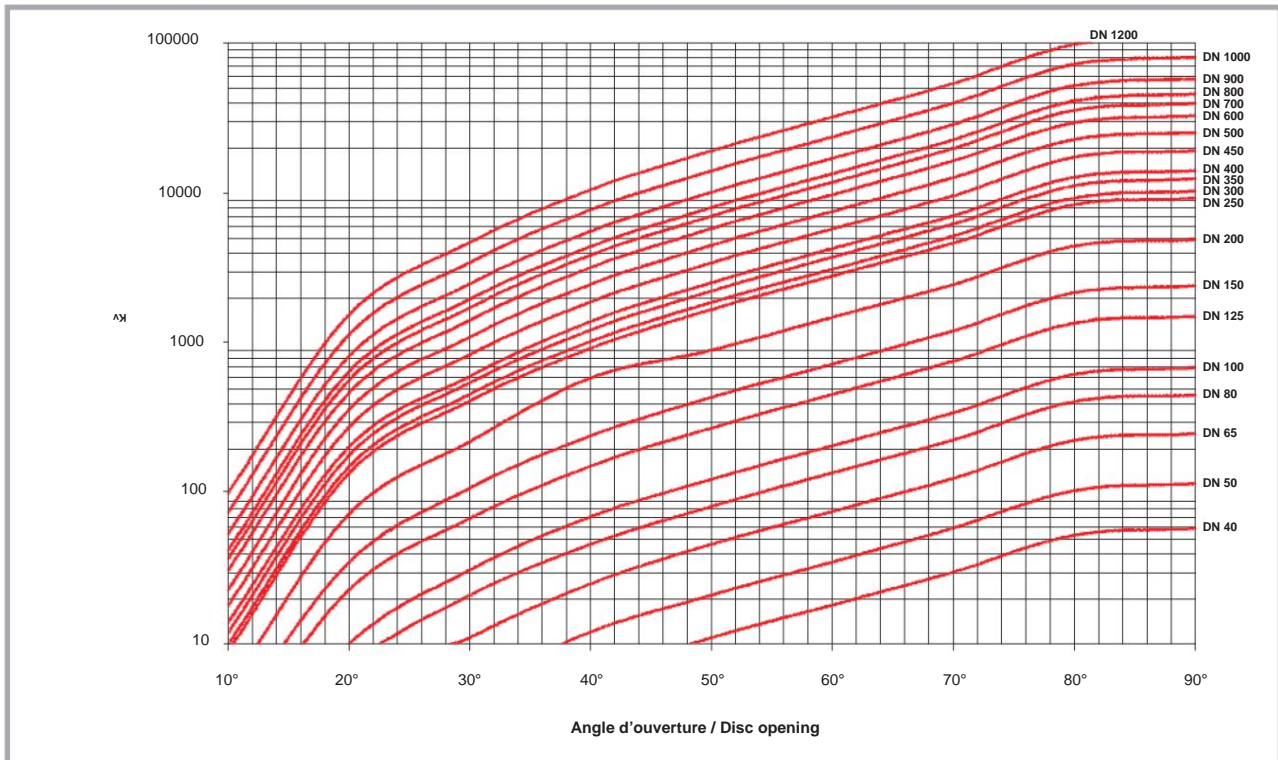
| P<br>(bar) | TECFLY - TECFLY LUG |    |    |    |     |     |     |     |     |     | TECLARGE - TECLARGE FL |      |      |      |      |      |      |      |       |       |
|------------|---------------------|----|----|----|-----|-----|-----|-----|-----|-----|------------------------|------|------|------|------|------|------|------|-------|-------|
|            | DN                  |    |    |    |     |     |     |     |     |     | DN                     |      |      |      |      |      |      |      |       |       |
|            | 40                  | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350                    | 400  | 450  | 500  | 600  | 700  | 800  | 900  | 1000  | 1200  |
| 5          | 11                  | 14 | 17 | 27 | 41  | 60  | 89  | 165 | 257 | 360 | 526                    | 690  | 965  | 1214 | 1946 | 2764 | 3686 | 4666 | 6344  | 11068 |
| 10         | 12                  | 15 | 23 | 34 | 44  | 70  | 104 | 185 | 317 | 471 | 671                    | 873  | 1253 | 1617 | 2622 | 3928 | 4850 | 6741 | 9651  | 17654 |
| 16         | 14                  | 16 | 25 | 36 | 50  | 84  | 122 | 267 | 388 | 545 | 863                    | 1167 | 1656 | 2154 | 3540 | 5480 | 6450 | 9215 | 12853 | 22504 |

Flow coefficient (Kv) of TECFLY and TECLARGE valves

Valve's flow factor (Kv) for TECFLY and TECLARGE

Cv = 1.17 Kv

| DN   |       | Kv  |      |      |       |       |       |       |       |        |
|------|-------|-----|------|------|-------|-------|-------|-------|-------|--------|
| mm   | inch  | 10° | 20°  | 30°  | 40°   | 50°   | 60°   | 70°   | 80°   | 90°    |
| 40   | 1 1/2 | 0   | 1    | 3    | 6     | 11    | 18    | 30    | 53    | 59     |
| 50   | 2"    | 0   | 2    | 5    | 12    | 21    | 35    | 59    | 105   | 117    |
| 65   | 2 1/2 | 0   | 4    | 11   | 25    | 46    | 76    | 126   | 226   | 251    |
| 80   | 3"    | 1   | 7    | 21   | 46    | 82    | 137   | 228   | 410   | 455    |
| 100  | 4"    | 1   | 10   | 31   | 70    | 124   | 207   | 345   | 621   | 690    |
| 125  | 5"    | 2   | 23   | 68   | 152   | 273   | 455   | 759   | 1366  | 1518   |
| 150  | 6"    | 3   | 35   | 108  | 242   | 435   | 725   | 1209  | 2176  | 2418   |
| 200  | 8"    | 5   | 73   | 220  | 586   | 897   | 1479  | 2465  | 4436  | 4929   |
| 250  | 10"   | 9   | 136  | 410  | 921   | 1675  | 2792  | 4653  | 8375  | 9306   |
| 300  | 12"   | 10  | 150  | 455  | 1023  | 1861  | 3102  | 5170  | 9306  | 10340  |
| 350  | 14"   | 12  | 179  | 543  | 1218  | 2217  | 3734  | 6223  | 11201 | 12445  |
| 400  | 16"   | 14  | 204  | 441  | 1386  | 2521  | 4247  | 7078  | 12740 | 14155  |
| 450  | 18"   | 18  | 276  | 836  | 1879  | 3418  | 5757  | 9595  | 17271 | 19190  |
| 500  | 20"   | 23  | 360  | 1093 | 2455  | 4467  | 7524  | 12672 | 22810 | 25344  |
| 600  | 24"   | 31  | 466  | 1412 | 3171  | 5770  | 9719  | 16368 | 29462 | 32736  |
| 700  | 28"   | 37  | 564  | 1710 | 3841  | 6988  | 11771 | 19824 | 35683 | 39648  |
| 800  | 32"   | 42  | 643  | 1950 | 4380  | 7969  | 13424 | 22608 | 41118 | 45687  |
| 900  | 36"   | 54  | 814  | 2467 | 5543  | 10084 | 16986 | 28608 | 52031 | 57812  |
| 1000 | 40"   | 75  | 1127 | 3420 | 7682  | 13976 | 23541 | 39648 | 72110 | 80948  |
| 1200 | 48"   | 101 | 1529 | 4637 | 10416 | 18950 | 31920 | 53760 | 97776 | 109760 |



# Sleeve materials

# Sleeve materials

**EPDM**

Hot or cold water, sea water, dry air no oiled, alkaline solutions, alcohols, hydroxide soda, acids (mineral and organic), acid salts.

**EPDM**

Hot or cold water, sea water, dry air oilless, alkalines, alcohols, soda hydroxide, acids (minerals and organics), acid salt.

**EPDM heat**

Same uses but at temperatures higher.

**Heat EPDM**

Same use but for higher temperature.

**CSM (type Hypalon®)**

Mineral acids, oxidizing fluids, bases, alcohols, animal and vegetable oils, acids phosphoriques.

**CSM (type Hypalon®)**

Mineral acids, oxidizing fluids, bases, alcohols, animal or vegetable oils, phosphorical acids.

**FPM (type Viton®)**

Acids, fats, hydrocarbons.

**FPM (type Viton®)**

Acids, greases, hydrocarbons.

**Silicone**

Food, high temperatures.

**Silicone**

Food industry, high temperature.

**Nitrile (NBR)**

Mineral oils, hydrocarbons, lubricated air.

**Nitril (NBR)**

Mineral oils, hydrocarbons, lubricated air.

**Nitrile carboxyle**

Abrasive fluids, powders.

**Carboxyl nitril**

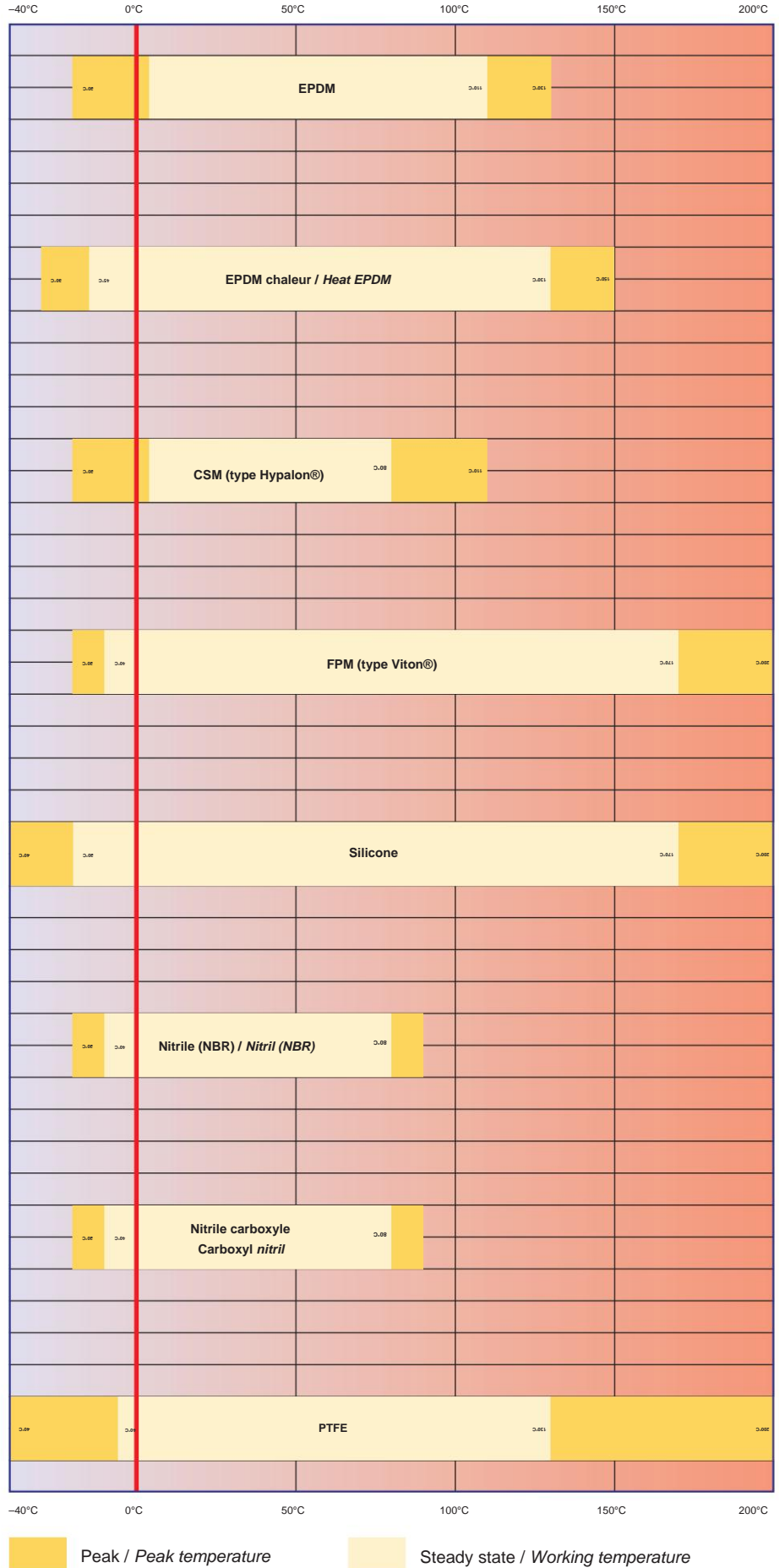
Abrasive, pulverulent fluids.

**PTFE**

All aggressive products.

**PTFE**

All corrosive products.



## Codification

## Codification



**Attention !** Consult us for any selection different from our catalog references.

**Caution !** Consult us for any selections different from references in the catalogue.

VP344800 NI

Butterfly valves  
Butterfly valves

Type of body  
Body material

- 3 Fonte / Cast iron
- 4 Ductile cast iron / Ductile iron
- 5 Steel / Steel
- 6 Inox / Stainless steel
- 8 Aluminium
- 9 PVC

Type of connections  
Connection

- 2 A brides / Flanged
- 4 Entre brides / Between flanges
- 5 Others / Others
- 6 Threaded lugs

Nominal pressure  
Nominal pressure

- 0 10 bar
- 4 16 bar - 150 lbs
- 5 25 bar
- 6 40 bar - 300 lbs
- 7 64 bar
- 8 100 bar - 600 lbs

Nature of the butterfly  
Disc material

- 1 Inox 316 L / Stainless steel 316 L
- 2 Copper Alu / Aluminum bronze
- 3 Fonte / Cast iron
- 4,904 L (Uranus B6®)
- 5 Steel / Steel
- 6 Inox 304 / Stainless steel 304
- 8 Ductile cast iron / Ductile iron
- 9 Inox 316 / Stainless steel 316

Actuators

Operating system

- 00 Ax nu / Bare shaft
- 01 Chainwheel / Chainwheel
- 02 Handle / Handle
- 03 Double-acting pneumatic cylinder  
Double acting pneumatic actuator
- Electric motor / Electric actuator
- B04 BERNARD 400V / 50Hz Tri IP67
- B14 BERNARD 230V / 50Hz Tri IP67
- B24 BERNARD 230V / 50Hz Mono IP67
- B34 BERNARD 24V / Mono IP67
- B44 BERNARD-LEA 230V / Mono
- B54 BERNARD-LEA 24V Mono
- M04 BELIMO 230V Mono
- M14 BELIMO 24V Mono
- U04 AUMA 400V / 50Hz Tri IP67
- U14 AUMA 230V / 50Hz Tri IP67
- U24 ALL 230V Plug IP67
- U34 AUMA 24V Mono IP67
- 05 Square maneuver / Square
- 07 Single-acting pneumatic cylinder  
Single acting pneumatic actuator
- 08 Manual flywheel gearbox  
Gear box actuator
- 09 Hydraulic cylinder  
Hydraulic actuator

Nature of the cuff  
Sleeve material

- IN Nitrile / Nitrile
- EP EPDM
- EPC EPDM chaleur / Heat EPDM
- EPB EPDM blanc / White EPDM
- YES Silicone
- VI FPM (type Viton®)
- PTF PTFE
- HY CSM (type Hypalon®)
- MM Metal seat / Metal seat

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**TECFLY range DN 40 to 300**

## Presentation

**ȳ APPLICATION**

General use: water, sea water, air, gas, hydrocarbons, acids, etc.

**ȳ MODELS**

TECFLY: type with smooth lugs allowing use at the end of the line.  
TECFLY LUG: type with tapped lugs allowing mounting by screws.

**ȳ GENERAL CHARACTERISTICS -**

Design according to standard NF EN 593.

- 2-way watertight closure. NF EN 12266-1, NF EN 12266-2 - ISO 5208 - DIN 3230.
- Gauge according to ISO 5752 series 20, NF EN 558-1 series 20.
- Profiled cuff in the shape of a "dovetail" ensuring perfect support (for a high vacuum, the cuff can be glued).  
Optional: aluminum reinforced sleeve.
- Shaft in two parts to ensure excellent flow of fluids for small diameters, thanks to a butterfly reduced in thickness and profiled.
- Butterfly machined on the edge, which allows a reduced and regular operating torque.
- Injectable axis.
- Teflon coated stainless steel bearings.
- Interchangeable cuff. ȳ

**CONSTRUCTION MATERIALS** (see table on page 18)

- Body: gray cast iron. Possibilities: ductile iron, steel, stainless steel.
- Butterfly: chrome-plated cast iron or 316 stainless steel. Various alloys possible: cupro alu, 904 L (Uranus B6®), etc.
- Cuff: EPDM heat, nitrile, FPM (Viton® type), silicone, etc.

**ȳ COATING**

- Body: coated in oven-baked epoxy paint, food grade, thickness 150 µ, RAL 5019.
- Butterfly: chrome butterfly, possibility of rilsan etc.

**ȳ SERVICE CONDITIONS**

- Maximum service pressure 16 bar.
- Maximum temperature depending on the nature of the sleeve (see table on page 18).

**ȳ AGREEMENTS AND TESTS**

- Manufactured to meet the requirements of European Directive 97/23/EC "Pressure equipment": category III module H.
- Test procedures carried out according to NF EN 12266-1, NF EN 12266-2, DIN 3230 and ISO 5208.

**ȳ CONNECTION -**

- TECFLY: between flanges PN 10 and PN 16, according to standard EN 1092-2.  
Adaptable between flanges ASME B16.5, ASA 150.
- TECFLY LUG: as standard: between flanges PN 10/16 up to DN 150, PN 10 for larger diameters.  
Mounting between ASA 150 and PN 16 flanges for DN > 150 on request.

**ȳ MANEUVERING BODIES**

ISO 5211 standardized base for easy mounting of the following actuators:

- triple function handle in ductile iron (see details on page 19), - manual gear reducer with position indicator, - single or double effect pneumatic cylinder, - electric motor 24, 48, 230/400 V single/three phase, 50 or 60 Hz.

**TECFLY range DN 40 to 300**

## Presentation

**ȳ APPLICATION**

General use: water, sea water, air, hydrocarbons, acids etc.

**ȳ MODELS**

TECFLY type with smooth ears enabling use on bottom line.  
TECFLY LUG: type with threaded lugs allowing screw assembling.

**ȳ GENERAL CHARACTERISTICS**

- Design in accordance with NF EN 593.
- Tightness in both ways. NF EN 12266-1, NF EN 12266-2 - ISO 5208 - FROM 3230.
- Face to face in accordance with ISO 5752 serie 20, NF EN 558-1 serie 20.
- Sleeve with body in dovetail shape ensures a perfect assembling (for high vacuum we can stick it).  
Aluminium reinforced sleeve: on request.
- Stem: high and low semi stem giving a high flow coefficient.
- Machined disc on periphery giving a low and regular torque.
- Stem unejectable.
- Bearing: stainless steel teflon lined.
- Dovetail type sleeve. ȳ

**CONSTRUCTION MATERIAL** (see chart page 18)

- Body: cast iron, ductile iron, steel, stainless steel on request.
- Disc: chromed cast iron, stainless steel 316, 316 L.  
Possibility various alloys, bronze aluminium, 904 L (Uranus B6®), etc.
- Sleeve: heat EPDM, nitril, FPM (type Viton®), silicone, etc.

**ȳ COATING**

- Body: oven backed epoxy coated, food quality, thickness 150 µ, RAL 5019.
- Disc: chromed disc, possibility rilsan, etc.

**ȳ WORKING CONDITIONS**

- Maximum working pressure: 16 bar.
- Maximum temperature according to type of sleeve (see table page 18).

**ȳ AGREEMENT AND TESTING**

- Manufacture according to the requirements of the European directive 97/23/CE «Equipments under pressure» : category III module H.
- Test procedures are established according to NF EN 12266-1, NF EN 12266-2 - DIN 3230 ISO 5208.

**ȳ CONNECTIONS**

- TECFLY: between flanges PN 10 and PN 16: according to EN 1092-2.  
Adjustable between flanges ASME B16.5, ASA 150.
- TECFLY LUG: standard: between flanges PN 10/16 up to DN 150, PN 10 for upper diameters.  
Mounting between flanges ASA 150 and PN 16 for DN > 150 on request.

**ȳ HANDLING POSSIBILITIES**

- Mounting plate in accordance with ISO 5211 for easy assembling of following operating systems: - ductile iron triple use handle (see details on page 19), - manual gear box with open / position indicator, - single or double acting pneumatic actuator, - electrical actuator 24, 48, 230/400 V single or three phases, 50 or 60 Hz.

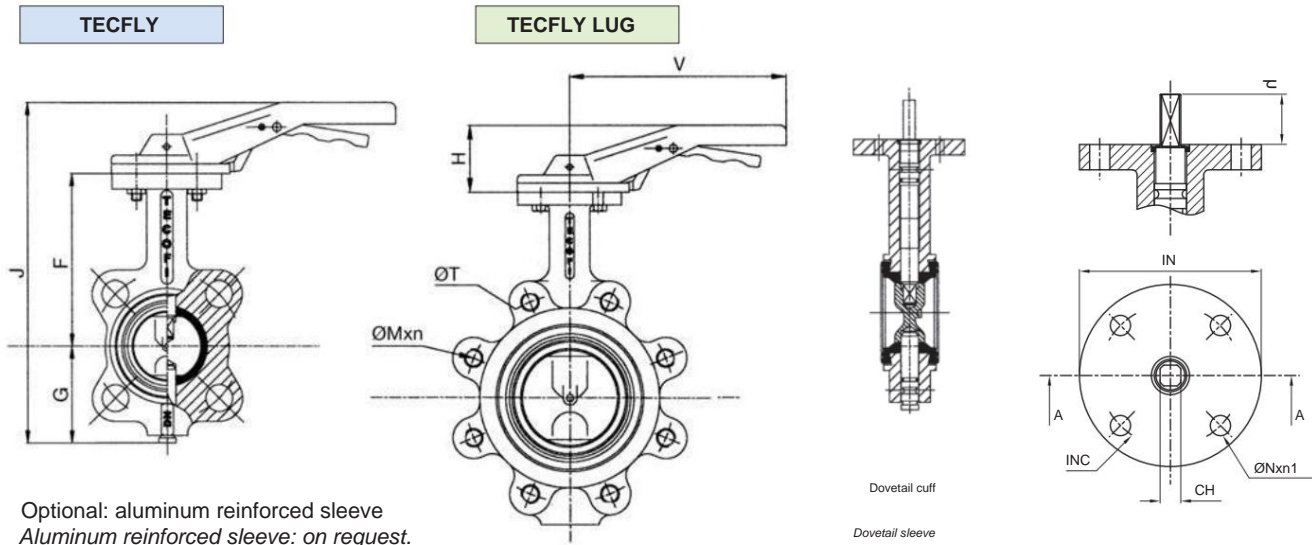


# TECFLY range DN 40 to 300

# TECFLY range DN 40 to 300

## Technical characteristics

## Technical characteristics



Optional: aluminum reinforced sleeve  
 Aluminum reinforced sleeve: on request.

### Dimensions et poids / Dimensions and weight

| DN      | Faucet sizes<br>Valve dimensions |       |       |       |     |       |          |       | 3F handle<br>Control handle |     | Embase<br>Mounting plate |             |        |    |        |            | Weight(1)<br>Weight |  |
|---------|----------------------------------|-------|-------|-------|-----|-------|----------|-------|-----------------------------|-----|--------------------------|-------------|--------|----|--------|------------|---------------------|--|
|         | J                                | F     | G     | L     | Ø T | nx US | H        | IN    | ISO                         | Ø W | Ø K                      | n1 x FEMALE | CH     | h  | TECFLY | TECFLY LUG |                     |  |
| mm inch | mm mm                            | mm mm | mm mm | mm mm | mm  |       | mm mm    | mm mm |                             | mm  | mm                       |             | mm mm  |    | kg     | kg         |                     |  |
| 40*     | 1"1/2                            | 258   | 134   | 66    | 33  | 110   | 4 x M16  | 58    | 180                         | F07 | 90                       | 70          | 4 x 10 | 11 | 32     | 3.0        | 3.6                 |  |
| 50      | 2"                               | 270   | 140   | 72    | 43  | 125   | 4 x M16  | 58    | 180                         | F07 | 90                       | 70          | 4 x 10 | 11 | 32     | 3.6        | 4.6                 |  |
| 65      | 2"1/2                            | 289   | 153   | 78    | 46  | 145   | 4 x M16  | 58    | 180                         | F07 | 90                       | 70          | 4 x 10 | 11 | 32     | 4.3        | 5.4                 |  |
| 80      | 3"                               | 306   | 159   | 89    | 46  | 160   | 8 x M16  | 58    | 180                         | F07 | 90                       | 70          | 4 x 10 | 11 | 32     | 4.9        | 6.5                 |  |
| 100     | 4"                               | 338   | 178   | 102   | 52  | 180   | 8 x M16  | 58    | 220                         | F07 | 90                       | 70          | 4 x 10 | 11 | 32     | 6.2        | 7.9                 |  |
| 125     | 5"                               | 367   | 191   | 117   | 56  | 210   | 8 x M16  | 58    | 220                         | F07 | 90                       | 70          | 4 x 10 | 14 | 32     | 8.2        | 10.0                |  |
| 150     | 6"                               | 391   | 203   | 130   | 56  | 240   | 8 x M20  | 58    | 220                         | F07 | 90                       | 70          | 4 x 10 | 14 | 32     | 9.6        | 11.9                |  |
| 200     | 8"                               | 463   | 238   | 159   | 60  | 295   | 8 x M20  | 66    | 318                         | F10 | 125                      | 102         | 4 x 12 | 17 | 45     | 15.9       | 19.4                |  |
| 250     | 10"                              | 524   | 268   | 190   | 68  | 350   | 12 x M20 | 66    | 318                         | F10 | 125                      | 102         | 4 x 12 | 22 | 45     | 23.3       | 31.3                |  |
| 300     | 12"                              | 594   | 306   | 222   | 78  | 400   | 12 x M20 | 66    | 318                         | F10 | 125                      | 102         | 4 x 12 | 22 | 45     | 31.4       | 40.4                |  |

\* Adaptable DN 32 on TECFLY smooth ear model. DN 32 adaptable on TECFLY model with smooth ears. 1. Weight = valve with handle / Weight = valve with handle



## New VPN model now available

New model VPN now available

All options and accessories are available as standard.  
 More information and technical sheets on our website:  
[www.tecofi.fr](http://www.tecofi.fr)

All options and accessories available in standard.  
 More information and technical data sheets on our website :  
[www.tecofi.fr](http://www.tecofi.fr)



**TECFLY range DN 40 to 300**

## Technical characteristics

**Construction Standard / Standard construction**

| Model / Model                                   | TECFLY  |   |  | TECFLY LUG   |   |  |
|---|---|---|--|--|---|--|
|   | VP3442  | VP3448  | VP3449                                     | VP3642   | VP3648  | VP3649                                     |
| Corps / Body                                    | Source / Cast iron - EN GJL-250   |   |  |  |   |  |
| Butterfly / Disc                                | CuproAlu<br>Bronze<br>aluminium<br>With Al10 Ni5 Fe4                          | Ductile iron chromed<br>Chromed<br>ductile iron<br>AND GJS-400-15 | Stainless Steel 316<br>Stainless steel 316 | CuproAlu<br>Bronze<br>aluminium<br>With Al10 Ni5 Fe4   | Ductile iron chromed<br>Chromed<br>ductile iron<br>AND GJS-400-15 | Stainless Steel 316<br>Stainless steel 316 |
| Cuff / Sleeve                                   | EPDM chaleur / Heat EPDM  |   |  |  |   |  |
| Connection / Connection                         | Between flanges PN 10 - PN 16 - ASA 150<br>Wafer type PN 10 - PN 16 - ASA 150 |   |  | Threaded ears PN 10/16 from DN 40 to DN 150<br>PN 10 from DN 200 to DN 300<br>Threaded lugs PN 10/16 from DN 40 to DN 150<br>PN 10 from DN 200 to DN 300 |   |  |
| Terms of service<br>Pressure temperature rating | PMS : 16 bar -15°C / 130°C (-30°C / 150°C en pointe / peak temperature)       |   |  |  |   |  |

For other constructions, refer to page 12 "Table of materials".

For more information about construction, please refer to page 12 «Materials chart».

**Service conditions according to the nature of the sleeve / Pressure temperature rating according to sleeve material**

|                              |   |
|------------------------------|---|
| CSM (type Hypalon®)          | PMS : 16 bar +4°C / 80°C (-20°C / 110°C en pointe / peak temperature)   |
| FPM (type Viton®)            | PMS : 16 bar -10°C / 170°C (-20°C / 200°C en pointe / peak temperature) |
| Silicone / Silicone          | PMS : 16 bar -20°C / 170°C (-40°C / 200°C en pointe / peak temperature) |
| Nitrile (NBR) / Nitril (NBR) | PMS : 16 bar -10°C / 80°C (-20°C / 90°C en pointe / peak temperature)   |
| PTFE                         | PMS : 16 bar -10°C / 130°C (-40°C / 200°C en pointe / peak temperature) |

**TECFLY****Valves article codes / Valve's codes**

| DN      | VP3442-02   |  | VP3448-02  |                 | VP3449-02 |  |
|---------|---|--|--|-----------------|-----------|--|
|         | Corps : fonte / Body: cast iron<br>Papillon : cuprous alu /<br>Disc: bronze aluminium<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM | Corps : fonte / Body: cast iron<br>Butterfly: ductile iron /<br>Disc: ductile iron<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM | Corps : fonte / Body: cast iron<br>Butterfly: stainless steel /<br>Disc: stainless steel<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |                 |           |  |
| mm inch |   |  |  |                 |           |  |
| 40      | 1"1/2   | VP3442-02EP0040  | VP3448-02EP0040  | VP3449-02EP0040 |           |  |
| 50      | 2"  | VP3442-02EP0050  | VP3448-02EP0050  | VP3449-02EP0050 |           |  |
| 65      | 2"1/2   | VP3442-02EP0065  | VP3448-02EP0065  | VP3449-02EP0065 |           |  |
| 80      | 3"  | VP3442-02EP0080  | VP3448-02EP0080  | VP3449-02EP0080 |           |  |
| 100     | 4"  | VP3442-02EP0100  | VP3448-02EP0100  | VP3449-02EP0100 |           |  |
| 125     | 5"  | VP3442-02EP0125  | VP3448-02EP0125  | VP3449-02EP0125 |           |  |
| 150     | 6"  | VP3442-02EP0150  | VP3448-02EP0150  | VP3449-02EP0150 |           |  |
| 200     | 8"  | VP3442-02EP0200  | VP3448-02EP0200  | VP3449-02EP0200 |           |  |
| 250     | 10"   | VP3442-02EP0250  | VP3448-02EP0250  | VP3449-02EP0250 |           |  |
| 300     | 12"   | VP3442-02EP0300  | VP3448-02EP0300  | VP3449-02EP0300 |           |  |

**TECFLY LUG****Valves article codes / Valve's codes**

| DN      | VP3642-02   |  | VP3648-02  |                 | VP3649-02 |  |
|---------|---|--|--|-----------------|-----------|--|
|         | Corps : fonte / Body: cast iron<br>Papillon : cuprous alu /<br>Disc: bronze aluminium<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM | Corps : fonte / Body: cast iron<br>Butterfly: ductile iron /<br>Disc: ductile iron<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM | Corps : fonte / Body: cast iron<br>Butterfly: stainless steel /<br>Disc: stainless steel<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |                 |           |  |
| mm inch |   |  |  |                 |           |  |
| 40      | 1"1/2   | VP3642-02EP0040  | VP3648-02EP0040  | VP3649-02EP0040 |           |  |
| 50      | 2"  | VP3642-02EP0050  | VP3648-02EP0050  | VP3649-02EP0050 |           |  |
| 65      | 2"1/2   | VP3642-02EP0065  | VP3648-02EP0065  | VP3649-02EP0065 |           |  |
| 80      | 3"  | VP3642-02EP0080  | VP3648-02EP0080  | VP3649-02EP0080 |           |  |
| 100     | 4"  | VP3642-02EP0100  | VP3648-02EP0100  | VP3649-02EP0100 |           |  |
| 125     | 5"  | VP3642-02EP0125  | VP3648-02EP0125  | VP3649-02EP0125 |           |  |
| 150     | 6"  | VP3642-02EP0150  | VP3648-02EP0150  | VP3649-02EP0150 |           |  |
| 200     | 8"  | VP3642-02EP0200  | VP3648-02EP0200  | VP3649-02EP0200 |           |  |
| 250     | 10"   | VP3642-02EP0250  | VP3648-02EP0250  | VP3649-02EP0250 |           |  |
| 300     | 12"   | VP3642-02EP0300  | VP3648-02EP0300  | VP3649-02EP0300 |           |  |



## TECFLY range DN 40 to 300

Technical characteristics

### 3F triple function handle



## TECFLY range DN 40 to 300

Technical characteristics

### Triple use handle 3F

#### 1 Notched handle Notched handle

Resistant and light non-slip handle in ductile cast iron, ensures thanks to a notched sector 10 fixed positions of adjustment. Axis and stainless steel spring.

*Ductile iron handle (light and resistant).  
10 positions notched locking quadrant. Stainless steel spring and pin.*



#### 2 Padlockable handle Locked notched handle

Padlockable in all positions on the notched sector to secure the tap.

*Locked in all positions on notched quadrant positions for safety.*



#### 3 Regulation handle Regulating handle

Convertible to regulation position: ensures fine regulation without any dismantling thanks to the installation of the "reg kit" on the handle.

*Regulation position: ensures fine regulation without any dismantling thanks to the installation of «regul kit» on the handle.*

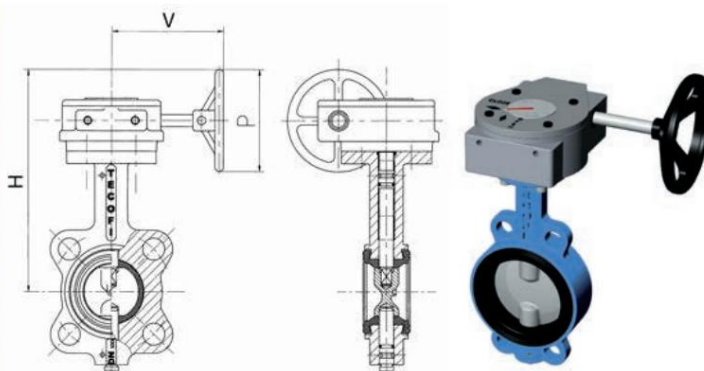


**TECFLY range DN 40 to 300****Actuators****Manual gearbox / Manual gear box**

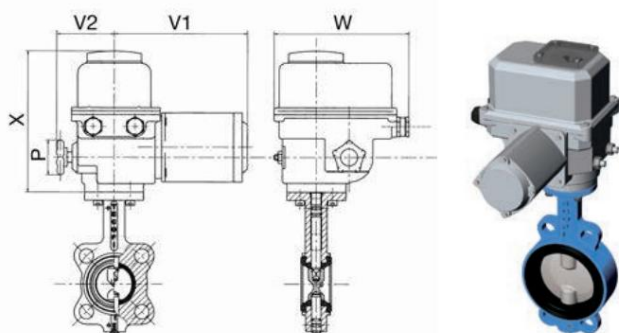
| DN  | Reducer / Gear box |       |     | Type | Nb tours<br>Nb turn | Poids<br>Weight | Actuator part number<br>Actuator code |                   |
|-----|--------------------|-------|-----|------|---------------------|-----------------|---------------------------------------|-------------------|
|     | H                  | V ø P | mm  |      |                     |                 |                                       |                   |
|     | inch               | mm    | mm  |      |                     | kg              |                                       |                   |
| 40  | 1"1/2              | 249   | 148 | 150  | 1T                  | 6               | 4.5* (6.6**)                          | PREDUCT-0040      |
| 50  | 2                  | 255   | 148 | 150  | 1T                  | 6               | 4.5* (7.2**)                          | PREDUCT-0040      |
| 65  | 2"1/2              | 268   | 148 | 150  | 1T                  | 6               | 4.5* (7.9**)                          | PREDUCT-0040      |
| 80  | 3"                 | 274   | 148 | 150  | 1T                  | 6               | 4.5* (8.4**)                          | PREDUCT-0040      |
| 100 | 4"                 | 293   | 148 | 150  | 1T                  | 6               | 4.5* (9.6**)                          | PREDUCT-0040      |
| 125 | 5"                 | 306   | 148 | 150  | 1T                  | 6               | 4.6* (11.7**)                         | VPREDUCT-0125     |
| 150 | 6"                 | 318   | 148 | 150  | 1T                  | 6               | 4.6* (13.2**)                         | VPREDUCT-0125 10" |
| 200 | 8"                 | 428   | 238 | 300  | 1T                  | 7.5             | (23.9**)                              | VPREDUCT-0200     |
| 250 | 10"                | 458   | 238 | 300  | 1T                  | 7.5             | 9.9* (31.2**)                         | VPREDUCT-0250     |
| 300 | 12"                | 496   | 238 | 300  | 1T                  | 7.5             | 9.9* (39.3**)                         | PREDUCT-0250      |

\* Weight = reducer / Weight = gear box

\*\* Weight = valve + reducer / Weight = valve + gear box

**Electric motors / Electric actuators****BERNARD**

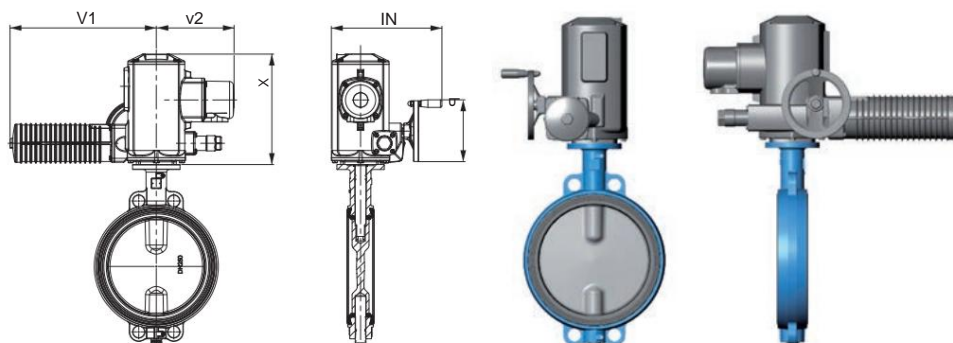
Electric motor - Differential pressure 10 bar / Electric actuator - Differential pressure 10 bar



| DN  | Feed Power |                      | Type                | Dimensions |     |     |     |        |     | Couple maxi<br>Maxi torque<br>Nm | Weight<br>Weight<br>kg | Actuator part number<br>Actuator code |                  |
|-----|------------|----------------------|---------------------|------------|-----|-----|-----|--------|-----|----------------------------------|------------------------|---------------------------------------|------------------|
|     | mm         | inch                 |                     | x          | ø P | V1  | v2  | In ISO |     |                                  |                        |                                       |                  |
| 40  | 1"1/2      | 400 V                | Three phase/3 phase | OA6        | 224 | 90  | 260 | 116    | 190 | F05/F07                          | 60                     | 7.0* (10.0**)                         | VPMOTELEC-OA6001 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-OA6002 |
|     |            | Single phase/1 phase | VPMOTELEC-OA6003    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 50  | 2          | 400 V                | Three phase/3 phase | OA6        | 224 | 90  | 260 | 116    | 190 | F05/F07                          | 60                     | 7.0* (10.6**)                         | VPMOTELEC-OA6001 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-OA6002 |
|     |            | Single phase/1 phase | VPMOTELEC-OA6003    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 65  | 2"1/2      | 400 V                | Three phase/3 phase | OA6        | 224 | 90  | 260 | 116    | 190 | F05/F07                          | 60                     | 7.0* (11.3**)                         | VPMOTELEC-OA6001 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-OA6002 |
|     |            | Single phase/1 phase | VPMOTELEC-OA6003    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 80  | 3"         | 400 V                | Three phase/3 phase | OA6        | 224 | 90  | 260 | 116    | 190 | F05/F07                          | 60                     | 7.0* (11.9**)                         | VPMOTELEC-OA6001 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-OA6002 |
|     |            | Single phase/1 phase | VPMOTELEC-OA6003    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 100 | 4"         | 400 V                | Three phase/3 phase | OA6        | 224 | 90  | 260 | 116    | 190 | F05/F07                          | 60                     | 7.0* (13.2**)                         | VPMOTELEC-OA6001 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-OA6002 |
|     |            | Single phase/1 phase | VPMOTELEC-OA6003    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 125 | 5"         | 400 V                | Three phase/3 phase | OA8        | 224 | 90  | 260 | 116    | 190 | F05/F07                          | 100                    | 7.0* (15.2**)                         | VPMOTELEC-OA8001 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-OA8002 |
|     |            | Single phase/1 phase | VPMOTELEC-OA8003    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 150 | 6"         | 400 V                | Three phase/3 phase | OA15       | 224 | 100 | 260 | 116    | 190 | F05/F07                          | 150                    | 7.0* (16.6**)                         | VPMOTELEC-OA1501 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-OA1502 |
|     |            | Single phase/1 phase | VPMOTELEC-OA1503    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 200 | 8"         | 400 V                | Three phase/3 phase | AS18       | 177 | 100 | 312 | 167    | 315 | F07/F10                          | 200                    | 18.0* (33.9**)                        | VPMOTELEC-AS1801 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-AS1802 |
|     |            | Single phase/1 phase | VPMOTELEC-AS1803    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 250 | 10"        | 400 V                | Three phase/3 phase | AS50       | 177 | 250 | 340 | 169    | 315 | F10/F07                          | 600                    | 20.0* (43.3**)                        | VPMOTELEC-AS5001 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-AS5002 |
|     |            | Single phase/1 phase | VPMOTELEC-AS5003    |            |     |     |     |        |     |                                  |                        |                                       |                  |
| 300 | 12"        | 400 V                | Three phase/3 phase | AS50       | 177 | 250 | 340 | 169    | 315 | F10/F07                          | 600                    | 20.0* (51.4**)                        | VPMOTELEC-AS5001 |
|     |            | 230 V                | Three phase/3 phase |            |     |     |     |        |     |                                  |                        |                                       | VPMOTELEC-AS5002 |
|     |            | Single phase/1 phase | VPMOTELEC-AS5003    |            |     |     |     |        |     |                                  |                        |                                       |                  |

\* Electric motor weight / Electric actuator weight

\*\* Weight of motorized valve / Weight of valve with actuator

**TECFLY range DN 40 to 300****Actuators****PAIN**Electric motor - Differential pressure 10 bar - *Electric actuator / Differential pressure 10 bar*

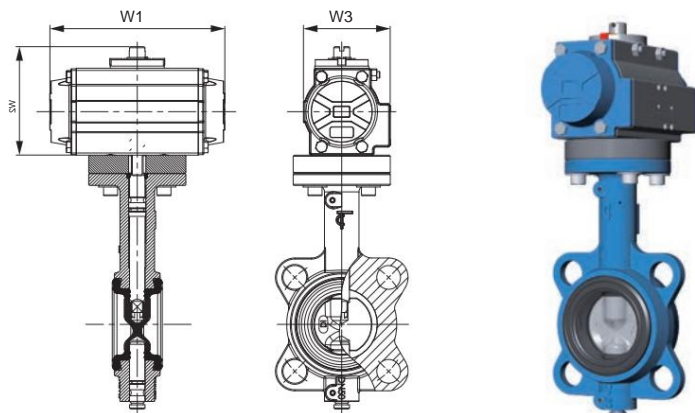
| DN  |       | Feed Power |                       | Type   | ø P<br>mm | x<br>mm | Dimensions |     |       | In ISO<br>mm | Couple maxi<br>Maxi torque<br>Nm | Weight<br>Weight<br>kg | Actuator part<br>number<br>Actuator code |
|-----|-------|------------|-----------------------|--------|-----------|---------|------------|-----|-------|--------------|----------------------------------|------------------------|--|
| mm  | inch  | 400 V      | 230 V                 |        |           |         | V1         | V2  |       |              |                                  |                        |  |
| 40  | 1"1/2 | 400 V      | Three phase / 3 phase | SG05.1 | 160       | 275     | 291        | 185 | 248.5 | F07          | 150                              | 18* (21**)             | VPMOTELEC-SG0510                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG0511                         |
| 50  | 2     | 400 V      | Three phase / 3 phase | SG05.1 | 160       | 275     | 291        | 185 | 248.5 | F07          | 150                              | 18* (21.6**)           | VPMOTELEC-SG0510                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG0511                         |
| 65  | 2"1/2 | 400 V      | Three phase / 3 phase | SG05.1 | 160       | 275     | 291        | 185 | 248.5 | F07          | 150                              | 18* (22.3**)           | VPMOTELEC-SG0510                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG0511                         |
| 80  | 3"    | 400 V      | Three phase / 3 phase | SG05.1 | 160       | 275     | 291        | 185 | 248.5 | F07          | 150                              | 18* (22.9**)           | VPMOTELEC-SG0510                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG0511                         |
| 100 | 4"    | 400 V      | Three phase / 3 phase | SG05.1 | 160       | 275     | 291        | 185 | 248.5 | F07          | 150                              | 18* (24.6**)           | VPMOTELEC-SG0510                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG0511                         |
| 125 | 5"    | 400 V      | Three phase / 3 phase | SG05.1 | 160       | 275     | 291        | 185 | 248.5 | F07          | 150                              | 18* (26.2**)           | VPMOTELEC-SG0510                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG0511                         |
| 150 | 6"    | 400 V      | Three phase / 3 phase | SG05.1 | 160       | 275     | 291        | 185 | 248.5 | F07          | 150                              | 18* (27.6**)           | VPMOTELEC-SG0510                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG0511                         |
| 200 | 8"    | 400 V      | Three phase / 3 phase | SG07.1 | 160       | 275     | 291        | 185 | 248.5 | F10          | 300                              | 18* (33.9**)           | VPMOTELEC-SG0710                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG0711                         |
| 250 | 10"   | 400 V      | Three phase / 3 phase | SG10.1 | 160       | 291     | 301        | 205 | 273.5 | F10          | 600                              | 24* (47.3**)           | VPMOTELEC-SG1010                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG1011                         |
| 300 | 12"   | 400 V      | Three phase / 3 phase | SG10.1 | 160       | 291     | 301        | 205 | 273.5 | F10          | 600                              | 24* (55.4**)           | VPMOTELEC-SG1010                         |
|     |       | 230 V      |                       |        |           |         |            |     |       |              |                                  |                        | VPMOTELEC-SG1011                         |

\* Electric motor weight / *Electric actuator weight*\*\* Weight of motorized valve / *Weight of valve with actuator***Types of electric motors can be changed according to service conditions**

For the choice of other types of motor, it is necessary to specify: - the hydraulic characteristics of the medium: the maximum differential pressure of displacement of the fluid. - the installation environment: minimum and maximum outside temperatures, installation conditions (very humid, corrosive environment, etc.) - the nature of the site: nuclear site, site with a high risk of explosion, etc. - the wishes operating techniques: closing/opening time, type of regulation, etc.

**Electric actuators can be modified according to working conditions**

To determinate other actuators type you need: - *Environment hydraulic characteristics: the maximal differential pressure of the moving fluid* - *Installation environment: minimal and maximal exterior temperature, installation conditions (wet, corrosive environment...)* - *Site nature: nuclear site, explosion risk site...* - *Technical functioning wishes: opening/closing time, regulation type...*

**TECFLY range DN 40 to 300****Actuators****TECFLY range DN 40 to 300****Actuators****ȳ Pneumatic cylinder / Pneumatic actuator****Single-acting pneumatic cylinder  
Single acting pneumatic actuator**

P = 10 bar max

| DN  | W1    | W2    | W3    | Type  |        | Poids<br>Weight<br>kg | Actuator part<br>number<br>Actuator code |
|-----|-------|-------|-------|-------|--------|-----------------------|--|
| mm  | inch  | mm    | mm    | mm    |        |                       |  |
| 40  | 1*1/2 | 162.0 | 100.5 | 80.5  | SR 63  | 1.8* (4.4**)          | VERIN1/4T-SR063                          |
| 50  | 2     | 162.0 | 100.5 | 80.5  | SR 63  | 1.8* (5.0**)          | VERIN1/4T-SR063                          |
| 65  | 2*1/2 | 237.5 | 128.5 | 106.0 | SR 85  | 4.3* (8.2**)          | VERIN1/4T-SR085                          |
| 80  | 3*    | 271.5 | 141.5 | 123.0 | SR 100 | 6.5* (11.0**)         | VERIN1/4T-SR100                          |
| 100 | 4*    | 271.5 | 141.5 | 123.0 | SR 100 | 6.5* (12.2**)         | VERIN1/4T-SR100                          |
| 125 | 5*    | 328.0 | 171.5 | 137.0 | SR 115 | 10.9* (18.6**)        | VERIN1/4T-SR115                          |
| 150 | 6*    | 328.0 | 171.5 | 137.0 | SR 115 | 10.9* (20.0**)        | VERIN1/4T-SR115                          |
| 200 | 8*    | 522.0 | 218.0 | 187.0 | SR 160 | 29.5* (43.9**)        | VERIN1/4T-SR160                          |
| 250 | 10*   | 575.0 | 269.0 | 218.0 | SR 200 | 50.4* (72.2**)        | VERIN1/4T-SR200                          |
| 300 | 12*   | 575.0 | 269.0 | 218.0 | SR 200 | 50.4* (81.2**)        | VERIN1/4T-SR200                          |

\* Weight = pneumatic cylinder / Weight = pneumatic actuator

\*\* Weight = valve + pneumatic cylinder / Weight = valve + pneumatic actuator

**Double-acting pneumatic cylinder  
Double acting pneumatic actuator**

P = 10 bar max

| DN  | W1    | W2    | W3    | Type  |        | Poids<br>Weight<br>kg | Actuator part<br>number<br>Actuator code |
|-----|-------|-------|-------|-------|--------|-----------------------|--|
| mm  | inch  | mm    | mm    | mm    |        |                       |  |
| 40  | 1*1/2 | 162.0 | 100.5 | 80.5  | DA 63  | 1.5* (4.1**)          | VERIN1/4T-DA063                          |
| 50  | 2     | 162.0 | 100.5 | 80.5  | DA 63  | 1.5* (4.7**)          | VERIN1/4T-DA063                          |
| 65  | 2*1/2 | 162.0 | 100.5 | 80.5  | DA 63  | 1.5* (5.4**)          | VERIN1/4T-DA063                          |
| 80  | 3*    | 162.0 | 100.5 | 80.5  | DA 63  | 1.5* (6.0**)          | VERIN1/4T-DA063                          |
| 100 | 4*    | 207.0 | 117.0 | 94.5  | DA 75  | 2.5* (8.2**)          | VERIN1/4T-DA075                          |
| 125 | 5*    | 237.5 | 128.5 | 106.0 | DA 85  | 3.4* (11.1**)         | VERIN1/4T-DA085                          |
| 150 | 6*    | 271.5 | 141.5 | 123.0 | DA 100 | 5.0* (14.1**)         | VERIN1/4T-DA100                          |
| 200 | 8*    | 328.0 | 171.5 | 137.0 | DA 115 | 8.0* (22.46**)        | VERIN1/4T-DA115                          |
| 250 | 10*   | 366.0 | 183.5 | 148.0 | DA 125 | 10.0* (31.8**)        | VERIN1/4T-DA125                          |
| 300 | 12*   | 522.0 | 218.0 | 187.0 | DA 160 | 19.6* (49.5**)        | VERIN1/4T-DA160                          |

\* Weight = pneumatic cylinder / Weight = pneumatic actuator

\*\* Weight = valve + pneumatic cylinder / Weight = valve + pneumatic actuator

For the adjustment of single-acting cylinders on valves, it is essential to specify the position of the butterfly in the event of a lack of air:

NO - normally open valve

NC - normally closed valve

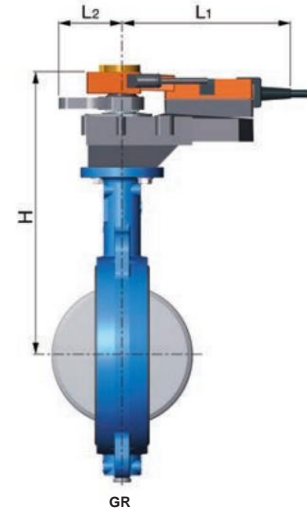
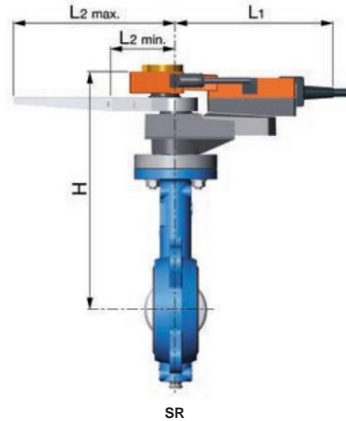
For the regulating of single acting pneumatic actuator on butterfly valves, it is necessary to specify the position of the disc in case of lack of air :

NO - normally opened valve

NC - normally closed valve

**TECFLY range DN 40 to 300****Actuators****ÿ Electric motors for low differential pressure****ÿ APPLICATION**

- General use: installation of heating, ventilation and stationary air conditioning.

**Moteur BELIMO / BELIMO actuator**

| DN  | Feed Power | Reference Reference      | H  | L1  |     | L2 |     | Weight(1)<br>Weight | Actuator part number<br>Actuator code |
|-----|------------|--------------------------|----|-----|-----|----|-----|---------------------|---------------------------------------|
|     |            |                          |    | mm  | mm  | mm | mm  |                     |                                       |
| 40  | 1 1/2"     | 115 - 230 V<br>24V AC/DC | SR | 247 | 171 | 70 | 176 | 4.0                 | VPMOTELEC-SR0                         |
|     |            |                          |    |     |     |    |     |                     | VPMOTELEC-SR1                         |
| 50  | 2"         | 115 - 230 V<br>24V AC/DC | SR | 253 | 171 | 70 | 176 | 4.6                 | VPMOTELEC-SR0                         |
|     |            |                          |    |     |     |    |     |                     | VPMOTELEC-SR1                         |
| 65  | 2 1/2"     | 115 - 230 V<br>24V AC/DC | SR | 266 | 171 | 70 | 176 | 5.3                 | VPMOTELEC-SR0                         |
|     |            |                          |    |     |     |    |     |                     | VPMOTELEC-SR1                         |
| 80  | 3"         | 115 - 230 V<br>24V AC/DC | SR | 272 | 171 | 70 | 176 | 5.9                 | VPMOTELEC-SR0                         |
|     |            |                          |    |     |     |    |     |                     | VPMOTELEC-SR1                         |
| 100 | 4"         | 115 - 230 V<br>24V AC/DC | GR | 291 | 182 | 70 |     | 8.1                 | VPMOTELEC-GR0                         |
|     |            |                          |    |     |     |    |     |                     | VPMOTELEC-GR1                         |
| 125 | 5"         | 115 - 230 V<br>24V AC/DC | GR | 304 | 182 | 70 |     | 10.0                | VPMOTELEC-GR0                         |
|     |            |                          |    |     |     |    |     |                     | VPMOTELEC-GR1                         |
| 150 | 6"         | 115 - 230 V<br>24V AC/DC | GR | 316 | 182 | 70 |     | 11.5                | VPMOTELEC-GR0                         |
|     |            |                          |    |     |     |    |     |                     | VPMOTELEC-GR1                         |

1. Weight of valve + electric motor / Weight of valve + electric actuator

**ÿ GENERAL CHARACTERISTICS OF "SR" AND "GR" ENGINES**

- Alimentation : 100... 240V 50/60 Hz - 24V AC/DC.
- Maneuvering time: 90 seconds (SR) - 150 seconds (GR).
- Protection index: IP 54.
- Ambient temperature: 0 to 50°C.
- Fluid temperature: from -20 to 100°C (GR type), from +5 to 100°C (SR type).
- Limit switch: 2 changeover contacts. (optional for the GR model).
- Angle of rotation: 95° maxi adjustable by two stops.
- Emergency manual control: disengagement system.

**Note.** It is possible to couple two GR type servomotors to increase the torque.

**ÿ ACCESSORIES ADAPTABLE ON ALL MOTORS****Electrical accessories -**

- Auxiliary contact modules: 1 changeover contact.
- Auxiliary contact modules: 2 changeover contacts.
- Servo potentiometer.

**Mechanical accessories -**

- Axle extensions for short axles.
- Ball joints.
- Mounting accessories.

**TECFLY range DN 40 to 300****Actuators****ÿ Electric actuators for low differential pressure****ÿ APPLICATION**

- General use: installation of heating, air-conditioning and aeration.

**ÿ «SR» AND «GR» MOTEURS GENERAL CHARACTERISTICS**

- Power: 100... 240V 50/60 Hz - 24V AC/DC.
- Operating time: 90 seconds (SR) - 150 seconds (GR).
- Protection class: IP 54.
- Ambient temperature : 0° to 50°C.
- Temperature of medium: from -20° to 100°C (GR), from +5° to 100°C (SR).
- Micro-switch: 2 invert switches (on request for GR).
- Rotation angle: 95° max with two stops.
- Emergency handle: declutching system.

**Nota.** For more torques you can easily assemble two GR type.

**ÿ ACCESSORIES ADAPTED TO ALL ELECTRIC ACTUATORS****Electric accessories**

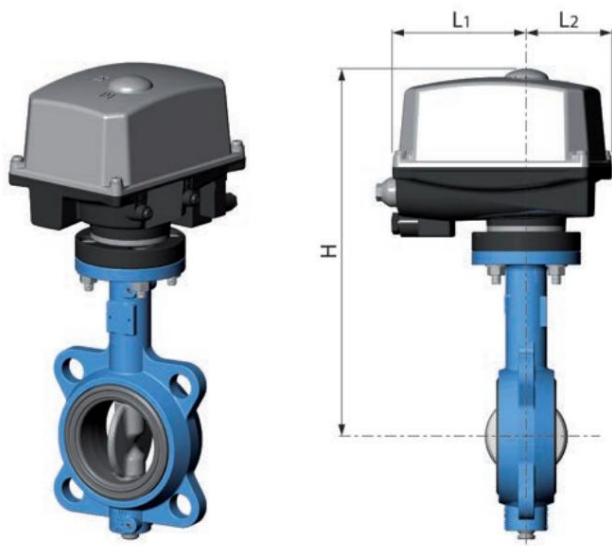
- Micro-switch set: 1 invert switch.
- Micro-switch set: 2 invert switches.
- Electric servo-control potentiometer.

**Mechanical accessories -**

- Extention for small stem.
- Knuckle.
- Assembling accessories.

**TECFLY range DN 40 to 300****Actuators****ÿ Electric motors for low differential pressure****ÿ APPLICATION**

- General use: installation of heating, ventilation and stationary air conditioning.

**BERNARD LEA engine / BERNARD LEA actuator**

| DN  |       | Feed Power  | Reference Reference | H   | L1  | L2 | Weight(1)<br>Weight | Actuator part number<br>Actuator code |
|-----|-------|-------------|---------------------|-----|-----|----|---------------------|---------------------------------------|
| mm  | inch  |             |                     |     |     |    |                     |                                       |
| 40  | 1"1/2 | 115 - 230 V | LEA2                | 285 | 100 | 66 | 5.0                 | VPMOTELEC-LEA200                      |
|     |       | 24V AC/DC   |                     |     |     |    |                     | VPMOTELEC-LEA201                      |
| 50  | 2"    | 115 - 230 V | LEA2                | 292 | 100 | 66 | 5.6                 | VPMOTELEC-LEA200                      |
|     |       | 24V AC/DC   |                     |     |     |    |                     | VPMOTELEC-LEA201                      |
| 65  | 2"1/2 | 115 - 230 V | LEA2                | 305 | 100 | 66 | 6.3                 | VPMOTELEC-LEA200                      |
|     |       | 24V AC/DC   |                     |     |     |    |                     | VPMOTELEC-LEA201                      |
| 80  | 3"    | 115 - 230 V | LEA2                | 311 | 100 | 66 | 6.9                 | VPMOTELEC-LEA200                      |
|     |       | 24V AC/DC   |                     |     |     |    |                     | VPMOTELEC-LEA201                      |
| 100 | 4"    | 115 - 230 V | LEA3                | 330 | 100 | 66 | 8.2                 | VPMOTELEC-LEA300                      |
|     |       | 24V AC/DC   |                     |     |     |    |                     | VPMOTELEC-LEA301                      |
| 125 | 5"    | 115 - 230 V | LEA3                | 342 | 100 | 66 | 10.2                | VPMOTELEC-LEA300                      |
|     |       | 24V AC/DC   |                     |     |     |    |                     | VPMOTELEC-LEA301                      |
| 150 | 6"    | 115 - 230 V | LEA3                | 355 | 100 | 66 | 11.6                | VPMOTELEC-LEA300                      |
|     |       | 24V AC/DC   |                     |     |     |    |                     | VPMOTELEC-LEA301                      |

1. Weight of valve + electric motor / Weight of valve + electric actuator

**ÿ GENERAL CHARACTERISTICS OF BERNARD LEA ENGINES**

- Alimentation : 115... 240V 50/60 Hz - 24V AC/DC.
- Maneuvering time: 20 seconds.
- Protection index: IP 65.
- Operating temperature: -10 to 50°C. - 2 limit switches.
- Anti-condensation resistance.
- Emergency manual control.

**ÿ ACCESSORIES**

- Feedback potentiometer: 0... 1000 ÿ.
- Position feedback: 4 - 20 mA.
- Proportional control: 4 - 20 mA.

**TECFLY range DN 40 to 300****Actuators****ÿ Electric actuators for low differential pressure****ÿ APPLICATION**

- General use: installation of heating, air-conditioning and aeration.

**ÿ BERNARD LEA ACTUATOR GENERAL CHARACTERISTICS**

- Power: 115... 240V 50/60 Hz - 24V AC/DC.
- Operating time: 20 seconds.
- Protection class: IP 65.
- Ambient temperature: -10°C to 50°C. - 2 limit switches detectors.
- Anti-condensation resistor.
- Manual emergency operating.

**ÿ ACCESSORIES**

- Signaling potentiometer: 0... 1000 - Oh
- Position signaling: 4 - 20 mA.
- Proportional control 4 - 20 mA.



**TECLARGE range****DN ÿ 350**

Presentation

**ÿ APPLICATION**

General use: water, sea water, discharges, hydrocarbons, etc.

**ÿ MODELS**

TECLARGE STANDARD: mounting between flanges PN 10 (PN 16 and ASA 150 on request).

TECLARGE FL: mounting with double flanges PN 10 (PN 16 and ASA 150 on request).

**ÿ GENERAL CHARACTERISTICS -**

Design according to standard NF EN 593.

- Watertight closure in both directions.

NF EN 12266-1, NF EN 12266-2 - ISO 5208 - DIN 3230.

- Gauge according to ISO 5752 series 20, NF EN 558-1 series 20.

- Two types of sleeve: • DN 350

and 400: profiled in the shape of a "dovetail" ensuring perfect support (for a high vacuum, the sleeve can be glued); • DN 450 to 1200: internally reinforced in aluminum allowing reduced operating torque.

- Axles: top and bottom semi-axle or through axle depending on the diameter.

- Coupling axis on butterfly ensured by conical pins.

- Self-lubricating cuprous alloy bearings.

- Additional sealing at the axles by O-rings. **ÿ CONSTRUCTION**

**MATERIALS** (see table on page 27)

- Cast iron or ductile iron body.

- Ductile iron disc.

- Heat EPDM cuff.

Other possibilities on request.

**ÿ COATING**

- Body: liquid or powder food-grade epoxy paint depending on the diameter, RAL 5019.

**ÿ SERVICE CONDITIONS -**

Maximum service pressure 10 bar (16 bar on request).

- Maximum service temperature 130°C (EPDM heat sleeve).

**ÿ AGREEMENTS AND TESTS**

- Manufactured to meet the requirements of European Directive 97/23/EC "Pressure equipment": category III module H.

- The test procedures are carried out according to NFEN 12266-1, NF EN 12266-2, DIN 3230 and ISO 5208.

**ÿ CONNECTION -**

TECLARGE: ISO PN 10 between flanges according to standard EN 1092-2 (PN 16 and ASA 150 on request).

Two upper and lower lugs with smooth or tapped holes depending on the diameter.

- TECLARGE FL: ISO PN 10 double flanges according to standard EN 1092-2 (PN 16 and ASA 150 on request). Mounting by tie rods and screws.

**ÿ MANEUVERING BODIES**

ISO 5211 standardized base for easy mounting of the following actuators:

- manual reducer with position indicator, - single or double-acting pneumatic cylinder, - electric motor 48, 230/400 V single/three-phase, 50 or 60 Hz.

**KEY range****DN ÿ 350**

Presentation

**ÿ APPLICATION**

General use: water, sea water, sludge, hydrocarbons, etc. **ÿ**

**MODELS**

Standard TECLARGE: between flange wafer PN 10 (PN 16 and ASA 150 on request).

TECLARGE FL: double flange PN 10 (PN 16 and ASA 150 on request).

**ÿ GENERAL CHARACTERISTICS**

- Design in accordance with NF EN 593.

- Tightness in both ways. NFEN 12266-1, NFEN 12266-2 - ISO 5208 - FROM 3230.

- Face to face in accordance with: ISO 5752 series 20, NF EN 558-1 20 series.

- Two kinds of sleeve: •

DN 350 and 400: body in dovetail shape ensures a perfect assembling (for high vacuum we can stick it) ; • DN 450 to 1200: sleeve internally reinforced in aluminium giving a low torque.

- Stem: half stem high and low or crossing stem depending on the diameter.

- Coupling stem on disc assembled by conical pin.

- Self lubricant bearing in copper alloy.

- Supplementary tightness on stem by o'rings. **ÿ**

**CONSTRUCTION MATERIALS** (on the page 27)

- Body: cast iron or ductile iron.

- Disc: ductile iron.

- Sleeve: heat EPDM.

Other possibilities on request.

**ÿ COATING**

- Body: liquid or food epoxy powder painting depending on diameter, RAL 5019.

**ÿ WORKING CONDITIONS**

- Maximum working pressure: 10 bar ( 16 bar on request).

- Maximum working temperature: 130°C (sleeve: heat EPDM). **ÿ**

**AGREEMENT AND TESTING**

- Manufacture according to the requirements of the European directive 97/23/CE «Equipments under pressure» : category III modulate H.

- Test procedures are established according to NFEN 12266-1, NF EN 12266-2 - DIN 3230 ISO 5208.

**ÿ CONNECTION**

- TECLARGE: between flanges ISO PN 10 according to EN 1092-2 (PN 16 and ASA 150 on request). 2 lugs up & down with smooth holes or threaded depending on diameter.

- TECLARGE FL: double flange ISO PN 10 according to EN 1092-2 (PN 16 et ASA 150 on request). Assembling by string or screw.

**ÿ HANDLING POSSIBILITIES**

Mounting plate in accordance with ISO 5211 for easy assembling of following operating systems: - manual gear

box with position indicator, - single or double acting pneumatic actuator, - electric actuator 48, 230/400 V, single or three phases, 50 or 60 Hz.

**TECLARGE range****DN ÷ 350**

Technical characteristics

**KEY range****DN ÷ 350**

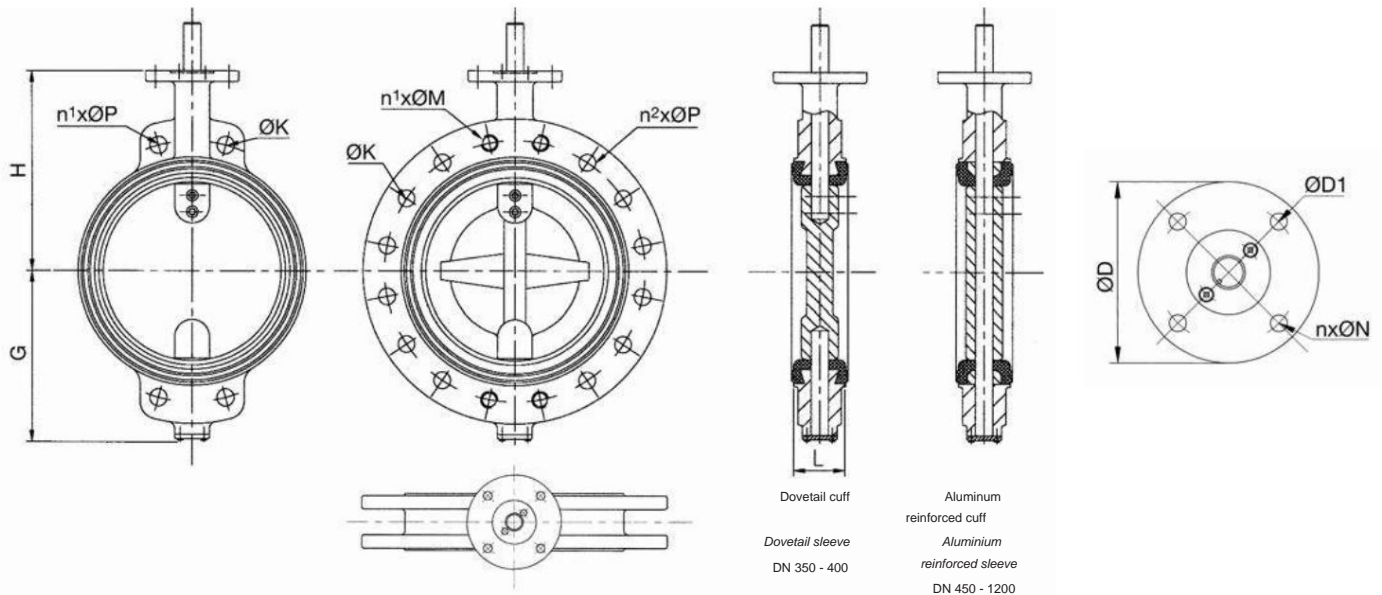
Technical characteristics

**KEY**

Entre brides / Wafer type

**KEY FL**

Double bride / Flanged type

**Dimensions et poids / Dimensions and weight**

| DN      | Faucet sizes<br>Valve dimensions |       |     |     |          |          |          |         | Embase<br>Mounting flange |      |         |        | Weight(1)<br>Weight |      |
|---------|----------------------------------|-------|-----|-----|----------|----------|----------|---------|---------------------------|------|---------|--------|---------------------|------|
|         | G                                | H     | L   | Ø K | n1 x Ø P | n1 x Ø M | n2 x Ø P | ISO     | Ø D                       | Ø D1 | n x Ø N | KEY    | KEY FL              |      |
| mm inch | mm mm                            | mm mm | mm  | mm  | mm       | mm       | mm       | mm mm   | mm                        | mm   | mm      | kg     | kg                  |      |
| 350     | 14"                              | 267   | 368 | 78  | 460      | 4 x 23   |          | 16 x 23 | F10                       | 140  | 102     | 4 x 12 | 45.6                | 70   |
| 400     | 16"                              | 309   | 400 | 102 | 515      | 4 x 28   |          | 16 x 27 | F14                       | 197  | 140     | 4 x 18 | 60.0                | 89   |
| 450     | 18"                              | 329   | 422 | 114 | 565      | 4 x 28   |          | 20 x 26 | F14                       | 197  | 140     | 4 x 18 | 75.0                | 165  |
| 500     | 20"                              | 361   | 480 | 127 | 620      | 4 x 28   |          | 20 x 27 | F14                       | 197  | 140     | 4 x 18 | 96.0                | 180  |
| 600     | 24"                              | 459   | 562 | 154 | 725      | 4 x 31   |          | 20 x 30 | F16                       | 276  | 165     | 4 x 23 | 185.0               | 277  |
| 700     | 28"                              | 537   | 624 | 165 | 840      | 4 x 31   | 4 x M27  | 20 x 30 | F25                       | 300  | 254     | 8 x 18 | 322.0               | 414  |
| 800     | 32"                              | 609   | 672 | 190 | 950      | 4 x 34   | 4x M30   | 20 x 33 | F25                       | 300  | 254     | 8 x 18 | 380.0               | 498  |
| 900     | 36"                              | 672   | 720 | 203 | 1050     | 4x M30   | 4x M30   | 24 x 33 | F25                       | 300  | 254     | 8 x 18 | 547.0               | 894  |
| 1000    | 40"                              | 732   | 802 | 216 | 1160     | 4 x M33  | 4 x M33  | 24 x 36 | F25                       | 300  | 254     | 8 x 18 | 705.0               | 1295 |
| 1200    | 48"                              | 863   | 942 | 254 | 1380     | 4 x M36  | 4 x M36  | 28 x 39 | F30                       | 350  | 298     | 8 x 22 | 920.0               | 1923 |

1. Approximate weight / Approximate weight.

**TECLARGE range**

DN ÷ 350

Technical characteristics

**KEY range**

DN ÷ 350

Technical characteristics

**Standard cast iron valves / Standard cast iron valves**

| Model / Model           | KEY                                      |   | KEY FL                                   |   |
|-------------------------|--|---|--|---|
|                         | VP3408                                   | VP3409                                  | VP3508                                   | VP3509                                  |
| Corps / Body            | Source / Cast iron - EN-GJL-250          |   |  |   |
| Butterfly / Disc        | Font GS<br>Ductile iron<br>EN-GJS-400-15 | Stainless steel<br>GX5CrNiMo<br>19-11-2 | Font GS<br>Ductile iron<br>EN-GJS-400-15 | Stainless steel<br>GX5CrNiMo<br>19-11-2 |
| Cuff / Sleeve           | EPDM chaleur / Heat EPDM                 |   |  |   |
| Connection / Connection | Entre brides / Wafer type                |   | A brides / Flanged type                  |   |

**Standard cast iron valves / Standard ductile iron valves**

| Model / Model           | KEY                                      |   | KEY FL                                   |   |
|-------------------------|--|---|--|---|
|                         | VP4408                                   | VP4409                                  | VP4508                                   | VP4509                                  |
| Corps / Body            | Fonte GS / Ductile iron EN-GJS-400-15    |   |  |   |
| Butterfly / Disc        | Font GS<br>Ductile iron<br>EN-GJS-400-15 | Stainless steel<br>GX5CrNiMo<br>19-11-2 | Font GS<br>Ductile iron<br>EN-GJS-400-15 | Stainless steel<br>GX5CrNiMo<br>19-11-2 |
| Cuff / Sleeve           | EPDM chaleur / Heat EPDM                 |   |  |   |
| Connection / Connection | Wafer / Wafer type For other             |   | A brides / Flanged type                  |   |

|           |                    |
|-----------|--------------------|
| PMS / MWP | 10 bar             |
| ISO PN    | 10                 |
| DN        | 350 à / to 1200 mm |

constructions, refer to page 12 "Table of materials".

For more information about construction, please refer to page 12 «Materials chart».

**KEY****Valves article codes / Valve's codes**

| DN      | VP3408-00   |                 | VP3409-00   |                 | VP4408-00   |  | VP4409-00   |  |
|---------|---|-----------------|---|-----------------|---|--|---|--|
|         | Body: cast iron /<br>Body: cast iron<br>Butterfly: ductile iron /<br>Disc: ductile iron<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |                 | Body: cast iron /<br>Body: cast iron<br>Butterfly: stainless steel /<br>Disc: stainless steel<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |                 | Body: ductile iron /<br>Body: ductile iron<br>Butterfly: ductile iron /<br>Disc: ductile iron<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |  | Body: ductile iron /<br>Body: ductile iron<br>Butterfly: stainless steel /<br>Disc: stainless steel<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |  |
| mm inch |   |                 |   |                 |   |  |   |  |
| 350     | 14"   | VP3408-00EP0350 | VP3409-00EP0350   | VP4408-00EP0350 | VP4409-00EP0350   |  |   |  |
| 400     | 16"   | VP3408-00EP0400 | VP3409-00EP0400   | VP4408-00EP0400 | VP4409-00EP0400   |  |   |  |
| 450     | 18"   | VP3408-00EP0450 | VP3409-00EP0450   | VP4408-00EP0450 | VP4409-00EP0450   |  |   |  |
| 500     | 20"   | VP3408-00EP0500 | VP3409-00EP0500   | VP4408-00EP0500 | VP4409-00EP0500   |  |   |  |
| 600     | 24"   | VP3408-00EP0600 | VP3409-00EP0600   | VP4408-00EP0600 | VP4409-00EP0600   |  |   |  |
| 700     | 28"   | VP3408-00EP0700 | VP3409-00EP0700   | VP4408-00EP0700 | VP4409-00EP0700   |  |   |  |
| 800     | 32"   | VP3408-00EP0800 | VP3409-00EP0800   | VP4408-00EP0800 | VP4409-00EP0800   |  |   |  |
| 900     | 36"   | VP3408-00EP0900 | VP3409-00EP0900   | VP4408-00EP0900 | VP4409-00EP0900   |  |   |  |
| 1000    | 40"   | VP3408-00EP1000 | VP3409-00EP1000   | VP4408-00EP1000 | VP4409-00EP1000   |  |   |  |
| 1200    | 48"   | VP3408-00EP1200 | VP3409-00EP1200   | VP4408-00EP1200 | VP4409-00EP1200   |  |   |  |

**KEY FL****Valves article codes / Valve's codes**

| DN      | VP3508-00   |                 | VP3509-00   |                 | VP4508-00   |  | VP4509-00   |  |
|---------|---|-----------------|---|-----------------|---|--|---|--|
|         | Body: cast iron /<br>Body: cast iron<br>Butterfly: ductile iron /<br>Disc: ductile iron<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |                 | Body: cast iron /<br>Body: cast iron<br>Butterfly: stainless steel /<br>Disc: stainless steel<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |                 | Body: ductile iron /<br>Body: ductile iron<br>Butterfly: ductile iron /<br>Disc: ductile iron<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |  | Body: ductile iron /<br>Body: ductile iron<br>Butterfly: stainless steel /<br>Disc: stainless steel<br>Cuff: EPDM heat /<br>Sleeve: heat EPDM |  |
| mm inch |   |                 |   |                 |   |  |   |  |
| 350     | 14"   | VP3508-00EP0350 | VP3509-00EP0350   | VP4508-00EP0350 | VP4509-00EP0350   |  |   |  |
| 400     | 16"   | VP3508-00EP0400 | VP3509-00EP0400   | VP4508-00EP0400 | VP4509-00EP0400   |  |   |  |
| 450     | 18"   | VP3508-00EP0450 | VP3509-00EP0450   | VP4508-00EP0450 | VP4509-00EP0450   |  |   |  |
| 500     | 20"   | VP3508-00EP0500 | VP3509-00EP0500   | VP4508-00EP0500 | VP4509-00EP0500   |  |   |  |
| 600     | 24"   | VP3508-00EP0600 | VP3509-00EP0600   | VP4508-00EP0600 | VP4509-00EP0600   |  |   |  |
| 700     | 28"   | VP3508-00EP0700 | VP3509-00EP0700   | VP4508-00EP0700 | VP4509-00EP0700   |  |   |  |
| 800     | 32"   | VP3508-00EP0800 | VP3509-00EP0800   | VP4508-00EP0800 | VP4509-00EP0800   |  |   |  |
| 900     | 36"   | VP3508-00EP0900 | VP3509-00EP0900   | VP4508-00EP0900 | VP4509-00EP0900   |  |   |  |
| 1000    | 40"   | VP3508-00EP1000 | VP3509-00EP1000   | VP4508-00EP1000 | VP4509-00EP1000   |  |   |  |
| 1200    | 48"   | VP3508-00EP1200 | VP3509-00EP1200   | VP4508-00EP1200 | VP4509-00EP1200   |  |   |  |



## TECLARGE range

DN ÷ 350

Actuators

## KEY range

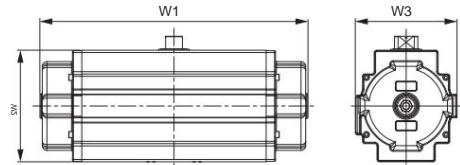
DN ÷ 350

Actuators

### ÷ Pneumatic cylinder / Pneumatic actuator

P = 10 bar max

| DN  |      | Double effet / Double acting |     |     | Single acting<br>Single acting | Weight<br>Weight | Code article<br>Code |
|-----|------|------------------------------|-----|-----|--------------------------------|------------------|----------------------|
|     |      | W1                           | W2  | W3  |                                |                  |                      |
| mm  | inch | mm                           | mm  | mm  |                                | kg               |                      |
| 350 | 14"  | 522                          | 188 | 187 | DA 160                         | 19.6             | VERIN1/4T-DA160      |
| 400 | 16"  | 575                          | 239 | 218 | DA 200                         | 32.2             | VERIN1/4T-DA200      |
| 450 | 18"  | 575                          | 239 | 218 | DA 200                         | 32.2             | VERIN1/4T-DA200      |
| 500 | 20"  | 672                          | 331 | 290 | DA 270                         | 69.9             | VERIN1/4T-DA270      |
| 600 | 24"  | 672                          | 331 | 290 | DA 270                         | 69.9             | VERIN1/4T-DA270      |

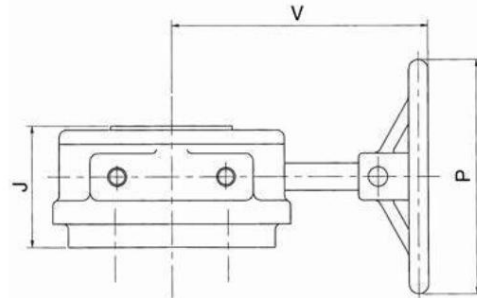


Optional: open/close adjustment system  
On request: closure/opening adjustment system



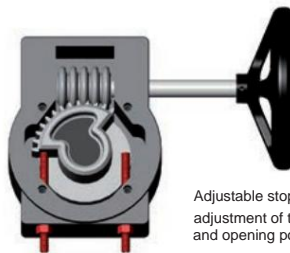
### ÷ Manual flywheel gearbox / Gear box actuator

| DN   |     | IN  | P   | J   | Type | Nb tours<br>Nb turn | Weight<br>Weight | Code article<br>Code |
|------|-----|-----|-----|-----|------|---------------------|------------------|----------------------|
|      |     |     |     |     |      |                     |                  |                      |
| 350  | 14" | 207 | 300 | 77  | 1T   | 12.5                | 12.3             | PREDUCT-0350         |
| 400  | 16" | 277 | 300 | 125 | 1T   | 20                  | 25.8             | PREDUCT-0400         |
| 450  | 18" | 277 | 300 | 125 | 1T   | 20                  | 30.2             | PREDUCT-0400         |
| 500  | 20" | 185 | 400 | 145 | 3T   | 153.5               | 46.5             | PREDUCT-0500         |
| 600  | 24" | 185 | 400 | 145 | 3T   | 153.5               | 60.1             | PREDUCT-0600         |
| 700  | 28" | 228 | 400 | 140 | 3T   | 176                 | 138.0            | PREDUCT-0700         |
| 800  | 32" | 228 | 400 | 140 | 3T   | 176                 | 138.0            | PREDUCT-0700         |
| 900  | 36" | 266 | 450 | 163 | 3T   | 176                 | 220.0            | PREDUCT-0900         |
| 1000 | 40" | 266 | 450 | 163 | 3T   | 176                 | 220.0            | PREDUCT-1000         |
| 1200 | 48" | 450 | 550 | 205 | 3T   | 200                 | 270.0            | PREDUCT-1200         |

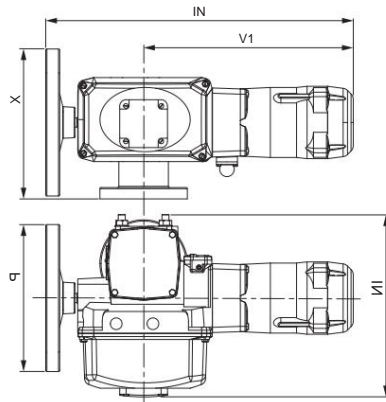


Type 1T / 1T type  
DN 40 - 450

Type 3T / 3T type  
DN 500 - 1200



Adjustable stop allowing adjustment of the end of closing and opening positions.  
Adjustable opening and closing race limiters.

**TECLARGE range****DN ÷ 350****Actuators****KEY range****DN ÷ 350****Actuators****ÿ BERNARD electric motor / BERNARD electric actuator****Features / Features**Manual control / *Manual operation*Mechanical stops / *Mechanical stop*Visual position indicator / *Visual position indicator*Limit switches / *limit switches*Motor thermal protection / *Thermal protection*Force limiter / *Load limiter*Removable socket / *Removable socket*

P = 10 bar max

| DN   |      | Feed Power |                        | Reference Reference | Dimensions |        |       |       |       | Platinum Mounting plate | Couple maxi Maxi torque Nm | Weight Weight kg | Code article Code |
|------|------|------------|------------------------|---------------------|------------|--------|-------|-------|-------|-------------------------|----------------------------|------------------|-------------------|
| mm   | inch |            |                        |                     | x mm       | ø P mm | IN mm | V1 mm | IN mm |                         |                            |                  |                   |
| 350  | 14"  | 400 V      | Three phase / 3 phase  | AS80                | 208        | 250    | 509   | 340   | 315   | F12                     | 800                        | 21               | VPMOTELEC-AS8001  |
|      |      | 230 V      | Three phase / 3 phase  |                     |            |        |       |       |       |                         |                            | 21               | VPMOTELEC-AS8002  |
|      |      |            | Single phase / 1 phase |                     |            |        |       |       |       |                         |                            | 21               | VPMOTELEC-AS8003  |
| 400  | 16"  | 400 V      | Three phase / 3 phase  | AS100               | 259        | 300    | 519   | 405   | 346   | F12 / (F14)             | 1000                       | 40               | VPMOTELEC-AS1001  |
|      |      | 230 V      | Single phase / 1 phase |                     |            |        |       |       |       |                         |                            | 47               | VPMOTELEC-AS1002  |
| 450  | 18"  | 400 V      | Three phase / 3 phase  | AS200               | 281        | 300    | 663   | 475   | 463   | F16 / (F14)             | 2500                       | 57               | VPMOTELEC-AS2001  |
|      |      | 230 V      | Single phase / 1 phase |                     |            |        |       |       |       |                         |                            | 64               | VPMOTELEC-AS2002  |
| 500  | 20"  | 400 V      | Three phase / 3 phase  | AS200               | 281        | 300    | 663   | 475   | 463   | F16 / (F14)             | 2500                       | 57               | VPMOTELEC-AS2001  |
|      |      | 230 V      | Single phase / 1 phase |                     |            |        |       |       |       |                         |                            | 64               | VPMOTELEC-AS2002  |
| 600  | 24"  | 400 V      | Three phase / 3 phase  | AS400               | 281        | 300    | 645   | 497   | 458   | F16                     | 4000                       | 60               | VPMOTELEC-AS4001  |
|      |      | 230 V      | Single phase / 1 phase |                     |            |        |       |       |       |                         |                            | 67               | VPMOTELEC-AS4002  |
| 700  | 28"  | 400 V      | Three phase / 3 phase  | AS600               | 414        | 400    | 742   | 184   | 532   | F25                     | 5800                       | 84               | VPMOTELEC-AS6001  |
| 800  | 32"  | 400 V      | Three phase / 3 phase  | AS600               | 414        | 400    | 742   | 184   | 532   | F25                     | 5800                       | 85               | VPMOTELEC-AS6001  |
| 900  | 36"  | 400 V      | Three phase / 3 phase  | AS1000              | 364        | 300    | 780   | 184   | 482   | F25                     | 10000                      | 85               | VPMOTELEC-AS10001 |
|      |      | 230 V      | Three phase / 3 phase  |                     |            |        |       |       |       |                         |                            | 85               | VPMOTELEC-AS10002 |
|      |      |            | Single phase / 1 phase |                     |            |        |       |       |       |                         |                            | 92               | VPMOTELEC-AS10003 |
| 1000 | 40"  | 400 V      | Three phase / 3 phase  | AS1000              | 364        | 300    | 780   | 184   | 782   | F25                     | 10000                      | 85               | VPMOTELEC-AS10001 |
|      |      | 230 V      | Three phase / 3 phase  |                     |            |        |       |       |       |                         |                            | 85               | VPMOTELEC-AS10002 |
|      |      |            | Single phase / 1 phase |                     |            |        |       |       |       |                         |                            | 92               | VPMOTELEC-AS10003 |
| 1200 | 48"  | 400 V      | Three phase / 3 phase  | ASM2 + RS1830G      | 363        | 300    | 1091  | 854   | 440   | F30                     | 18000                      | 133              | VPMOTELEC-ASM206  |

50 Hz a standard / *on standard*60 Hz sur demande / *on request*

**TECLARGE range****DN ÷ 350**

Actuators

**KEY range****DN ÷ 350**

Actuators

**ÿ AUMA electric motor / AUMA electric actuator****Features / Features**

Indice de protection IP 67 / IP67 protection

Protection anti-corrosion / Anticorrosion protection

Manual control / Manual operation

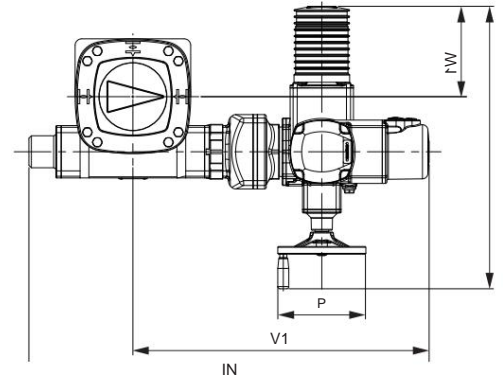
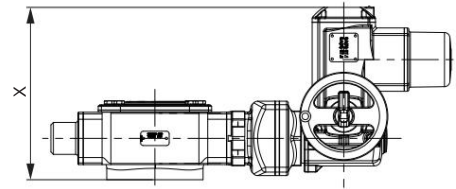
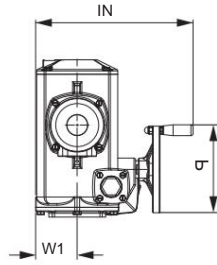
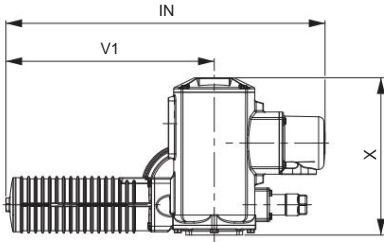
Stop on limit switch / Limit switching

Stop on torque limiter / Torque switching

Valve overload protection / Valve overload protection

Motor protection against overheating / Actuator thermal protection

Plug in electrical connection



P = 10 bar max

| DN   | Feed Power |       | Reference Reference   | Dimensions             |        |       |       |       |       | Platinum Mounting plate | Couple maxi Maxi torque Nm | Weight Weight kg | Code article Code |                  |
|------|------------|-------|-----------------------|------------------------|--------|-------|-------|-------|-------|-------------------------|----------------------------|------------------|-------------------|------------------|
|      | mm         | inch  |                       | X mm                   | ø P mm | IN mm | V1 mm | IN mm | W1 mm |                         |                            |                  |                   |                  |
| 350  | 14"        | 400 V | Three phase / 3 phase | SG12.1                 | 313    | 160   | 506   | 301   | 290.5 | 57.5                    | F12 (F14)                  | 1200             | 28                | VPMOTELEC-SG1210 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SG1211 |
| 400  | 16"        | 400 V | Three phase / 3 phase | SG12.1                 | 313    | 160   | 506   | 301   | 290.5 | 57.5                    | F12 (F14)                  | 1200             | 28                | VPMOTELEC-SG1210 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SG1211 |
| 450  | 18"        | 400 V | Three phase / 3 phase | SA07.1+VZ4.3+GS100.3   | 312    | 160   | 721   | 532   | 514.0 | 164.0                   | F14                        | 2000             | 53                | VPMOTELEC-SA0711 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SA0712 |
| 500  | 20"        | 400 V | Three phase / 3 phase | SA07.1+VZ4.3+GS100.3   | 312    | 160   | 721   | 532   | 514.0 | 164.0                   | F14                        | 2000             | 53                | VPMOTELEC-SA0711 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SA0712 |
| 600  | 24"        | 400 V | Three phase / 3 phase | SA07.5+VZ4.3+GS125.3   | 312    | 160   | 731   | 537   | 514.0 | 139.0                   | F16                        | 4000             | 64                | VPMOTELEC-SA0751 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SA0752 |
| 700  | 28"        | 400 V | Three phase / 3 phase | SA07.5+VZ4.3+GS125.3   | 312    | 160   | 731   | 537   | 514.0 | 139.0                   | F25                        | 4000             | 64                | VPMOTELEC-SA0751 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SA0752 |
| 800  | 32"        | 400 V | Three phase / 3 phase | SA07.5+GZ160.3+GS160.3 | 327    | 160   | 903   | 613   | 575.0 | 165.0                   | F25                        | 8000             | 112               | VPMOTELEC-SA0754 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SA0755 |
| 900  | 36"        | 400 V | Three phase / 3 phase | SA07.5+GZ160.3+GS160.3 | 327    | 160   | 903   | 613   | 575.0 | 165.0                   | F25                        | 8000             | 112               | VPMOTELEC-SA0754 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SA0755 |
| 1000 | 40"        | 400 V | Three phase / 3 phase | SA10.1+GZ160.3+GS160.3 | 327    | 200   | 905   | 615   | 581.0 | 165.0                   | F25                        | 11250            | 116               | VPMOTELEC-SA0754 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SA0755 |
| 1200 | 48"        | 400 V | Three phase/3 phase   | SA10.1+GZ200.3+GS200.3 | 338    | 200   | 1067  | 700   | 663.5 | 207.5                   | F30                        | 16000            | 191               | VPMOTELEC-SA1011 |
|      |            | 230 V |                       |                        |        |       |       |       |       |                         |                            |                  |                   | VPMOTELEC-SA1012 |

## Gamme TECWAT

### Presentation



#### ȳ APPLICATION

- General use: drinking water, waste water, sea water, industry.

#### ȳ MODELS

- TECWAT: long gauge. Flanged connection.

#### ȳ GENERAL CHARACTERISTICS -

Design according to standard EN 593.  
- 2-way watertight closure.

- Mounting with preferential direction (the arrow on the body shows the direction of the fluid).
- Gap according to ISO 5752 series 14, EN 558-1 series 14, DIN 3202 F4.
- Double offset type.
- Replaceable, tear-proof seat gasket.

#### ȳ CONSTRUCTION MATERIALS

- Body and butterfly: ductile iron, steel.
- Throttle seal: EPDM, nitrile.
- Seat: stainless steel.

#### ȳ COATING

- Food grade epoxy.

#### ȳ TERMS OF SERVICE

- Operating temperature: -15°C / 80°C.
- Maximum operating pressure: 10, 16, 25 or 40 bar depending on the construction.

#### ȳ TESTS

- According to NF EN 12266-1 and NF EN 12266-2.

#### ȳ CONNECTION

- Construction fonte GS : montage ISO PN 10 / 16 / 25 / 40.
- For other constructions contact us.

#### ȳ MANEUVERING BODIES

- Manual reducer with position indicator.
- Pneumatic jack.
- Electric motor 24, 48, 230/400 V, single/three-phase, 50 or 60 Hz.

## TECWAT range

### Presentation

#### ȳ APPLICATION

- General uses: drinkable water, dirty fluids, sea water, industry.

#### ȳ MODEL

- TECWAT type: long pattern. Flange connection.

#### ȳ GENERAL CHARACTERISTICS -

- Design in accordance to EN 593.
- Tightness in both ways.
- Assembling with preferential sense (the arrow on the body shows the sense of fluid).
- Face to face in accordance with ISO 5752 serie 14, EN 558-1 serie 14, DIN 3202 F4.
- Double eccentric type.
- Replaceable seat, no wrenkling possibility.

#### ȳ CONSTRUCTION MATERIALS -

- Body and disc: ductile iron, steel.
- Disc gasket: EPDM, nitril.
- Seat: stainless steel.

#### ȳ COATING

- Epoxy painting.

#### ȳ WORKING CONDITIONS -

- Working temperature: -15°C / 80°C.
- Maxi working pressure: 10, 16, 25 or 40 bar according to construction.

#### ȳ TESTING

- According to NF EN 12266-1 and NF EN 12266-2.

#### ȳ CONNEXIONS -

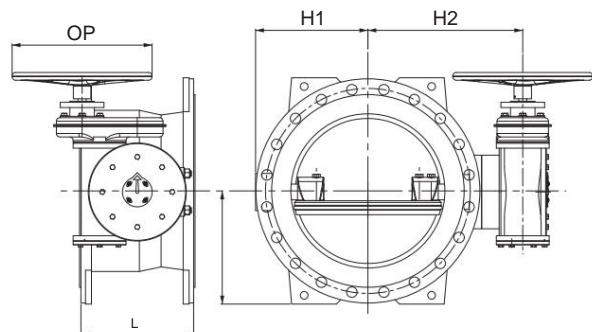
- Ductile iron construction: ISO PN 10 / 16 / 25 / 40.
- For other constructions consult us.

#### ȳ HANDLING POSSIBILITIES

- Gear box with position indicator.
- Pneumatic actuator.
- Electric actuators 24, 48, 230/400 V single or three phases, 50 or 60 Hz.

**Gamme TECWAT**

## Technical characteristics

**TECWAT range**

## Technical characteristics

**Dimensions et poids / Dimensions and weight**

| DN      | PN10/16/25/40 | PN 10 |      |      |      |     | PN 16  |      |      |      |     | PN 25  |     |      |      |     | PN 40  |     |     |     |     |        |    |
|---------|---------------|-------|------|------|------|-----|--------|------|------|------|-----|--------|-----|------|------|-----|--------|-----|-----|-----|-----|--------|----|
|         |               | L     | g    | H1   | H2   | OP  | Weight | g    | H1   | H2   | OP  | Weight | g   | H1   | H2   | OP  | Weight | g   | H1  | H2  | OP  | Weight |    |
| mm inch | 100           | mm    | mm   | mm   | mm   | mm  | kg     | mm   | mm   | mm   | mm  | mm     | mm  | mm   | mm   | mm  | mm     | mm  | mm  | mm  | mm  | mm     | kg |
| 125     | 4"            | 190   | 110  | 110  | 197  | 245 | 35     | 110  | 110  | 197  | 245 | 35     | 118 | 118  | 197  | 245 | 36     | 118 | 118 | 197 | 245 | 36     |    |
| 150     | 5"            | 200   | 125  | 125  | 208  | 245 | 38     | 125  | 125  | 208  | 245 | 38     | 135 | 140  | 232  | 245 | 39     | 135 | 140 | 232 | 245 | 39     |    |
| 200     | 6"            | 210   | 143  | 143  | 229  | 245 | 43     | 143  | 143  | 229  | 245 | 43     | 150 | 155  | 252  | 245 | 48     | 150 | 155 | 252 | 245 | 48     |    |
| 250     | 8"            | 230   | 170  | 170  | 255  | 245 | 55     | 170  | 170  | 255  | 245 | 55     | 180 | 193  | 290  | 245 | 66     | 188 | 193 | 290 | 245 | 70     |    |
| 300     | 10"           | 250   | 213  | 208  | 320  | 245 | 100    | 213  | 208  | 320  | 245 | 100    | 223 | 259  | 367  | 370 | 160    | 223 | 259 | 367 | 370 | 179    |    |
| 350     | 12"           | 270   | 240  | 239  | 372  | 245 | 125    | 240  | 239  | 372  | 245 | 125    | 253 | 271  | 383  | 370 | 187    | 268 | 271 | 383 | 370 | 200    |    |
|         | 14"           | 290   | 263  | 281  | 411  | 370 | 155    | 270  | 281  | 411  | 370 | 172    | 288 | 311  | 430  | 370 | 208    | 300 | 311 | 430 | 370 | 270    |    |
| 400     | 16"           | 310   | 293  | 297  | 408  | 370 | 172    | 300  | 297  | 408  | 370 | 200    | 320 | 340  | 480  | 370 | 289    | 340 | 340 | 459 | 370 | 380    |    |
| 450     | 18"           | 330   | 330  | 331  | 444  | 370 | 235    | 330  | 331  | 444  | 370 | 235    | 345 | 380  | 502  | 370 | 352    | 345 | 380 | 502 | 370 | 460    |    |
| 500     | 20"           | 350   | 345  | 356  | 492  | 370 | 313    | 368  | 356  | 492  | 370 | 330    | 375 | 385  | 560  | 370 | 470    | 388 | 385 | 560 | 370 | 520    |    |
| 600     | 24"           | 390   | 400  | 399  | 520  | 370 | 397    | 430  | 429  | 558  | 370 | 490    | 433 | 459  | 609  | 370 | 690    | 455 | 459 | 609 | 370 | 760    |    |
| 700     | 28"           | 430   | 458  | 493  | 611  | 370 | 610    | 465  | 470  | 600  | 370 | 632    | 490 | 533  | 664  | 370 | 860    | 508 | 533 | 664 | 370 | 1020   |    |
| 800     | 32"           | 470   | 518  | 553  | 674  | 370 | 750    | 523  | 518  | 655  | 370 | 820    | 553 | 588  | 749  | 370 | 1184   | 553 | 588 | 749 | 370 | 1480   |    |
| 900     | 36"           | 510   | 568  | 604  | 733  | 370 | 978    | 573  | 576  | 713  | 370 | 1020   | 603 | 677  | 853  | 485 | 1800   | 603 | 677 | 853 | 485 | 2250   |    |
| 1000    | 40"           | 550   | 625  | 641  | 781  | 370 | 1200   | 638  | 641  | 781  | 370 | 1318   | 670 | 734  | 928  | 485 | 2084   | 670 | 734 | 928 | 485 | 2600   |    |
| 1200    | 48"           | 630   | 738  | 758  | 938  | 485 | 2170   | 753  | 758  | 938  | 485 | 2470   | 765 | 820  | 1043 | 485 | 2700   | -   | -   | -   | -   | -      |    |
| 1400    | 56"           | 710   | 848  | 860  | 1041 | 485 | 2946   | 853  | 860  | 1041 | 485 | 3510   | 888 | 930  | 1170 | 485 | 3960   | -   | -   | -   | -   | -      |    |
| 1600    | 64"           | 790   | 968  | 1021 | 1214 | 485 | 4366   | 975  | 1058 | 1265 | 485 | 5150   | 995 | 1042 | 1275 | 605 | 5150   | -   | -   | -   | -   | -      |    |
| 1800    | 72"           | 870   | 1075 | 1215 | 1368 | 485 | 6300   | 1075 | 1215 | 1368 | 485 | 6300   | -   | -    | -    | -   | -      | -   | -   | -   | -   | -      |    |
| 2000    | 80"           | 950   | 1183 | 1345 | 1486 | 485 | 8500   | 1183 | 1345 | 1486 | 485 | 8500   | -   | -    | -    | -   | -      | -   | -   | -   | -   | -      |    |

For higher DN, contact us.

For upper DN, contact us.

**Version standard / Standard version**

|  |  |   |        |        |
|--|--|---|--------|--------|
| Model / Model  | VP4200 VP4240 VP4250 VP4260  |   |        |        |
| Corps / Body   | Fonte GS / Ductile iron EN-GJS-400-15                                    |   |        |        |
| Butterfly / Disc                                     | Fonte GS / Ductile iron EN-GJS-400-15                                    |   |        |        |
| Sealing / Tightness                                  | EPDM gasket / Stainless steel seat<br>EPDM gasket / Stainless steel seat |   |        |        |
| Maximum working pressure<br>Maximum working pressure | 10 bar   | 16 bar  | 25 bar | 40 bar |
| Connection<br>Connection                             | PN 10  | PN 10-16<br>(DN γ 150)<br>PN 16<br>(DN γ 200) | PN 25  | PN 40  |
| DN   | 100 à / up to 2000 mm  |   |        |        |



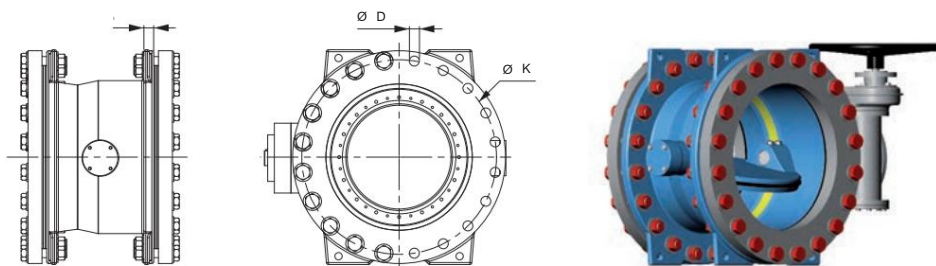
## Gamme TECWAT

### Technical characteristics

## TECWAT range

### Technical characteristics

#### Montage ISO pour brides type 11 B / ISO assembling for flanges type 11 B



#### Equipment for ISO assembly / Equipment for ISO assembling

| DN   | PN 10              |      |      |      |                        |     |      |         | PN 16                      |    |      |         |                            |    |      |         | PN 25                      |    |    |    |                        |    |    |    |    |    |    |
|------|--------------------|------|------|------|------------------------|-----|------|---------|----------------------------|----|------|---------|----------------------------|----|------|---------|----------------------------|----|----|----|------------------------|----|----|----|----|----|----|
|      | Perçage / Drilling |      |      |      | Equipment for assembly |     |      |         | Perçage / Drilling         |    |      |         | Equipment for assembly     |    |      |         | Perçage / Drilling         |    |    |    | Equipment for assembly |    |    |    |    |    |    |
|      | mm                 | inch | mm   | mm   | Ø K                    | nx  | Ø D  |         | mm                         | mm | mm   | mm      | mm                         | mm | mm   | mm      | mm                         | mm | mm | mm | mm                     | mm | mm | mm | mm | mm | mm |
| 150  | 240                | 200  | 295  | 250  | 300                    | 300 | 400  | 8 x 18  | 2 x (8 x M 16 - 60) 2 x    | 20 | 180  | 8 x 18  | 2 x (8 x M 16 - 60) 2 x    | 24 | 190  | 8 x 22  | 2 x (8 x M 16 - 70) 2 x    |    |    |    |                        |    |    |    |    |    |    |
| 350  | 460                | 400  | 515  | 450  | 525                    | 500 | 620  | 8 x 18  | (8 x M 16 - 65) 2 x (8     | 22 | 210  | 8 x 18  | (8 x M 16 - 65) 2 x (8     | 26 | 220  | 8 x 26  | (8 x M 20 - 75) 2 x (8     |    |    |    |                        |    |    |    |    |    |    |
| 600  | 725                | 700  | 840  | 800  | 920                    | 900 | 1050 | 8 x 22  | x M 20 - 70) 2 x (8 x M    | 22 | 240  | 8 x 22  | x M 20 - 70) 2 x (12 x     | 28 | 250  | 8 x 26  | x M 24 - 80) 2 x (12 x     |    |    |    |                        |    |    |    |    |    |    |
| 1000 | 1160               | 1200 | 1380 | 1400 | 1590                   |     |      | 8 x 22  | 20 - 70) 2 x (12 x M 20    | 24 | 295  | 12 x 22 | M 20 - 75) 2 x (12 x M     | 30 | 310  | 12 x 30 | M 24 - 85) 2 x (12 x M     |    |    |    |                        |    |    |    |    |    |    |
| 1600 | 1820               | 1800 | 2020 | 2000 | 2230                   |     |      | 12 x 22 | - 75) 2 x (12 x M 20 -     | 26 | 355  | 12 x 26 | 24 - 80) 2 x (12 x M 24 -  | 32 | 370  | 12 x 33 | 27 - 95) 2 x (16 x M 27 -  |    |    |    |                        |    |    |    |    |    |    |
|      | 12"                |      | 26   |      |                        |     |      | 12 x 22 | 75) 2 x (16 x M 20 - 75)   | 28 | 410  | 12 x 26 | 85) 2 x (16 x M 24 - 90)   | 34 | 430  | 16 x 33 | 100) 2 x (16 x M 30 - 110) |    |    |    |                        |    |    |    |    |    |    |
|      | 14"                |      | 26   |      |                        |     |      | 16 x 22 | 2 x (16 x M 24 - 80) 2 x   | 30 | 470  | 16 x 26 | 2 x (16 x M 27 - 95) 2 x   | 38 | 490  | 16 x 36 | 2 x (16 x M 33 - 115) 2 x  |    |    |    |                        |    |    |    |    |    |    |
|      | 16"                |      | 26   |      |                        |     |      | 16 x 26 | (20 x M 24 - 85) 2 x (20   | 32 | 525  | 16 x 30 | (20 x M 27 - 100) 2 x      | 40 | 550  | 16 x 39 | (20 x M 33 - 120) 2 x (20  |    |    |    |                        |    |    |    |    |    |    |
|      | 18"                |      | 28   |      |                        |     |      | 20 x 26 | x M 24 - 85) 2 x (20 x M   | 34 | 585  | 20 x 30 | (20 x M 30 - 100) 2 x (20  | 42 | 600  | 20 x 39 | x M 33 - 125) 2 x (20 x M  |    |    |    |                        |    |    |    |    |    |    |
|      | 20"                |      | 28   |      |                        |     |      | 20 x 26 | 27 - 90) 2 x (24 x M 27 -  | 34 | 650  | 20 x 33 | x M 33 - 110) 2 x (24 x M  | 44 | 660  | 20 x 42 | 36 - 130) 2 x (24 x M 39 - |    |    |    |                        |    |    |    |    |    |    |
|      | 24"                |      | 28   |      |                        |     |      | 20 x 30 | 90) 2 x (24 x M 30 - 100)  | 36 | 770  | 20 x 36 | 33 - 110) 2 x (24 x M 36 - | 46 | 770  | 20 x 42 | 135) 2 x (24 x M 45 - 145) |    |    |    |                        |    |    |    |    |    |    |
|      | 28"                |      | 30   |      |                        |     |      | 24 x 30 | 2 x (28 x M 30 - 100) 2    | 36 | 840  | 24 x 36 | 115) 2 x (28 x M 36 - 120) | 46 | 875  | 24 x 42 | 2 x (28 x M 45 - 155) 2 x  |    |    |    |                        |    |    |    |    |    |    |
|      | 32"                |      | 32   |      |                        |     |      | 24 x 33 | x (28 x M 33 - 105) 2 x    | 38 | 950  | 24 x 39 | 2 x (28 x M 39 - 125) 2 x  | 50 | 990  | 24 x 48 | (28 x M 52 - 170) 2 x (32  |    |    |    |                        |    |    |    |    |    |    |
|      | 36"                |      | 34   |      |                        |     |      | 28 x 33 | (32 x M 36 - 115) 2 x (36  | 40 | 1050 | 28 x 39 | (32 x M 45 - 140) 2 x (36  | 54 | 1090 | 28 x 48 | x M 52 - 190) 2 x (36 x M  |    |    |    |                        |    |    |    |    |    |    |
|      | 40"                |      | 34   |      |                        |     |      | 28 x 36 | x M 39 - 125) 2 x (40 x M  | 42 | 1170 | 28 x 42 | x M 45 - 150) 2 x (40 x M  | 58 | 1210 | 28 x 56 | 56 - 210) 2 x (40 x M 56 - |    |    |    |                        |    |    |    |    |    |    |
|      | 48"                |      | 38   |      |                        |     |      | 32 x 39 | 45 - 140) 2 x (44 x M 45 - | 48 | 1390 | 32 x 48 | 52 - 170) 2 x (44 x M 52 - | 70 | 1420 | 32 x 56 | 225)                       |    |    |    |                        |    |    |    |    |    |    |
|      | 56"                |      | 42   |      |                        |     |      | 36 x 42 | 145) 2 x (48 x M 45 - 155) | 52 | 1590 | 36 x 48 | 175) 2 x (48 x M 56 - 190) | 76 | 1640 | 36 x 62 |                            |    |    |    |                        |    |    |    |    |    |    |
|      | 64"                |      | 46   |      |                        |     |      | 40 x 48 |                            | 58 | 1820 | 40 x 56 |                            | 84 | 1860 | 40 x 62 |                            |    |    |    |                        |    |    |    |    |    |    |
|      | 72"                |      | 50   |      |                        |     |      | 44 x 48 |                            | 62 | 2020 | 44 x 56 |                            |    |      |         |                            |    |    |    |                        |    |    |    |    |    |    |
|      | 80"                |      | 54   |      |                        |     |      | 48 x 48 |                            | 66 | 2230 | 48 x 62 |                            |    |      |         |                            |    |    |    |                        |    |    |    |    |    |    |

#### Obligatory assembly with two gaskets

Contact us for PN 40 mounting equipment.

Consult us for PN 40 assembling equipment.

| DN   |      | VP4200 / PN 10  | VP4240 / PN 16  | VP4250 / PN 25  | VP4260 / PN 40  |
|------|------|-----------------|-----------------|-----------------|-----------------|
| mm   | inch |                 |                 |                 |                 |
| 100  | 4"   | VP4200-08EP0100 | VP4240-08EP0100 | VP4250-08EP0100 | VP4260-08EP0100 |
| 125  | 5"   | VP4200-08EP0125 | VP4240-08EP0125 | VP4250-08EP0125 | VP4260-08EP0125 |
| 150  | 6"   | VP4200-08EP0150 | VP4240-08EP0150 | VP4250-08EP0150 | VP4260-08EP0150 |
| 200  | 8"   | VP4200-08EP0200 | VP4240-08EP0200 | VP4250-08EP0200 | VP4260-08EP0200 |
| 250  | 10"  | VP4200-08EP0250 | VP4240-08EP0250 | VP4250-08EP0250 | VP4260-08EP0250 |
| 300  | 12"  | VP4200-08EP0300 | VP4240-08EP0300 | VP4250-08EP0300 | VP4260-08EP0300 |
| 350  | 14"  | VP4200-08EP0350 | VP4240-08EP0350 | VP4250-08EP0350 | VP4260-08EP0350 |
| 400  | 16"  | VP4200-08EP0400 | VP4240-08EP0400 | VP4250-08EP0400 | VP4260-08EP0400 |
| 450  | 18"  | VP4200-08EP0450 | VP4240-08EP0450 | VP4250-08EP0450 | VP4260-08EP0450 |
| 500  | 20"  | VP4200-08EP0500 | VP4240-08EP0500 | VP4250-08EP0500 | VP4260-08EP0500 |
| 600  | 24"  | VP4200-08EP0600 | VP4240-08EP0600 | VP4250-08EP0600 | VP4260-08EP0600 |
| 700  | 28"  | VP4200-08EP0700 | VP4240-08EP0700 | VP4250-08EP0700 | VP4260-08EP0700 |
| 800  | 32"  | VP4200-08EP0800 | VP4240-08EP0800 | VP4250-08EP0800 | VP4260-08EP0800 |
| 900  | 36"  | VP4200-08EP0900 | VP4240-08EP0900 | VP4250-08EP0900 | VP4260-08EP0900 |
| 1000 | 40"  | VP4200-08EP1000 | VP4240-08EP1000 | VP4250-08EP1000 | VP4260-08EP1000 |
| 1200 | 48"  | VP4200-08EP1200 | VP4240-08EP1200 | VP4250-08EP1200 |                 |
| 1400 | 56"  | VP4200-08EP1400 | VP4240-08EP1400 | VP4250-08EP1400 |                 |
| 1600 | 64"  | VP4200-08EP1600 | VP4240-08EP1600 | VP4250-08EP1600 |                 |
| 1800 | 72"  | VP4200-08EP1800 | VP4240-08EP1800 |                 |                 |
| 2000 | 80"  | VP4200-08EP2000 | VP4240-08EP2000 |                 |                 |

# High performance butterfly valve

TECSUP range / DN 50-600

Presentation



## APPLICATION

- General use: suitable for very severe applications (high temperature, high pressure, corrosive products, etc.).

## MODELS

- Wafer type (assembly between flanges).
- Lug type (with tapped lugs).

## GENERAL CHARACTERISTICS

- Design according to API 609 and test according to API 598.
- Bi-directional hemispherical sealing. The unique gasket profile of PTFE seat ensures, whatever the pressure, the tightness and compensates for any wear.
- The one-piece and robust axis maintains, thanks to its bearings, the alignment of the butterfly and the correct positioning of the seal on the seat.
- High performance butterfly valves have operation safe and economical.
- Possible connection on request ASME / BS.

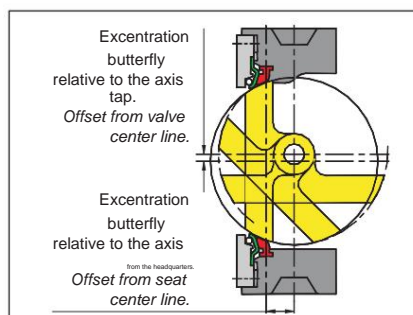
## CONSTRUCTION MATERIALS

- Corps :
  - . ASTM A 216 Gr. WCB steel,
  - . stainless steel ASTM A 351 Gr. CF8/CF8M/CN7M/904 L (Uranus B6®).
- Butterfly: stainless steel ASTM A 351 Gr. CF8 / CF8M / CN7M / WCB / 904 L (Uranus B6®).
- Seat(1) : PTFE (200°C as standard) / ASTM A 276 type 316 / Inconel.
- Shaft: 17-4 PH stainless steel, ASTM A 276 type 410/304/316 and A-20.
- Palier : PTFE / ASTM A 351 Gr. CD4MCu / Ni-Resist.
- Handle(2) : cast steel.
- Reducer(3) : EN8 molded steel gears / EN8 - EN19 screws.
- Coating for steel tap:
  - . primary layer without chlorine and meeting the rules of respect for the environment, . outer layer made of temperature-resistant aluminum (silver color).
- Other materials: on request.

- We specify the conditions of pressure and temperatures when requested.

## DOUBLE EXCENTRATION

The double eccentricity of the axis of rotation of the butterfly releases the pressure on the seat, which guarantees the system seal a very long life. THE butterfly valve operating torque high performance is lower than that of a conventional butterfly valve.



- Please specify working pressure, temperature and service conditions at the request.

## DOUBLE OFFSET

The axis of the disc rotation is double offset to the seat. When the disc rotates it unseats at a small turning angle by its cam effect. This outstanding feature enables. Bubble tight shut-off over extended period of service. Greatly reduced seat wear. Reduced torque peaks experienced with conventional valves.

# High performance butterfly valve

TECSUP range / DN 50-600

Presentation

## APPLICATION

- General use: heavy duty (high temperature, high pressure, corrosives fluids...).

## MODELS

- Wafer type (mounting between flanges).
- Lugged type (with threaded lugs).

## GENERAL CHARACTERISTICS

- Design in accordance with API 609 and testing with API 598.
- Bi-directional bubble tight shut off, unique flexible pressure energized lip seal, double offset design to minimize seat wear and extend seal life.
- Heavy duty single piece stem to minimize the deflection, thrust bearing and stem bearing to take load.
- Valves most suitable to provide the ultimate dependable economical flow control.
- Valves can be supplied to suit ASME / BS connection.

## CONSTRUCTION MATERIALS

- Body:
  - . steel ASTM A 216 Gr. WCB,
  - . stainless steel ASTM A 351 Gr. CF8 / CF8M / CN7M / 904 L (Uranus B6®).
- Disc: stainless steel ASTM A 351 Gr. CF8 / CF8M / CN7M / WCB / 904 L (Uranus B6®).
- Seat(1): PTFE (standard up to 200°C) / ASTM A 276 type 316 / Inconel.
- Stem: stainless steel 17-4 PH, ASTM A 276 type 410/304/316 and A-20.
- Stem bearing: PTFE / ASTM A 351 Gr. CD4MCu / Ni-Resist.
- Handle unit(2): carbon steel.
- Gear unit(3): gear in carbon steel EN8 / bolts in EN8 - EN19.
- Surface protection for cast carbon steel valves :
  - . prime coat: chlorine free with modified alkyd resin unobjectionable in physiological and toxicological respects,
  - . additional external coating: heat resistant silver streak aluminium paint.
- Other materials: on request.

- Please specify working pressure, temperature and service conditions at the request.

## DOUBLE OFFSET

The axis of the disc rotation is double offset to the seat. When the disc rotates it unseats at a small turning angle by its cam effect. This outstanding feature enables. Bubble tight shut-off over extended period of service. Greatly reduced seat wear. Reduced torque peaks experienced with conventional valves.

1. Nature of the material according to service conditions, temperature and pressure / Grade according to working pressure, temperature and working conditions.

2. For DN 50 - 100 cast steel fabricated hand lever and for DN 125 - 150 (Class 150) casting hand lever .

3. Reducers are recommended from DN 200 in Class 150 and from DN 150 in Class 300 / Gear actuators mandatory for sizes 200 and above in Class 150 valves and for sizes 150 and above in Class 300 valves.

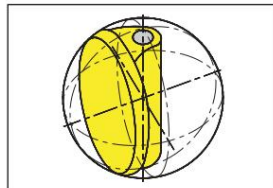
# High performance butterfly valve

TECSUP range / DN 50-600

Presentation

## SPHERICAL BUTTERFLY CONTACT

The seat/throttle contact is polished and hard treated.



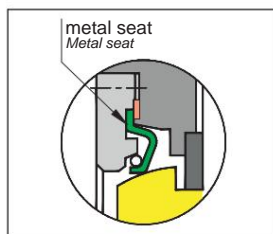
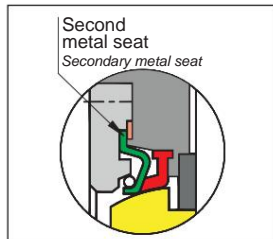
## BUILDING OPTIONS

### Fire safety

The butterfly valves are fire safe: the seat metal/PTFE (with Duplex® bearing) remains watertight even after the destruction of the PTFE. The second bi-directional seal is ensured by the metal seat. Certification according to API 607 (4th edition).

### High temperatures

The metal seat and the nature of the butterfly material allow operating temperatures up to 540°C with a leak rate meeting the Class IV standard according to ANSI / FCI 70-2. High temperature butterfly valves are exclusively with metal seat and Duplex® bearing.



## SPHERICAL DISC

Contacts the seat ring smoothly the sealing surfaces are hard faced.

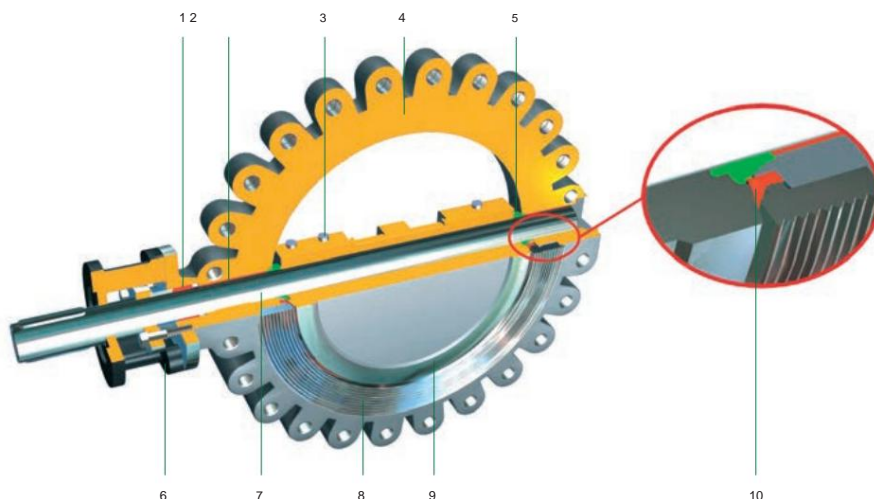
## DESIGN FEATURES

### Fire safe

A secondary lip type, pressure assisted, metal seat gives bi-directional sealing once the PTFE seat burns away after the fire. Fire safe valves incorporates PTFE & metal seat & Duplex® steel stem bearing. Certified as per API - 607 (4th edition).

### High temperatures

Combination of seat and disc materials suitable up to 540°C seat leakage rate Class IV as per ANSI / FCI 70-2. High temperature valves incorporates only metal seat & Duplex® steel stem bearing.



- CABLE GLAND PACKING.** Possibility of replacement in service of the filling; high resistance to temperature and corrosion; excellent sealing.
- SHAFT BEARING** in stainless steel with PTFE coating to reduce the torque of friction and reduce throttle buckling.
- STAINLESS STEEL PINS.** For greater safety the butterfly is pinned on the axle during assembly. The pins are installed in a position parallel to the valve to eliminate any risk of leakage.
- BODY.** Wafer or Lug type construction, light and compact for easy assembly and simplified maintenance of the butterfly valve.
- STOPS.** They ensure the alignment of the butterfly
- PLATINUM.** It accepts most types of actuators, handles, reducers, pneumatic and electric actuators. The low torque of the valve at butterfly makes it possible to limit the power of the actuators, therefore to have a reduced size at the best cost.
- AXIS.** For greater rigidity the axis is monobloc and machined with a great precision.
- SEAT SUPPORT RING.** It limits abrasion and corrosion of the seat to increase longevity. This ring can be replaced without removing the shaft and the disc.
- BUTTERFLY.** It reduces turbulence, pressure drop and torque necessary for operating the butterfly valve.
- THE UNIQUE PTFE SEAT GASKET PROFILE** ensures, whatever the pressure, tightness and compensates for any wear.

- PACKING.** Can be replaced in the field and has excellent sealing, heat resistance and anticorrosion properties.
- STEM BEARINGS** made of stainless steel / PTFE / filled PTFE are securely positioned close to the disc for minimum stem and disc deflection.
- STAINLESS STEEL PINS.** Connect stem and disc. The disc and stem are pinned during assembly for greater accuracy. The pins are parallel to the disc to prevent through leakage.
- BODY.** Wafer or Lugged are compact and light weight for easy maintenance and installation.
- THRUST BEARINGS** keep the disc centered.
- MOUNTING.** Accepts any type of actuation lever, gear, pneumatic or electric. The low torque requirement permits the use of smaller, less expensive and more compact actuator (ISO 5211).
- SHAFT** designed for toughest service in single piece for greater accuracy and reduced deflection.
- SEAT RETAINER.** Protects the seat from erosion and abrasion for long operating life. Seat can be replaced without disassembly of stem and disc.
- DISC.** Reduces turbulence, pressure drop and dynamic operating torque.
- SINGLE TYPE FLEXIBLE LIP SEAL.** Made of PTFE, pressure energised, assures positive BI-DIRECTIONAL shut-off and self compensates for wear.

# High performance butterfly valve

TECSUP range / DN 50-600

Technical characteristics

**Class 150** (Type wafer et lug / Wafer and lugged type)

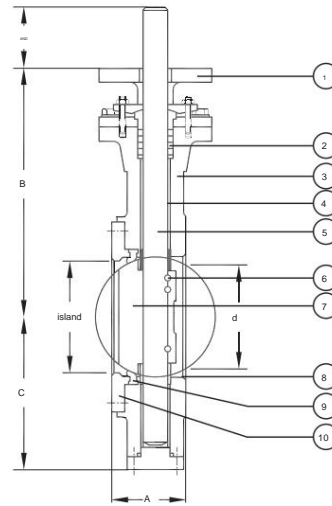
Dimensions et poids / Dimensions and weight

| DN  | ABCdD (1)  |     |          |     |                        |     |      | Poids(2) / Weight |       |          |       |                        |      |     |       |     |
|-----|------------|-----|----------|-----|------------------------|-----|------|-------------------|-------|----------|-------|------------------------|------|-----|-------|-----|
|     | Type wafer |     | Type lug |     | Wafer type Lugged type |     |      | Type wafer        |       | Type lug |       | Wafer type Lugged type |      |     |       |     |
| mm  | mm         | mm  | mm       | mm  | mm                     | mm  | mm   | kg                | 50    | 65       | 80    | 100                    | 110  | 125 | 150   | 160 |
| 200 | 360        | 280 | 55.0     | 300 | 70.0                   | 350 | 95.0 | 400               | 142.0 | 450      | 180.0 | 500                    | 2380 | 600 | 350.0 |     |
| 46  | 181        | 99  | 75       | 52  | 29                     |     |      |                   |       |          |       |                        |      |     |       |     |
| 48  | 208        | 120 | 92       | 60  | 29                     |     |      |                   |       |          |       |                        |      |     |       |     |
| 54  | 234        | 135 | 114      | 80  | 30                     |     |      |                   |       |          |       |                        |      |     | 14    |     |
| 57  | 238        | 142 | 134      | 111 | 30                     |     |      |                   |       |          |       |                        |      |     | 14    |     |
| 57  | 254        | 175 | 158      | 135 | 30                     |     |      |                   |       |          |       |                        |      |     | 20    |     |
| 64  | 305        | 185 | 214      | 180 | 60                     |     |      |                   |       |          |       |                        |      |     | 45    |     |
| 71  | 340        | 225 | 260      | 225 | 75                     |     |      |                   |       |          |       |                        |      |     | 62    |     |
| 81  | 380        | 265 | 314      | 285 | 85                     |     |      |                   |       |          |       |                        |      |     | 84    |     |
| 92  | 415        | 300 | 354      | 310 | 85                     |     |      |                   |       |          |       |                        |      |     | 122   |     |
| 102 | 445        | 325 | 399      | 356 | 120                    |     |      |                   |       |          |       |                        |      |     | 204   |     |
| 115 | 505        | 355 | 454      | 406 | 90                     |     |      |                   |       |          |       |                        |      |     | 360   |     |
| 128 | 545        | 380 | 494      | 454 | 135                    |     |      |                   |       |          |       |                        |      |     | 456   |     |
| 154 | 640        | 450 | 584      | 538 | 125                    |     |      |                   |       |          |       |                        |      |     | 552   |     |

# High performance butterfly valve

TECSUP range / DN 50-600

Technical characteristics



| Rep. Pos. | Designation Part name                        |
|-----------|--|
| 1         | Platinum Mounting                            |
| 2         | Stuffing box packing Packing                 |
| 3         | Corps Body                                   |
| 4         | Guide ring Stem bearing                      |
| 5         | Axe Shaft                                    |
| 6         | Stainless steel pins Stainless steel pins    |
| 7         | Papillon Disc                                |
| 8         | Stopper Thrust bearing                       |
| 9         | Flexible metal seat Unique flexible lip seat |
| 10        | Seat support ring Seat retainer              |

**Class 300** (Type lug / Lugged type)

Dimensions et poids / Dimensions and weight

| DN  | ABCdD (1)  |     |          |     |             |    |    | Weight(2) Weight |    |    |    |     |     |     |     |     |     |     |     |     |
|-----|------------|-----|----------|-----|-------------|----|----|------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | Type wafer |     | Type lug |     | Lugged type |    |    |                  |    |    |    |     |     |     |     |     |     |     |     |     |
| mm  | mm         | mm  | mm       | mm  | mm          | mm | mm | kg               | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 |     |
| 450 | 500        | 600 | 164      | 93  | 62          | 41 | 29 |                  |    |    |    |     |     |     |     |     |     |     |     |     |
| 46  | 181        | 99  | 75       | 52  | 29          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 11  |
| 48  | 208        | 120 | 92       | 60  | 29          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 13  |
| 54  | 234        | 135 | 114      | 80  | 30          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 18  |
| 57  | 274        | 142 | 134      | 111 | 30          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 24  |
| 59  | 290        | 175 | 158      | 135 | 65          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 40  |
| 73  | 335        | 210 | 214      | 180 | 75          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 60  |
| 83  | 370        | 240 | 264      | 220 | 85          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 95  |
| 92  | 445        | 285 | 314      | 285 | 90          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 130 |
| 117 | 480        | 315 | 354      | 302 | 90          |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 180 |
| 133 | 510        | 355 | 399      | 350 | 140         |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 315 |
| 149 | 550        | 385 | 454      | 396 | 120         |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 390 |
| 159 | 610        | 420 | 494      | 441 | 150         |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 550 |
| 181 | 690        | 490 | 584      | 526 | 150         |    |    |                  |    |    |    |     |     |     |     |     |     |     |     | 725 |

1. The internal diameter of the piping must be at least 3 mm greater for DN 50 to 300, 6 mm for DN 350 to 500 and 13 mm for DN 600.

Internal diameter of pipe should be at least 3 mm for sizes 50 to 300, 6 mm for sizes 350 to 500 and 13 mm for size 600.

2. Poids approximatif / Approximate weight.

Valves article codes / Valve's codes

PTFE sealing / PTFE tightness

| DN  | Type wafer / Wafer type         |  | Type lug / Lugged type          |  |                                 |  |
|-----|---------------------------------|--|---------------------------------|--|---------------------------------|--|
|     | Class 150                       |  | Class 150                       |  | Class 300                       |  |
|     | VP5441                          | VP6441   | VP5641                          | VP6641   | VP5661                          | VP6661   |
| mm  | Body: steel<br>Body: cast steel | Body: stainless steel<br>Body: stainless steel | Body: steel<br>Body: cast steel | Body: stainless steel<br>Body: stainless steel | Body: steel<br>Body: cast steel | Body: stainless steel<br>Body: stainless steel |
| 50  | VP5441-02PTF-0050               | VP6441-02PTF-0050                              | VP5641-02PTF-0050               | VP6641-02PTF-0050                              | VP5661-02PTF-0050               | VP6661-02PTF-0050                              |
| 65  | VP5441-02PTF-0065               | VP6441-02PTF-0065                              | VP5641-02PTF-0065               | VP6641-02PTF-0065                              | VP5661-02PTF-0065               | VP6661-02PTF-0065                              |
| 80  | VP5441-02PTF-0080               | VP6441-02PTF-0080                              | VP5641-02PTF-0080               | VP6641-02PTF-0080                              | VP5661-02PTF-0080               | VP6661-02PTF-0080                              |
| 100 | VP5441-02PTF-0100               | VP6441-02PTF-0100                              | VP5641-02PTF-0100               | VP6641-02PTF-0100                              | VP5661-02PTF-0100               | VP6661-02PTF-0100                              |
| 125 | VP5441-02PTF-0125               | VP6441-02PTF-0125                              | VP5641-02PTF-0125               | VP6641-02PTF-0125                              | VP5661-02PTF-0125               | VP6661-02PTF-0125                              |
| 150 | VP5441-02PTF-0150               | VP6441-02PTF-0150                              | VP5641-02PTF-0150               | VP6641-02PTF-0150                              | VP5661-08PTF-0150               | VP6661-08PTF-0150                              |
| 200 | VP5441-08PTF-0200               | VP6441-08PTF-0200                              | VP5641-08PTF-0200               | VP6641-08PTF-0200                              | VP5661-08PTF-0200               | VP6661-08PTF-0200                              |
| 250 | VP5441-08PTF-0250               | VP6441-08PTF-0250                              | VP5641-08PTF-0250               | VP6641-08PTF-0250                              | VP5661-08PTF-0250               | VP6661-08PTF-0250                              |
| 300 | VP5441-08PTF-0300               | VP6441-08PTF-0300                              | VP5641-08PTF-0300               | VP6641-08PTF-0300                              | VP5661-08PTF-0300               | VP6661-08PTF-0300                              |
| 350 | VP5441-08PTF-0350               | VP6441-08PTF-0350                              | VP5641-08PTF-0350               | VP6641-08PTF-0350                              | VP5661-08PTF-0350               | VP6661-08PTF-0350                              |
| 400 | VP5441-08PTF-0400               | VP6441-08PTF-0400                              | VP5641-08PTF-0400               | VP6641-08PTF-0400                              | VP5661-08PTF-0400               | VP6661-08PTF-0400                              |
| 450 | VP5441-08PTF-0450               | VP6441-08PTF-0450                              | VP5641-08PTF-0450               | VP6641-08PTF-0450                              | VP5661-08PTF-0450               | VP6661-08PTF-0450                              |
| 500 | VP5441-08PTF-0500               | VP6441-08PTF-0500                              | VP5641-08PTF-0500               | VP6641-08PTF-0500                              | VP5661-08PTF-0500               | VP6661-08PTF-0500                              |
| 600 | VP5441-08PTF-0600               | VP6441-08PTF-0600                              | VP5641-08PTF-0600               | VP6641-08PTF-0600                              | VP5661-08PTF-0600               | VP6661-08PTF-0600                              |

**Test pressure in bar / Test pressure in bar**

Class 150 Class 300

|                     | Corps / Shell | 30  | 76  |
|---------------------|---------------|-----|-----|
| Hydraulic Hydraulic | Seat / Seat   | 22  | 55  |
| Air / Air           | Seat / Seat   | 6.9 | 6.9 |

**Version standard / Standard version**

| Model / Model  | Type wafer / Wafer type                   |                                    | Type lug / Lugged type |                                    |                |                                    |
|--|---|------------------------------------|------------------------|------------------------------------|----------------|------------------------------------|
|  | VP5441                                    | VP6441                             | VP5641                 | VP6641                             | VP5661         | VP6661                             |
| Corps / Body   | Steel<br>Steel                            | Stainless steel<br>Stainless steel | Steel<br>Steel         | Stainless steel<br>Stainless steel | Steel<br>Steel | Stainless steel<br>Stainless steel |
| Butterfly / Disc                                     | Inox / Stainless steel                    |                                    |                        |                                    |                |                                    |
| Maximum working pressure<br>Maximum working pressure | 20 bar                                    |                                    |                        | 50 bar                             |                |                                    |
| Sealing<br>Tightness                                 | PTFE or metal-metal / PTFE or metal-metal |                                    |                        |                                    |                |                                    |
| Connection<br>Connection                             | WORK 150                                  |                                    |                        | 300 WORKS                          |                |                                    |
| DN   | DN 50 - 600                               |                                    |                        |                                    |                |                                    |

# High performance butterfly valve

TECSUP range / DN 50-600

Technical characteristics

# High performance butterfly valve

TECSUP range / DN 50-600

Technical characteristics

Valves article codes / Valve's codes

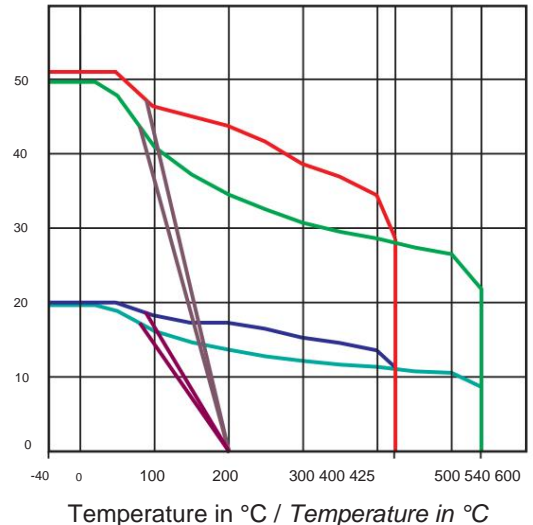
Metal-metal tightness / Metal-metal tightness

| DN  | Type wafer / Wafer type<br>Class 150 |  | Type lug / Lugged type          |  |                                 |  |
|-----|--------------------------------------|--|---------------------------------|--|---------------------------------|--|
|     | Class 150                            |  | Class 150                       |  | Class 300                       |  |
|     | VP5441                               | VP6441   | VP5641                          | VP6641   | VP5661                          | VP6661   |
| mm  | Body: steel<br>Body: cast steel      | Body: stainless steel<br>Body: stainless steel | Body: steel<br>Body: cast steel | Body: stainless steel<br>Body: stainless steel | Body: steel<br>Body: cast steel | Body: stainless steel<br>Body: stainless steel |
| 50  | VP5441-02MM-0050                     | VP6441-02MM-0050                               | VP5641-02MM-0050                | VP6641-02MM-0050                               | VP5661-02MM-0050                | VP6661-02MM-0050                               |
| 65  | VP5441-02MM-0065                     | VP6441-02MM-0065                               | VP5641-02MM-0065                | VP6641-02MM-0065                               | VP5661-02MM-0065                | VP6661-02MM-0065                               |
| 80  | VP5441-02MM-0080                     | VP6441-02MM-0080                               | VP5641-02MM-0080                | VP6641-02MM-0080                               | VP5661-02MM-0080                | VP6661-02MM-0080                               |
| 100 | VP5441-02MM-0100                     | VP6441-02MM-0100                               | VP5641-02MM-0100                | VP6641-02MM-0100                               | VP5661-02MM-0100                | VP6661-02MM-0100                               |
| 125 | VP5441-02MM-0125                     | VP6441-02MM-0125                               | VP5641-02MM-0125                | VP6641-02MM-0125                               | VP5661-02MM-0125                | VP6661-02MM-0125                               |
| 150 | VP5441-02MM-0150                     | VP6441-02MM-0150                               | VP5641-02MM-0150                | VP6641-02MM-0150                               | VP5661-08MM-0150                | VP6661-08MM-0150                               |
| 200 | VP5441-08MM-0200                     | VP6441-08MM-0200                               | VP5641-08MM-0200                | VP6641-08MM-0200                               | VP5661-08MM-0200                | VP6661-08MM-0200                               |
| 250 | VP5441-08MM-0250                     | VP6441-08MM-0250                               | VP5641-08MM-0250                | VP6641-08MM-0250                               | VP5661-08MM-0250                | VP6661-08MM-0250                               |
| 300 | VP5441-08MM-0300                     | VP6441-08MM-0300                               | VP5641-08MM-0300                | VP6641-08MM-0300                               | VP5661-08MM-0300                | VP6661-08MM-0300                               |
| 350 | VP5441-08MM-0350                     | VP6441-08MM-0350                               | VP5641-08MM-0350                | VP6641-08MM-0350                               | VP5661-08MM-0350                | VP6661-08MM-0350                               |
| 400 | VP5441-08MM-0400                     | VP6441-08MM-0400                               | VP5641-08MM-0400                | VP6641-08MM-0400                               | VP5661-08MM-0400                | VP6661-08MM-0400                               |
| 450 | VP5441-08MM-0450                     | VP6441-08MM-0450                               | VP5641-08MM-0450                | VP6641-08MM-0450                               | VP5661-08MM-0450                | VP6661-08MM-0450                               |
| 500 | VP5441-08MM-0500                     | VP6441-08MM-0500                               | VP5641-08MM-0500                | VP6641-08MM-0500                               | VP5661-08MM-0500                | VP6661-08MM-0500                               |
| 600 | VP5441-08MM-0600                     | VP6441-08MM-0600                               | VP5641-08MM-0600                | VP6641-08MM-0600                               | VP5661-08MM-0600                | VP6661-08MM-0600                               |

## Operating torques (Nm) / Operating torques (Nm)

| DN  | Siège PTFE / PTFE seat |             |                    |                    | Metal/metal seat / Metal/ metal seat |      |
|-----|------------------------|-------------|--------------------|--------------------|--------------------------------------|------|
|     | 20 bar (Class 150)     | 50 35 65 40 | 50 bar (Class 300) | 20 bar (Class 150) | 50 bar (Class 300)                   |      |
| 80  | 49                     | 100         | 25                 | 125                | 68                                   | 78   |
| 100 | 100                    | 250         | 103                | 150                | 80                                   | 88   |
| 125 | 125                    | 300         | 125                | 210                | 89                                   | 93   |
| 150 | 150                    | 350         | 150                | 250                | 128                                  | 133  |
| 200 | 200                    | 450         | 200                | 350                | 195                                  | 190  |
| 250 | 250                    | 500         | 250                | 450                | 295                                  | 241  |
| 300 | 300                    | 600         | 300                | 550                | 569                                  | 452  |
| 350 | 350                    | 700         | 350                | 650                | 814                                  | 618  |
| 400 | 400                    | 800         | 400                | 750                | 1138                                 | 1236 |
| 450 | 450                    | 900         | 450                | 850                | 2178                                 | 1540 |
| 500 | 500                    | 1000        | 500                | 950                | 2845                                 | 1933 |
| 550 | 550                    | 1100        | 550                | 1050               | 3826                                 | 3002 |
| 600 | 600                    | 1200        | 600                | 1150               | 4905                                 | 3728 |
| 650 | 650                    | 1300        | 650                | 1250               | 7358                                 | 5935 |

## Pressure / temperature correspondence Pressure / Temperature ratings



High Performance Butterfly Valves with Handle  
High performance butterfly valves with lever



# TECBLOC range

## Presentation

**APPLICATION**

- General use: difficult conditions (acid, sea water, powder).

**MODEL**

- Wafer type with body without ears.  
- Plain lug body type. **GENERAL**

**CHARACTERISTICS** - Body in 2 parts.

- One-piece butterfly and trunnion.  
- Possible ebonite coating of the butterfly.  
- PTFE bearings.

**CONSTRUCTION MATERIALS**

Body: cast iron, ductile iron, aluminium.  
Butterfly: steel, stainless steel, ebonite coating.  
Cuff: EPDM, FPM (Viton® type), etc.

**SERVICE CONDITIONS**

Pressures: see table below.  
Temperature: according to metals.

**CONNECTION**

Between ISO PN 10 flanges.

**MANEUVERING DEVICES**

- Handle.  
- Manual reducer with position indicator.  
- Single or double effect pneumatic cylinder.  
- 24.48, 230/400 V single/three-phase electric motor.

# TECBLOC range

## Presentation

**APPLICATION**

- General use: hard conditions (acids, sea water, powder).

**MODEL**

- Wafer type without lugs on body.  
- Body with smooth lugs.

**GENERAL CHARACTERISTICS**

- 2 piece-body.  
- 1 piece disc and stem.  
- Possibility of hard rubber coated disc.  
- PTFE bearings.

**CONSTRUCTION MATERIALS**

- Body: cast iron, ductile iron, aluminium.  
- Disc hard rubber coating, steel, stainless steel.  
- Sleeve: EPDM, FPM (type Viton®), etc.

**WORKING CONDITIONS**

- Pressure: refer to chart.  
Temperature: depending on materials.

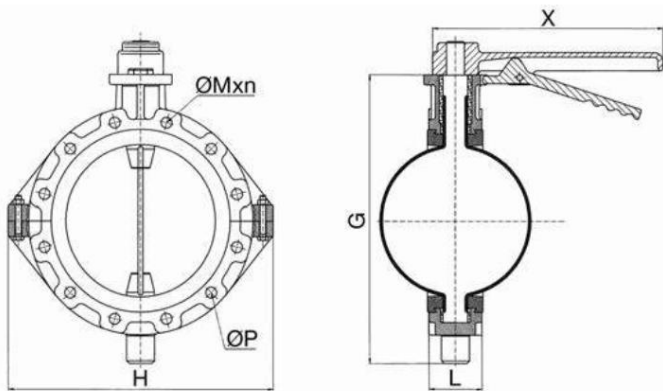
**CONNECTION**

- Between flanges ISO PN 10.

**HANDLING POSSIBILITIES**

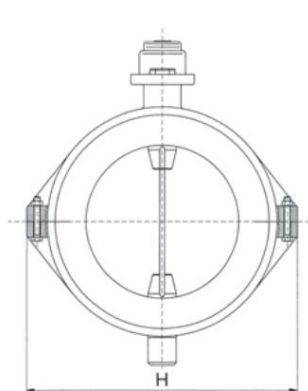
- Matched handle.  
- Gear box with position indicator.  
- Single or double acting pneumatic actuator.  
- Electric actuators 24, 48, 230/400 V single or three phases.

### Technical characteristics



Centering lugs type

### Technical characteristics



Type without ears (wafer)  
No lug type (wafer type)

Dimensions et pression de service / Dimensions and working pressure

| DN      | Lug type / With lugs |     |     |         |         |     | Earless/ No lug type |     |     |     |     |         |   |
|---------|----------------------|-----|-----|---------|---------|-----|----------------------|-----|-----|-----|-----|---------|---|
|         | g                    | L   | H   | Ø M x n | P       | X   | PMS MWP              | GL  | HX  |     |     | PMS MWP |   |
| mm inch | mm                   | mm  | mm  |         | mm      | mm  | bar                  | mm  | mm  | mm  | mm  | bar     |   |
| 50      | 2"                   |     |     |         |         |     |                      | 175 | 40  | 148 | 260 | 7       |   |
| 65      | 2 1/2"               |     |     |         |         |     |                      | 195 | 44  | 165 | 260 | 7       |   |
| 80      | 3"                   |     |     |         |         |     |                      | 210 | 46  | 200 | 260 | 7       |   |
| 100     | 4"                   | 305 | 72  | 280     | 18 x 8  | 180 | 450                  | 4.0 | 250 | 50  | 220 | 450     | 4 |
| 125     | 5"                   |     |     |         |         |     |                      |     | 270 | 53  | 250 | 450     | 4 |
| 150     | 6"                   | 375 | 84  | 355     | 22 x 8  | 240 | 470                  | 4.0 | 310 | 53  | 280 | 470     | 4 |
| 200     | 8"                   | 435 | 90  | 420     | 22 x 8  | 295 | 500                  | 4   | 370 | 64  | 340 | 500     | 4 |
| 250     | 10"                  | 495 | 98  | 485     | 22 x 12 | 350 | 500                  | 3.5 |     |     |     |         |   |
| 300     | 12"                  | 545 | 105 | 530     | 22 x 12 | 400 | 500                  | 3.5 |     |     |     |         |   |
| 350     | 14"                  | 682 | 110 | 634     | 22 x 16 | 460 |                      | 3.0 |     |     |     |         |   |
| 400     | 16"                  | 748 | 120 | 695     | 25 x 16 | 515 |                      | 3.0 |     |     |     |         |   |
| 500     | 20"                  | 860 | 160 | 820     | 25 x 20 | 620 |                      | 3.0 |     |     |     |         |   |
| 600     | 24"                  | 920 | 175 | 860     | 29 x 20 | 725 |                      | 3.0 |     |     |     |         |   |

Version standard / Standard version

|                  |  |
|------------------|--|
| Corps / Body     | Fonte - Aluminium - Fonte GS<br>Cast iron - Aluminium - Ductile iron   |
| Butterfly / Disc | Ebonite coated steel - 304-316 stainless steel<br>304-316 stainless steel halar coated<br>Hard rubber lined steel - SS 304-316<br>Halar lined SS 304-316 |
| Cuff / Sleeve    | All types of rubber<br>All kinds of rubber   |

|    |                  |
|----|------------------|
| PN | 10               |
| DN | 50 à / to 600 mm |

**TECFLON range**

## Presentation

**ȳ APPLICATION -**

General use: chemicals, acids, corrosive products.

**ȳ GENERAL CHARACTERISTICS -** Body

in 2 parts.  
- 2-way watertight closure.

- Centered butterfly.  
- One-piece throttle and shaft.

**ȳ CONSTRUCTION MATERIALS**

- Steel / stainless steel body.  
- Stainless steel butterfly / PFA coated.  
- PTFE sleeve on elastomer support.

**ȳ COATING -** Paint:

baked epoxy, 150 μ.

**ȳ TERMS OF SERVICE**

- Maximum operating pressure: 10 bar  
- Maximum service temperature with EPDM elastomer support:  
150°C (with silicone support: 180°C). ȳ

**HYDRAULIC TESTS -**

According to NF EN 12266-1 and NF EN 12266-2.

**ȳ CONNECTION**

- Between flanges ISO PN 10/16 for DN 50 - 150  
ISO PN 10 for DN 200 - 300.

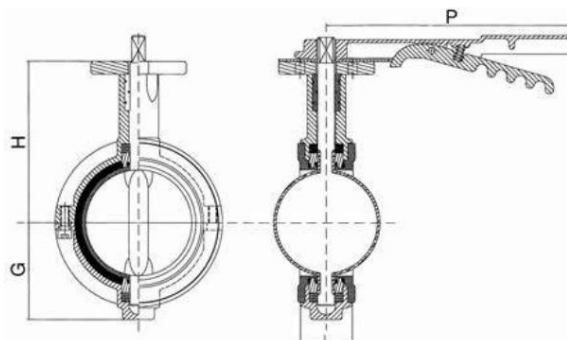
**ȳ MANEUVERING BODIES**

- Handle (DN 50 - 150).  
- Manual reducer with position indicator.  
- Single or double effect pneumatic cylinder.  
- Electric motor 24, 48, 230/400 V mono/three-phase, 50 or 60 Hz.

## Technical characteristics

## Dimensions et poids / Dimensions and weight

| DN      | Faucet sizes     |    |     |       |     | Weight<br>Weight |
|---------|------------------|----|-----|-------|-----|------------------|
|         | Valve dimensions |    |     |       |     |                  |
| mm inch | mm inch          | L  | H   | G     | P   | kg               |
| 50      | 2"               | 43 | 100 | 63.0  | 300 | 3.8              |
| 65      | 2 1/2"           | 46 | 122 | 70.0  | 300 | 4.5              |
| 80      | 3"               | 46 | 133 | 77.0  | 300 | 5.0              |
| 100     | 4"               | 52 | 153 | 93.0  | 300 | 8.0              |
| 125     | 5"               | 56 | 152 | 113.0 | 300 | 9.0              |
| 150     | 6"               | 56 | 174 | 123.0 | 300 | 10.0             |
| 200     | 8"               | 60 | 211 | 170.0 |     |                  |
| 250     | 10"              | 68 | 230 | 202.0 |     |                  |
| 300     | 12"              | 78 | 308 | 228.0 |     |                  |

**Standard**

|                                   |  |
|-----------------------------------|--|
| Corps / Body                      | Stainless steel<br>Steel - Stainless steel                   |
| Butterfly / Disc                  | 17-4PH type 630 PFA coated<br>17-4PH type 630 with PFA lined |
| Seat / Seat                       | PTFE on elastomer backing<br>PTFE on rubber back up          |
| seat support<br>Elastomer back up | EPDM / Silicone  |

|           |  |
|-----------|--|
| PMS / MWP | 10 bar   |
| ISO PN    | PN 10 - 16<br>(DN 50 - 150)<br>PN 10<br>(DN 200 - 300) |
| DN        | 50 à / to 300 mm                                       |

**TECFLON range**

## Presentation

**ȳ APPLICATION -**

General use: chemical, acids, corrosive products.

**ȳ GENERAL CHARACTERISTICS**

- Two piece-body.  
- Tightness in both ways.  
- Centred disc. -

1 piece stem and butterfly.

**ȳ CONSTRUCTION MATERIALS**

- Body cast steel / stainless steel.  
- Stainless steel disc PFA lined.  
- PTFE sleeve with rubber backup pad.

**ȳ COATING -**

Painting: oven backed epoxy powder coating, 150 μ.

**ȳ WORKING CONDITIONS**

- 10 bar maxi working pressure  
- Maximum working temperature with EPDM elastomer back: 150°C  
(with silicon elastomer back up: 180°C).

**ȳ HYDRAULIC TESTS -**

In accordance with NF EN 12266-1 and NF EN 12266-2.

**ȳ CONNECTION**

- Between flanges ISO PN 10/16 for DN 50 - 150 ISO  
PN 10 for DN 200 - 300.

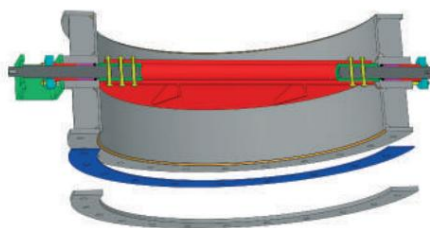
**ȳ HANDLING POSSIBILITIES**

- Handle (DN 50 - 150).  
- Gear box with position indicator.  
- Single or double acting pneumatic actuator.  
- Electric actuators 24, 48, 230/400 V single or 3 phases, 50 or 60 Hz.

## Technical characteristics

**TECWIND range**

## Presentation

**CONCEPTION**

- Mechanically welded damper specially designed for transporting air or hot gases.
- Connection plate compliant with ISO 5211 standard: facilitates the assembly of mechanical (manual reducers), pneumatic and electric actuators.
- Epoxy coating or special high temperature paint on asked.
- Bearing and braid initially supplied in ductile iron and graphite.
- Other materials on request.

**GENERAL CHARACTERISTICS - DN**

300 to 1200.

- Operating pressure: 0.5 bar.
- Maximum

pressure: . DN 300 to DN 600: 3 bar (20°C) - 1.5 bar (400°C); . DN 700 to DN 1200: 2 bar (20°C) - 1 bar (400°C).

- Maximum temperature (body and butterfly): .

S235JR steel up to 400°C; . steel

A 42 CP up to 550°C; . AISI 310

stainless steels up to 850°C.

- Design according to ANSI / FCI 70-2-1991 standard.

- Leak rate, class II and III as standard, other class on request: . Class II register: 0.5%; . Class III register: 0.1%.

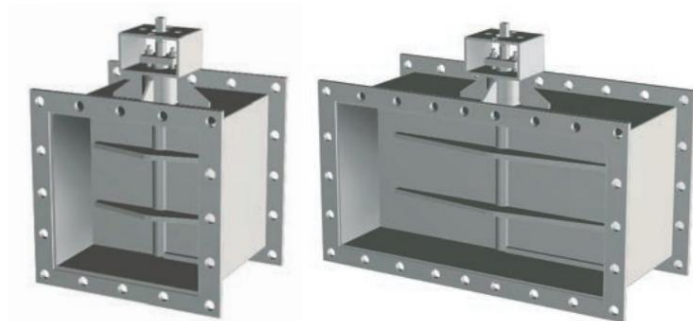
- Flanged connection according to TECOFI standard. Other types of connection on request.

**ACTUATORS**

Possibility of mounting pneumatic cylinders, flywheel gearboxes, electric motors, using an ISO 5211 base.

**OTHER SECTIONS**

Square or rectangular.

**TECWIND range**

## Presentation

**DESIGN**

- Welded assembly register specially designed for air and warm gases transport.
- Mounting flange, according to ISO 5211 standard: makes easy the mechanical (gear box), pneumatic, and electric actuator adap ting.
- Epoxy coating or special high temperature coating on request.
- Gland bearing and packing made of ductile iron and graphite.
- Other materials on request.

**GENERAL CHARACTERISTICS -**

DN 300 to 1200.

- Working pressure: 0.5 bar.

- Maxi pressure: .

DN 300 to DN 600: 3 bar (20°C) - 1,5 bar (400°C); . DN 700 to DN 1200: 2 bar (20°C) - 1 bar (400°C).

- Maxi temperature (body and disc): .

steel S235JR up to 400°C; .

steel A 42 CP up to 550°C; .

stainless steel (AISI 310) up to 850°C -

Design according to: ANSI / FCI 70-2-1991.

- Leak rate, class II and III on standard, other class on request : .

register Class II : 0.5%; .

register Class III : 0.1%.

- Flanged connection according to standard TECOFI. Other types of connection on request.

**OPERATING SYSTEM**

Possible assembling with pneumatic and electric actuators and gear box with an ISO 5211 mounting flange.

**OTHER SECTIONS**

Squared or rectangular.

**Codification / Codification**

1 Class I

2 Class II

3 Class III

4 Class IV

5 Class V

6 Class VI

00 Ax nu / Bare shaft

03 Double-acting pneumatic cylinder  
Double acting pneumatic actuator

04 Electric motor

Electric actuator

08 Manual flywheel gearbox

Gear box actuator

Example  
Example

**VP 529 1 - 00**



# TECWIND range

## Presentation

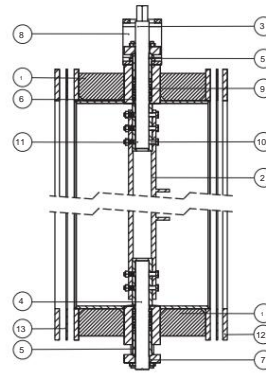
### Materials / Materials

|   |    |                         |
|---|----|-------------------------|
| Corps / Body                              | 1  | Steel / Steel S235JR    |
| Butterfly / Disc                          | 2  | Steel / Steel S235JR    |
| Upper axis / Upper stem                   | 3  | X 20 Cr 13              |
| Lower axis / Lower stem                   | 4  | X 20 Cr 13              |
| Fouloir-palier / Gland bearing            | 5  | Fonte GS / Ductile iron |
| Bottom packing ring / Bottom packing ring | 6  | Fonte GS / Ductile iron |
| Stuffing flange / Packing flange          | 7  | Steel / Steel S185      |
| Embase / Mounting flange                  | 8  | That's 42               |
| Tresse / Packing                          | 9  | Graphite                |
| Bague / Bushing                           | 10 | Steel / Steel S185      |
| Fasteners / Bolts                         | 11 | Steel / Steel           |
| Counter flange* / Back flange*            | 12 | Steel / Steel S235JR    |
| Joint / Gasket                            | 13 | Fibre / Fiber           |

\* Supply of counter-flange on request.  
Supply back flanges on request.

# TECWIND range

## Presentation

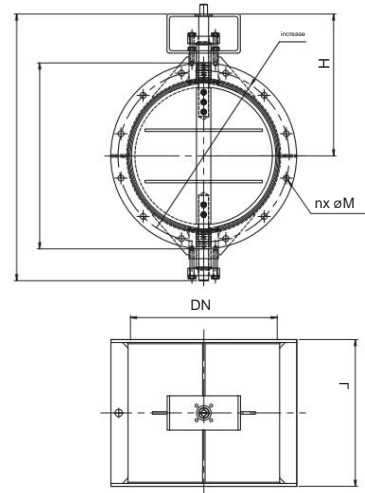


### Technical characteristics

### Technical characteristics

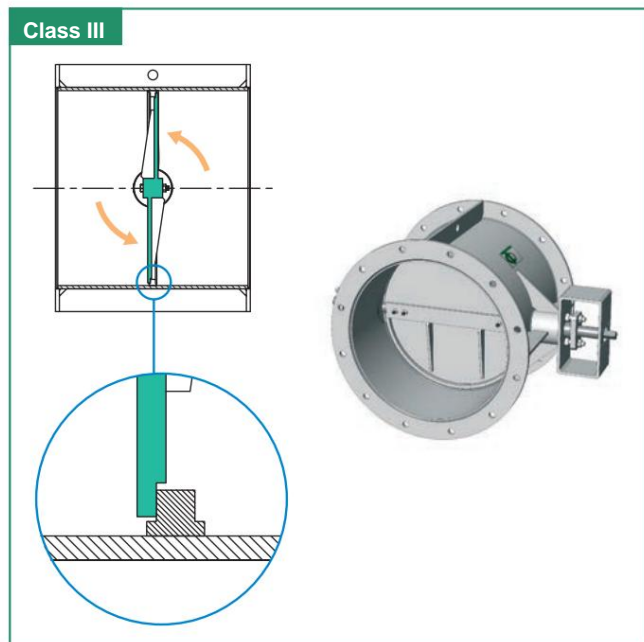
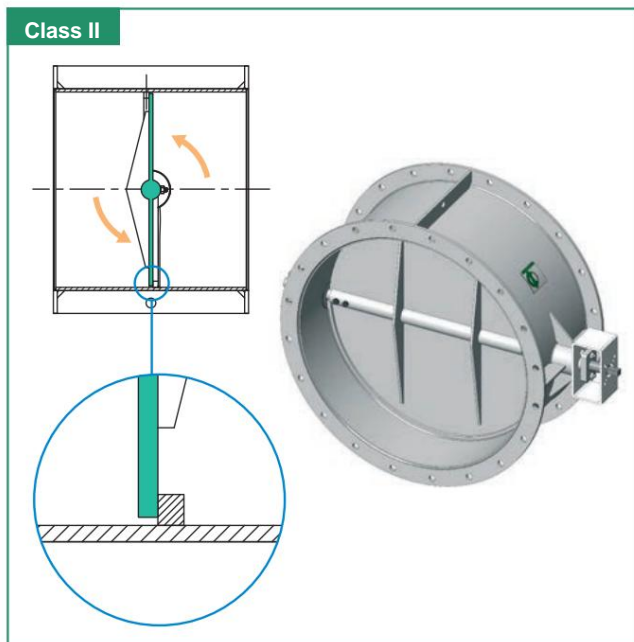
#### Dimensions et poids / Dimensions and weight

| DN           | Embase<br>Mounting flange<br>ISO 5211 | ø DH |     | H1   |     | L    | ø K nx øM |     | Weight<br>kg |
|--------------|---------------------------------------|------|-----|------|-----|------|-----------|-----|--------------|
|              |                                       | mm   | mm  | mm   | mm  |      | mm        | mm  |              |
| 12" 350 14"  | F05 / F07                             | 380  | 290 | 545  | 300 | 350  | 12 x 12   | 40  |              |
| 400 16" 450  | F05 / F07                             | 430  | 315 | 595  | 300 | 400  | 12 x 12   | 45  |              |
| 18" 500 20"  | F05 / F07                             | 500  | 340 | 645  | 300 | 464  | 16 x 16   | 55  |              |
| 600 24" 700  | F05 / F07                             | 550  | 365 | 695  | 300 | 514  | 16 x 16   | 65  |              |
| 28" 800 32"  | F05 / F07                             | 600  | 395 | 760  | 300 | 564  | 20 x 16   | 100 |              |
| 900 36" 1000 | F05 / F07                             | 700  | 445 | 860  | 300 | 664  | 20 x 16   | 125 |              |
| 40" 1200 48" | F07 / F10                             | 850  | 535 | 1025 | 300 | 790  | 24 x 16   | 220 |              |
|              | F07 / F10                             | 950  | 585 | 1125 | 300 | 890  | 24 x 16   | 270 |              |
|              | F07 / F10                             | 1050 | 635 | 1250 | 300 | 990  | 24 x 16   | 360 |              |
|              | F07 / F10                             | 1150 | 705 | 1380 | 300 | 1090 | 24 x 16   | 450 |              |
|              | F07 / F10                             | 1350 | 805 | 1580 | 300 | 1290 | 28 x 20   | 750 |              |



### Type de construction / Construction type

#### Sealing / Tightness



ACTUATORS

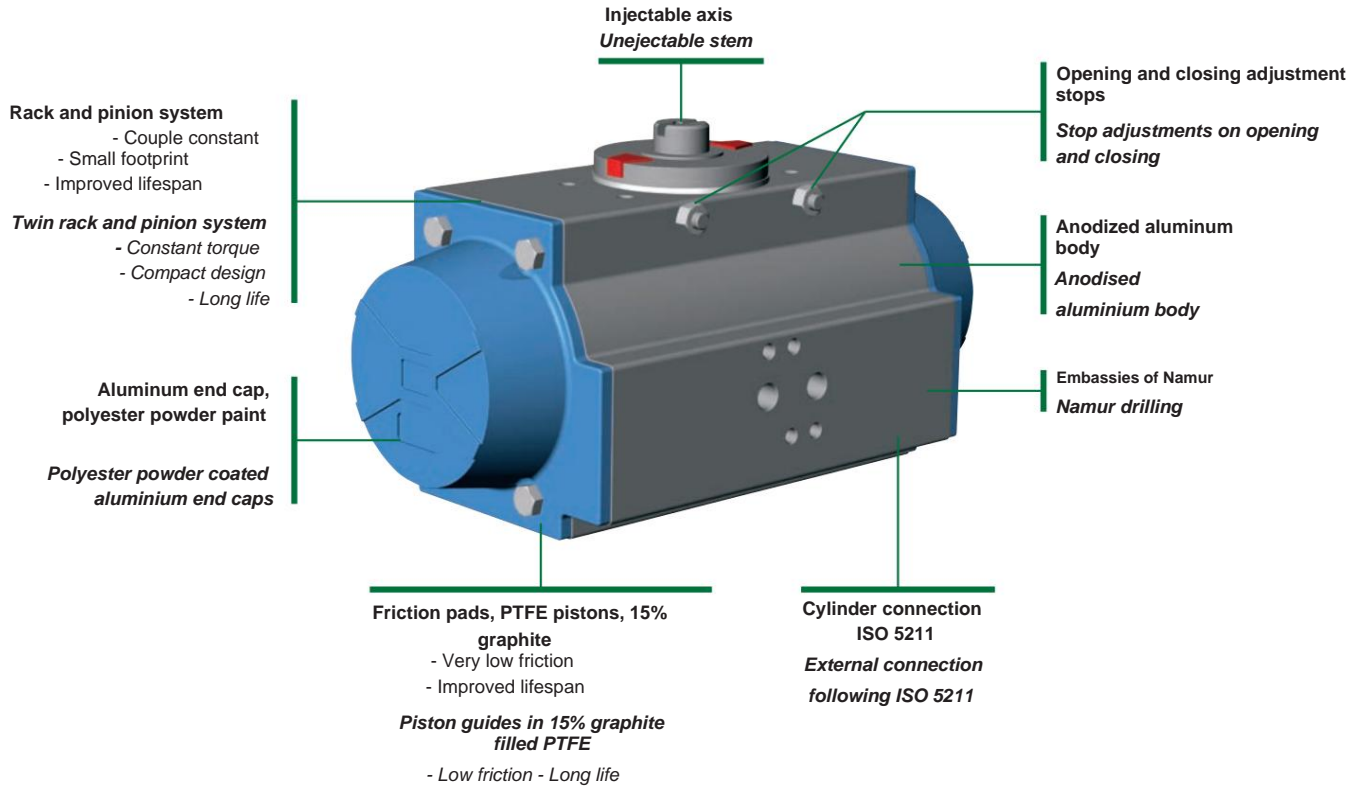
# Single and double acting pneumatic cylinder

- **NOMINAL CHARACTERISTICS** - Operating pressure (lubricated air): from 2.5 to 8 bar.
- Temperature : .
- from - 20°C to + 85°C for the standard version (NBR) .
- from - 20°C to + 150°C for the FPM version (Viton® type)
- Manual override - Lubrication
- guaranteed for life - Identical size
- for single and double-acting cylinders
- **SINGLE-ACTING MODEL** - Set of concentric springs
- Safe dismantling

ACTUATOR S

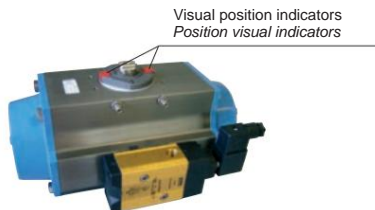
# Single and double acting pneumatic actuator

- **NOMINAL CHARACTERISTICS**
- Pressure rating (with lubricated air): from 2.5 up to 8 bar.
- Temperatures: -
- 20°C to + 85°C for standard actuator (NBR) - 20°C
- to + 150°C for high temp. actuator (FPM / type Viton®)
- Emergency manual actuator
- Life guarantee lubricated
- Same body dimensions for single and double acting actuators
- **SINGLE ACTING TYPE**
- Concentric spring set
- Safe dismantling



## • PNEUMATICAL ACCESSORIES

Electrodistributeur  
Solenoid valve



Limit switch box  
Limit switches box



Limit switches  
On/ off inductive detectors



Positionneur FOXBORO  
FOXBORO positions

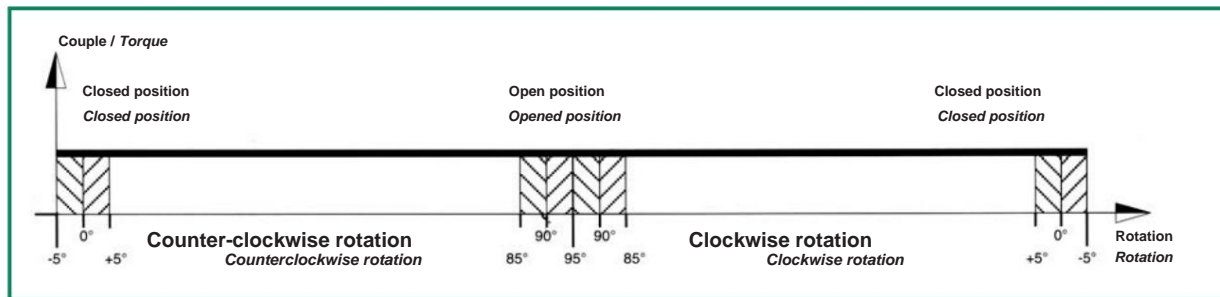
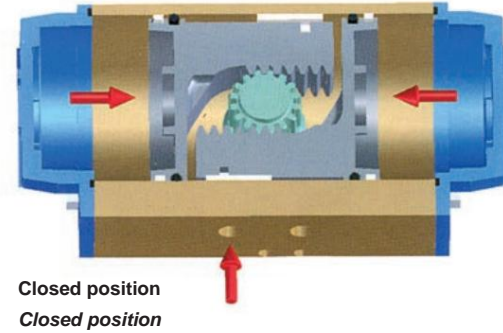
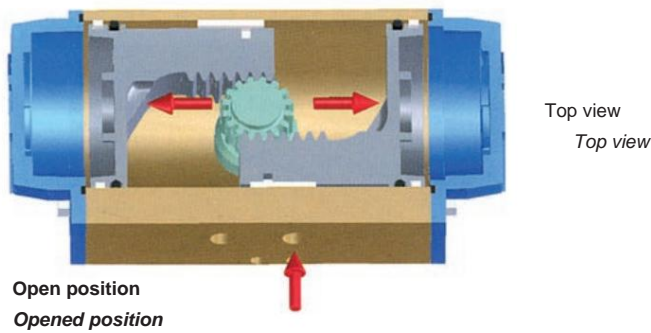


Cylinder with disengageable manual reducer  
Pneumatic actuator with declutchable manual gear box



## Double acting actuators

### Presentation



#### Selection guide for a double-acting actuator

- Referring to the graph above, it can be seen that the torque of a double-acting actuator is constant throughout its stroke. The user can select the appropriate actuator model by referring to the following suggestions:
1. Set the maximum torque of the valve to be operated.
  2. Increase this torque by 25 to 50% (depending on the type of valve and the service conditions) in order to include a safety factor.
  3. Then compare the torque obtained with the values in the table below (according to the compressed air pressure) and take the value that is equal to it or, by default, the nearest higher value.
  4. Once the value has been identified, select the appropriate actuator model from the left column of the table.

#### How to choose a double acting actuator

- Referring to the above chart, you can see that the torque of a double acting actuator is constant during the complete action. The user can proceed to the choice of the proper model according to his requirements and to the following suggestions:
1. Define the maximum torque of the valve to automate.
  2. Increase by 25-50% (depending on the valve type and the working conditions) the torque value, in order to obtain a safety rate.
  3. Then check and compare the obtained torque value with the torque table below (in correspondence with the air pressure supplied) to find a torque value equal or bigger.
  4. Once the torque value is found, select the proper actuator model by shifting to the left in column.

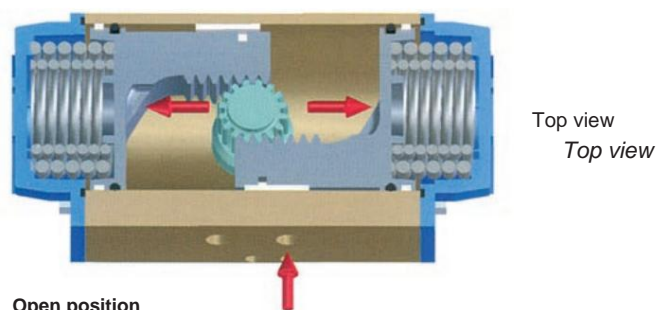
## Double-acting cylinder motor torque (Nm)

### Torque output double acting actuator (Nm)

| Model<br>Model | Pneumatic supply pressure (bar) / Air supply pressure (bar) |          |          |          |            |          |          |          |
|----------------|---|----------|----------|----------|------------|----------|----------|----------|
|                | 2.5<br>bar  | 3<br>bar | 4<br>bar | 5<br>bar | 5.5<br>bar | 6<br>bar | 7<br>bar | 8<br>bar |
| DA 32          | 3.5   | 4.2      | 6.0      | 7.5      | 8.0        | 9.0      | 10.0     | 11.5     |
| DA 52          | 9.0   | 11.0     | 14.5     | 18.5     | 20.0       | 22.0     | 26.0     | 30.0     |
| DA 63          | 15.5  | 19.0     | 26.0     | 33.0     | 36.0       | 39.5     | 46.5     | 53.5     |
| DA 75          | 29.0  | 35.0     | 47.5     | 60.0     | 66.0       | 72.0     | 84.5     | 97.0     |
| DA 85          | 41.5  | 50.5     | 68.5     | 87.0     | 96.0       | 105.0    | 123.0    | 141.0    |
| DA 100         | 66.0  | 80.0     | 108.0    | 136.0    | 150.0      | 164.5    | 193.0    | 221.0    |
| DA 115         | 109.0   | 132.0    | 179.0    | 226.0    | 249.0      | 272.0    | 319.0    | 366.0    |
| DA 125         | 143.5   | 174.0    | 235.0    | 297.0    | 327.0      | 358.0    | 419.0    | 481.0    |
| DA 160         | 300.0   | 360.0    | 480.0    | 600.0    | 660.0      | 720.0    | 840.0    | 960.0    |
| DA 200         | 562.0   | 675.0    | 900.0    | 1125.0   | 1237.0     | 1350.0   | 1575.0   | 1800.0   |
| DA 270         | 1304.0  | 1565.0   | 2086.0   | 2608.0   | 2869.0     | 3130.0   | 3651.0   | 4173.0   |

# Single acting actuators

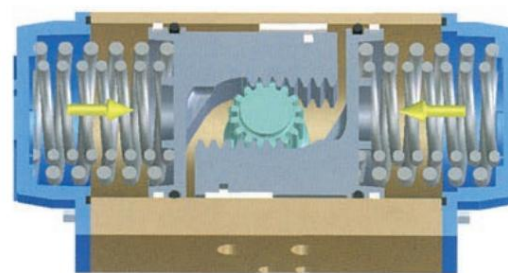
## Presentation



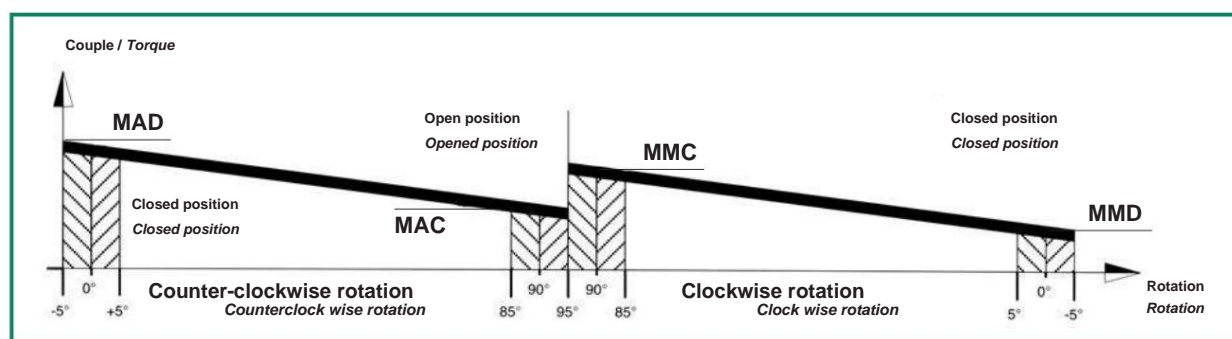
Open position  
Opened position

# Single acting actuators

## Presentation



Closed position  
Closed position



### Selection guide for a single-acting actuator

Referring to the graph above, it can be seen that the torque of a single-acting actuator decreases throughout its stroke. This is explained by the action of the springs which, by compressing, slow down the movement of the piston and accumulate potential energy. This energy will be released in a decreasing manner during the reverse movement of the piston. The torque of the actuator is defined on the basis of the following four phases: Opening rotation:

- MAD = torque with the springs released.
- MAC = torque with the springs compressed.

Closing rotation:

- MMC = torque with the springs compressed.
- MMD = torque with the springs released.

- The user can select the appropriate actuator model by referring to the following suggestions:
1. Set the maximum torque of the valve to be operated.
  2. Increase this torque by 25 to 50% (depending on the type of valve and the service conditions) in order to include a safety factor.
  3. Then compare the torque obtained with the values in the table on the following page (according to the compressed air pressure) and take the value that is equal to it or by default the nearest higher value, but using of the lowest value between MMD and MAC.
  4. Once the value has been identified, select the appropriate actuator model from the left column of the table.

### How to choose a single acting actuator

Referring to the above chart, you can see that the torque of a single acting actuator is constant, but is a decreasing one. This is due to the action of the springs, that counteract with the piston movement when compressed; and accumulate energy that will be available in a decreasing way during the rotation universal. The torque of the actuator is defined by 4 fundamental values:

Opening rotation:

- MAD = actuator torque with released springs.
- MAC = actuator torque with compressed springs.

Closing rotation:

- MMC = torque with compressed springs.
- MMD = torque with released springs.

The user can proceed to the choice of the proper model according to his requirements and to the following suggestions:

1. Define the maximum torque of the valve to automate.
2. Increase by 25-50% (depending on the valve type and the working conditions) the torque value, in order to obtain a safety rate.
3. Then check and compare the obtained torque value with the torque table below (in correspondence to the air pressure supplied) to find a torque value equal or higher, but considering the lower value between MMD and MAC.
4. Once the torque value is found, select the proper actuator model by shifting to the left in column.

# Operating torque of single-acting actuators

# Torque chart for single acting actuators

| Model<br>Model | Game of springs<br>Spring set | Torque of springs<br>(Nm) |            | Pneumatic supply pressure (bar) / Air supply pressure (bar) |            |           |            |           |            |           |            |           |            |           |            |           |            |        |       |
|----------------|-------------------------------|---------------------------|------------|---|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|--------|-------|
|                |                               |                           |            | 2.5   |            | 3.45      |            | 5.5       |            | 6         |            | 7         |            | 8         |            |           |            |        |       |
|                |                               | 0°<br>MMD                 | 90°<br>MMC | 0°<br>MAD   | 90°<br>MAC | 0°<br>MAD | 90°<br>MAC | 0°<br>MAD | 90°<br>MAC | 0°<br>MAD | 90°<br>MAC | 0°<br>MAD | 90°<br>MAC | 0°<br>MAD | 90°<br>MAC | 0°<br>MAD | 90°<br>MAC |        |       |
| SR 63          | 01                            | 5.0                       | 9.6        | 8.6   | 2.6        | 12.0      | 6.0        | 18.9      | 12.8       |           |            |           |            |           |            |           |            |        |       |
|                | 02                            | 6.6                       | 12.3       |   |            | 10.5      | 3.2        | 17.4      | 10.1       | 24.2      | 17.0       |           |            |           |            |           |            |        |       |
|                | 03                            | 8.0                       | 14.5       |   |            |           |            | 15.9      | 7.9        | 22.8      | 14.8       | 26.2      | 18.2       | 29.6      | 21.7       |           |            |        |       |
|                | 04                            | 9.6                       | 17.2       |   |            |           |            | 14.4      | 5.2        | 21.2      | 12.0       | 24.6      | 15.5       | 28.1      | 18.9       | 34.9      | 25.8       |        |       |
|                | 05                            | 12.5                      | 22.1       |   |            |           |            |           |            | 18.2      | 7.1        | 21.7      | 10.6       | 25.1      | 14.0       | 31.9      | 20.9       | 38.8   | 27.7  |
| SR 85          | 01                            | 16.1                      | 27.3       | 22.2  | 7.6        | 31.3      | 16.6       | 49.5      | 34.8       |           |            |           |            |           |            |           |            |        |       |
|                | 02                            | 19.9                      | 33.7       |   |            | 27.6      | 10.3       | 45.7      | 28.4       | 63.9      | 46.6       |           |            |           |            |           |            |        |       |
|                | 03                            | 24.3                      | 40.8       |   |            |           |            | 41.3      | 21.3       | 59.4      | 39.5       | 68.5      | 48.6       | 77.6      | 57.6       |           |            |        |       |
|                | 04                            | 28.1                      | 47.1       |   |            |           |            | 37.5      | 15.0       | 55.7      | 33.1       | 64.8      | 42.2       | 73.8      | 51.3       | 92.0      | 69.4       |        |       |
|                | 05                            | 36.3                      | 60.6       |   |            |           |            |           |            | 47.5      | 19.6       | 56.6      | 28.7       | 65.6      | 37.8       | 83.8      | 55.9       | 101.9  | 74.1  |
| SR 100         | 01                            | 24.6                      | 44.6       | 36.0  | 10.1       | 50.2      | 24.2       | 78.4      | 52.5       |           |            |           |            |           |            |           |            |        |       |
|                | 02                            | 32.6                      | 58.9       |   |            | 42.2      | 9.9        | 70.5      | 38.1       | 98.7      | 66.4       |           |            |           |            |           |            |        |       |
|                | 03                            | 35.9                      | 63.7       |   |            |           |            | 67.1      | 33.3       | 95.4      | 61.6       | 109.5     | 75.7       | 123.6     | 89.9       |           |            |        |       |
|                | 04                            | 43.9                      | 78.0       |   |            |           |            | 59.1      | 19.0       | 87.4      | 47.3       | 101.5     | 61.4       | 115.7     | 75.5       | 143.9     | 103.8      |        |       |
|                | 05                            | 55.2                      | 97.2       |   |            |           |            |           |            | 76.1      | 28.1       | 90.2      | 42.3       | 104.3     | 56.4       | 132.6     | 84.7       | 160.8  | 112.9 |
| SR 115         | 01                            | 41.0                      | 74.4       | 61.3  | 18.4       | 84.7      | 41.8       | 131.4     | 88.5       |           |            |           |            |           |            |           |            |        |       |
|                | 02                            | 50.7                      | 94.4       |   |            | 74.9      | 21.8       | 121.6     | 68.5       | 168.3     | 115.2      |           |            |           |            |           |            |        |       |
|                | 03                            | 60.8                      | 108.1      |   |            |           |            | 111.6     | 54.7       | 158.3     | 101.5      | 181.6     | 124.8      | 205.0     | 148.2      |           |            |        |       |
|                | 04                            | 70.6                      | 128.1      |   |            |           |            | 101.8     | 34.8       | 148.5     | 81.5       | 171.9     | 104.9      | 195.2     | 128.2      | 241.9     | 174.9      |        |       |
|                | 05                            | 90.4                      | 161.8      |   |            |           |            |           |            | 128.7     | 47.8       | 152.0     | 71.1       | 175.4     | 94.5       | 222.1     | 141.2      | 268.8  | 187.9 |
| SR 125         | 01                            | 53.1                      | 99.1       | 80.2  | 21.2       | 110.9     | 51.9       | 172.2     | 113.2      |           |            |           |            |           |            |           |            |        |       |
|                | 02                            | 63.3                      | 117.5      |   |            | 100.7     | 33.5       | 162.1     | 94.8       | 223.4     | 156.1      |           |            |           |            |           |            |        |       |
|                | 03                            | 81.1                      | 148.4      |   |            |           |            | 144.2     | 63.9       | 205.5     | 125.2      | 236.2     | 155.9      | 266.8     | 186.5      |           |            |        |       |
|                | 04                            | 91.3                      | 166.9      |   |            |           |            | 134.1     | 45.5       | 195.4     | 106.8      | 226.1     | 137.5      | 256.7     | 168.1      | 318.0     | 229.4      |        |       |
|                | 05                            | 119.2                     | 216.2      |   |            |           |            |           |            | 167.4     | 57.5       | 198.1     | 88.1       | 228.7     | 118.8      | 290.1     | 180.1      | 351.4  | 241.4 |
| SR 160         | 01                            | 100.0                     | 152.0      | 186.0   | 126.0      | 245.0     | 188.0      |           |            |           |            |           |            |           |            |           |            |        |       |
|                | 02                            | 147.0                     | 225.0      |   |            | 198.0     | 116.0      | 317.0     | 234.0      |           |            |           |            |           |            |           |            |        |       |
|                | 03                            | 173.0                     | 264.0      |   |            | 170.0     | 74.0       | 290.0     | 193.0      | 407.0     | 311.0      |           |            |           |            |           |            |        |       |
|                | 04                            | 200.0                     | 321.0      |   |            |           |            | 260.0     | 136.0      | 378.0     | 255.0      | 437.0     | 312.0      |           |            |           |            |        |       |
|                | 05                            | 252.0                     | 376.0      |   |            |           |            |           |            | 330.0     | 191.0      | 388.0     | 251.0      | 447.0     | 310.0      |           |            |        |       |
|                | 06                            | 300.0                     | 473.0      |   |            |           |            |           |            |           |            | 335.0     | 161.0      | 395.0     | 220.0      | 512.0     | 332.0      | 627.0  | 445.0 |
| SR 200         | 01                            | 174.0                     | 245.0      | 362.0   | 270.0      | 472.0     | 387.0      |           |            |           |            |           |            |           |            |           |            |        |       |
|                | 02                            | 247.0                     | 356.0      |   |            | 398.0     | 273.0      | 621.0     | 498.0      |           |            |           |            |           |            |           |            |        |       |
|                | 03                            | 298.0                     | 424.0      |   |            | 344.0     | 192.0      | 568.0     | 425.0      | 789.0     | 649.0      |           |            |           |            |           |            |        |       |
|                | 04                            | 353.0                     | 531.0      |   |            |           |            | 510.0     | 317.0      | 731.0     | 541.0      | 842.0     | 651.0      |           |            |           |            |        |       |
|                | 05                            | 421.0                     | 602.0      |   |            |           |            |           |            | 655.0     | 447.0      | 767.0     | 562.0      | 878.0     | 675.0      |           |            |        |       |
|                | 06                            | 527.0                     | 776.0      |   |            |           |            |           |            |           |            | 662.0     | 396.0      | 777.0     | 510.0      | 994.0     | 721.0      | 1209.0 | 935.0 |

## Choice of the number of springs / Spring setting table

### Du SR52 au SR125 / From SR52 to SR125

| Game Set | external department<br>External spring | Internal spring<br>Internal spring | Feed<br>Air supply bar |
|----------|--|------------------------------------|------------------------|
| 01       | 1                                      | 1                                  | to (to) 3 3 to         |
| 02       | 2                                      | 1                                  | (to) 4 3 to            |
| 03       | 1                                      | 2                                  | (to) 5 5 to            |
| 04       | 2                                      | 1                                  | (to) 6                 |
| 05       | 2                                      | 2                                  | 6 à (to) 7             |

### SR160 et SR200 / SR160 and SR200

| Game Set | external department<br>External spring | Ressort central<br>Central spring | Internal spring<br>Internal spring | Feed<br>Air supply bar |
|----------|--|-----------------------------------|------------------------------------|------------------------|
| 01       | 1                                      | 2                                 | 1                                  | 2.5 à (to) 3           |
| 02       | 2                                      | 1                                 | 1                                  | 3 à (to) 4 3           |
| 03       | 1                                      | 2                                 | 1                                  | à (to) 5               |
| 04       | 2                                      | 1                                 | 2                                  | 4 à (to) 5.5           |
| 05       | 2                                      | 2                                 | 1                                  | 5 à (to) 6 6           |
| 06       | 2                                      | 2                                 | 2                                  | à (to) 7               |

## Double and single acting pneumatic cylinders

Montage ISO 5211

The ranges of TECFLY and TECFLY LUG butterfly valves are designed to accept all types of single- or double-acting pneumatic cylinders as standard thanks to the mounting base that complies with standard NF EN ISO 5211.

## Double and single acting pneumatic actuators

ISO 5211 connection

The ranges of butterfly valves are designed to accept normally all the types of single or double acting pneumatic actuators thanks to its connecting according to the standard NF EN ISO 5211.



### Technical characteristics / Technical characteristics

| DN     | P  | Ranges / Ranges<br>TECFLY - TECFLY LUG   |                               |                | Pneumatic cylinders<br>Pneumatic actuators |   |                | Assembly parts<br>Assembly parts |  |
|--------|----|--|-------------------------------|----------------|--|---|----------------|----------------------------------|--|
|        |    | Embase<br>Mounting<br>flange<br>ISO 5211 | Diam. axe<br>Stem<br>diameter | Edge<br>Square | Model<br>Model                             | Platinum<br>Mounting<br>plate<br>ISO 5211 | Edge<br>Square | Square adapter<br>Square adapter | Spacer<br>Thickness - inside diameter<br>Spacer<br>Thickness - Inside diameter |
| mm bar |    |  | mm                            | mm             |  |   | mm             |                                  |  |
| 40     | 10 | F07                                      | 14.33                         | 11             | SR63                                       | F05-F07                                   | 14             | 11x14<br>(VPADAPIISO-11X14X15)   | 17 - 16<br>(VPENTRISOVE 0101)  |
|        |    |  |                               |                | DA63                                       | F05-F07                                   | 14             |                                  |  |
| 50     | 10 | F07                                      | 14.33                         | 11             | SR63                                       | F05-F07 F05-                              | 14             | 11x14<br>(VPADAPIISO-11X14X15)   | 17 - 16<br>(VPENTRISOVE 0101)  |
|        |    |  |                               |                | DA63                                       | F07 F05-F07                               | 14             |                                  |  |
| 65     | 10 | F07                                      | 14.33                         | 11             | SR85                                       | F05-F07                                   | 17             | 11x17 (VPADAPIISO-11X17X15)      | 17 - 16<br>(VPENTRISOVE 0101)  |
|        |    |  |                               |                | DA63                                       | F07-F10                                   | 14             |                                  |  |
| 80     | 10 | F07                                      | 14.33                         | 11             | SR100                                      | F05-F07                                   | 17             | 11x17 (VPADAPIISO-11X17X15)      | 17 - 16<br>(VPENTRISOVE 0101)  |
|        |    |  |                               |                | DA63                                       | F07-F10                                   | 14             |                                  |  |
| 100    | 10 | F07                                      | 15.87                         | 11             | SR100                                      | F05-F07                                   | 17             | 11x17<br>(VPADAPIISO-11X17X15)   | 17 - 16<br>(VPENTRISOVE 0101)  |
|        |    |  |                               |                | DA75                                       | F07-F10                                   | 17             |                                  |  |
| 125    | 10 | F07                                      | 19.05                         | 14             | SR115                                      | F05-F07                                   | 22             | 14x22 (VPADAPIISO-14X22X15)      | 17 - 20<br>(VPENTRISOVE 0102)  |
|        |    |  |                               |                | DA85                                       | F07-F10                                   | 17             |                                  |  |
| 150    | 10 | F07                                      | 19.05                         | 14             | SR115                                      | F07-F10                                   | 22             | 14x22 (VPADAPIISO-14X22X15)      | 17 - 20<br>(VPENTRISOVE 0102)  |
|        |    |  |                               |                | DA100                                      | F10-F12                                   | 17             |                                  |  |
| 200    | 10 | F10                                      | 22.22                         | 17             | SR160                                      | F07-F10                                   | 27             | 17x27 (VPADAPIISO-17X27X23)      | 22 - 25<br>(VPENTRISOVE 0103)  |
|        |    |  |                               |                | DA115                                      | F14                                       | 22             |                                  |  |
| 250    | 10 | F10                                      | 28.45                         | 22             | SR200                                      | F07-F10                                   | 36             | 22x36 (VPARCAISOVE)              | 70 - 70 (VPARCAISOVE)  |
|        |    |  |                               |                | DA125                                      | F14                                       | 22             |                                  |  |
| 300    | 10 | F10                                      | 31.60                         | 22             | SR200                                      | F10-F12                                   | 36             | 22x36 (VPARCAISOVE)              | 70 - 70 (VPARCAISOVE)  |
|        |    |  |                               |                | DA160                                      |   | 27             |                                  |  |

## Accessories

### Position sensors / Position switches

#### Mechanical sensors / Mechanical switches

| Builder<br>Manufacturer | Reference<br>Reference | Supply voltage<br>Power | Protection sign<br>Protection class |
|-------------------------|------------------------|-------------------------|-------------------------------------|
| Telemecanique           | XCK-M115               | U=240V                  | IP 66                               |
| Telemecanique           | XCK-P102               | U=240V                  | IP 65                               |
| ABB                     | LS71M45B11             | U=240V                  | IP 66                               |



XCK-M115

#### Capteurs inductifs / Proximity limit switches

| Form / Form                            | IN                                      | IN                                    | IN   |
|--|---|---------------------------------------|--|
| Housing material<br>Housing material   | Plastic / Plastic<br>PBT                | Plastic / Plastic<br>PBT              | Plastic / Plastic<br>PBT                           |
| Number of threads<br>Wire number       | 4                                       | 4                                     | 4 (1)<br>2 (2)                                     |
| Connection<br>Connection               | Cable / Cable                           | Connector / Connector<br>M12 - 4 pins | Cable / Cable                                      |
| Sortie / Output                        | 2 x NO                                  | 2 x NO                                | 2 x NF   |
| Operating voltage<br>Operating voltage | 10-36 V DC (1)<br>10-30 V DC (2)        | 10-36 V DC (1)<br>10-30 V DC (2)      | 10-36 V DC (1)<br>8 V DC (2)                       |
| Scope<br>Rated operating distance      | 4 mm (1)<br>3 mm (2)                    | 4 mm (1)<br>3 mm (2)                  | 4 mm (1)<br>3 mm (2)                               |
| Protection                             | IP 67 (1)<br>IP 68 (2)                  | IP 67                                 | IP 67 ATEX 1G/1D/2G (1)<br>IP 68 ATEX 2G/3G/3D (2) |
| Builders<br>Manufacturers              | Product references / Product references |                                       |  |
| IFM                                    | IN5251                                  | IN5225                                | NN5009   |
| Pepperl + Fuchs                        | NBN3-F31K-E8-K                          | NBN3-F31-E8-V1                        | NCN3-F31K-N4-K                                     |



XCK-P102



IN

1. IFM 2. Pepperl +

Fuchs Indicative table, consult us for other characteristics, manufacturers or references.

Table just for indication, please consult us for other characteristics, manufacturers or other references.

### Electrodistributeur / Solenoid valve

#### Parker Lucifer

- Pneumatic circuits: 3/2 - 5/2

Pneumatic circuits: 3/2 - 5/2

- Bobine : 12, 24, 48, 220V AC/DC

Coil: 12, 24, 48, 220V AC/DC

- With emergency control

With emergency manual operating - 2

dimensions 4 et 8 mm de passage

Two dimensions, 4 and 8 mm bore



## Examples of assembly / Assembling examples

### Mounting with a chain wheel Assembling with a chainwheel

#### Chainwheel -

Allows the tap to be operated from a distance.

- Very reliable.
- No maintenance.
- Can be mounted on all taps fitted with a reducer.

- Optional chain guide.

#### Chainwheel -

Very reliable remote handling.

- No maintenance.
- Can be fixed on all types of valves with gearbox.
- Chain guide on request.



### Assembly of sensors and limit boxes for a butterfly valve operated by a handle Proximity limit switch assembling on a butterfly valve with handle



Simple assemblies allowing remote supervision.  
Easy assemblies for remote control.



## electric motors

### BERNARD motors / BERNARD actuators

#### ÿ 90° Direct



| Type | Couple<br>Torque<br>Nm | Operation time<br>Operating time<br>seconde /second |
|------|------------------------|---|
| OA6  | 60                     | 3 or (or) 6 3                                       |
| OA8  | 80                     | or (or) 6   |
| OAP  | 80 or (or) 100         | 30 or (or) 60                                       |
| OA15 | 150                    | 15 or (or) 25                                       |
| AS18 | 200                    | s   |
| AS25 | 250                    | 5 or (or) 10  |
| ASP  | 250                    | 30 or (or) 60 30                                    |
| AS50 | 600                    | or (or) 60  |
| AS80 | 800                    | 30 or (or) 60                                       |

#### ÿ 90° Combi



| Type         | Couple<br>Torque<br>Nm | Operation time<br>Operating time<br>seconde /second |
|--------------|------------------------|---|
| AS100        | 1000                   | 15 à (to) 80 50                                     |
| AS200        | 2500                   | à (to) 185  |
| AS400        | 4000                   | 90 à (to) 185                                       |
| AS200        | 2500                   | 35 à (to) 180 60                                    |
| AS600        | 5800                   | à (to) 180  |
| AS1000       | 10000                  | 90 à (to) 210                                       |
| ASM2+RS1830G | 18000                  | 79 à (to) 238                                       |

#### ÿ Reducers / Gear boxes



Quarter turn / Quarter turn  
250 to (to) 100,000

Nm Wheel multiturn / Spur gear  
multiturn 250 to (to)

10,000 Nm Bevel gear  
multiturn 250 to (to)  
5,000 Nm

### AUMA motors / AUMA actuators

#### ÿ SA series / SA series



| Type                       | Couple<br>Torque<br>Nm | Operation time<br>Operating time<br>second /second 32 |
|----------------------------|------------------------|---|
| SG12.1                     | 1200                   | to (to) 63 69 to                                      |
| SA07.1 + VZ4.3 + GS100.3   | 2000                   | (to) 142  |
| SA07.5 + VZ4.3 + GS125.3   | 4000                   | 69 à (to) 142   |
| SA07.5 + GZ160.3 + GS160.3 | 8000                   | 147 à (to) 301 73                                     |
| SA10.1 + GZ160.3 + GS160.3 | 11250                  | à (to) 149  |
| SA10.1 + GZ200.3 + GS200.3 | 22500                  | 145 à (to) 2965                                       |

#### ÿ SG series / SG series



| Type   | Couple<br>Torque<br>Nm | Operation time<br>Operating time<br>second /second 4 to |
|--------|------------------------|---|
| SG05.1 | 150                    | (to) 32 5 to  |
| SG07.1 | 300                    | (to) 32   |
| SG10.1 | 600                    | 11 à (to) 63  |

#### ÿ Reducer / Gear box



Quarter turn / Quarter turn  
250 to (to) 56,000 Nm



# electric motors

# Electric actuators

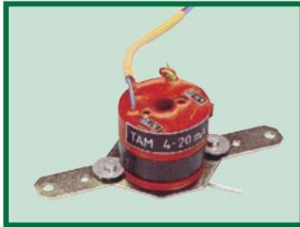
## Options for Bernard motors / Options for Bernard actuators

**Remote Copy**

- Potentiometer - Transmitter 4-20 mA
- Inductive transmitter

**Remote indication**

- Potentiometer - 4-20 mA transmitter
- Contactless transmitter



**Version ADF / Explosion proof**  
- EEx ed - EEx d

**Full version + Integral + version**



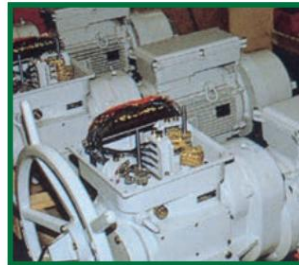
**Prises multibroches / Multipin plugs**  
Power - Control / Power - Control

**Built-in 4-20 mA positioner**

- Class III - Class II - Class I

**Incorporated positioner 4-20 mA**

- Class III - Class II - Class I



**nuclear version**  
**Nuclear version**

**Special contacts**

- Double pole - Waterproof - Under nitrogen
- Tandem

**Special contacts**

- DPDT - Waterproof - Encapsulated
- Tandem



**Environment / Environment**

• Résistance anti-condensation / Anti-condensation heater

| place of installation<br>Site of installation  | Servomotor protection recommendation<br>Recommended actuator protection                                | place of installation<br>Site of installation                                    | Servomotor protection recommendation<br>Recommended actuator protection  |
|--|--|--|--|
| Inside a building<br>Inside a building   | Waterproof IP65 or NEMA 4<br>Weatherproof IP65 or NEMA 4   | By the seaside<br>On-shore   | Etanche IP66 or NEMA 4X<br>+ protection marine +<br>Watertight IP66 or NEMA 4X<br>+ marine protection +          |
| Outside under cover<br>Outdoors under shelter  | Waterproof IP65+ +<br>I am NEMA 4<br>Weatherproof IP65 + +<br>or NEMA 4                                | One more<br>Off-shore  | Waterproof IP66 or NEMA 4X<br>+ off-shore protection +<br>Watertight IP66 or NEMA 4X +<br>off-shore protection + |
| Outdoors<br>Outdoors   | Waterproof IP67 + epoxy + +<br>I am NEMA 4<br>Watertight IP67 + epoxy + +<br>or NEMA 4                 | In a corrosive atmosphere<br>(chemicals, alumina, etc.)<br>Corrosive environment | special<br>Special   |
| With risk of temporary immersion (less than 30 minutes)<br>Risk of temporary submersion (less than 30 mn and less than 1 m deep) | Waterproof IP67 or NEMA 6<br>+ special paint + +<br>Watertight IP67 or NEMA 6<br>+ special paint + +   | Nuclear<br>Nuclear   | Qualified Servo<br>next RCCE<br>Actuator qualification<br>according to RCCE                                      |
| With risk of temporary immersion (time to be determined)<br>Risk of temporary submersion (time lapse and depth to be defined)    | Waterproof IP68 or NEMA 6P<br>+ special paint + +<br>Watertight IP68 or NEMA 6P +<br>special paint + + | In atmosphere with risk of explosion<br>Hazardous areas                          | explosion proof<br>ATEX or NEMA<br>Explosionproof<br>ATEX or NEMA  |

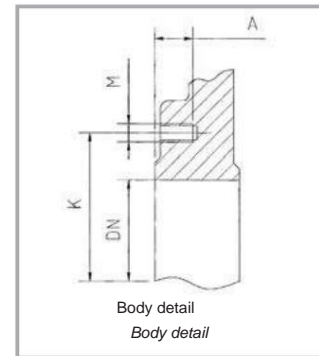
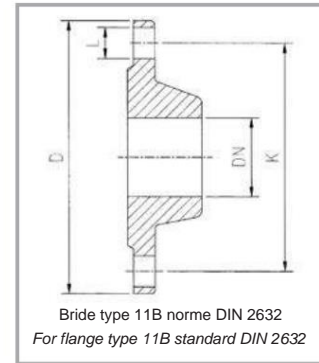
**Type of operation of the device to be driven / Type of operation of the device to be driven**

| Type of operation<br>Type of operation   | Servo motor operation<br>Actuator function   | Type of operation<br>Type of operation  | Servo motor operation<br>Actuator function |
|--|--|---|--|
| Open or close over the entire stroke, on average 20 to 30 times a day<br>Open or close the full stroke, on average 20 to 30 times/day  | All or nothing<br>On-off                     | Reach intermediate positions, with good accuracy (better than 1%), continuously every 2-3 seconds<br>Select intermediate positions, with high precision (better than 1%), on a permanent basis every 2 or 3 seconds | Class II regulation<br>Modulating Class II |
| Hit intermediate positions, with sufficient accuracy (better than 2%), on average 360 times per day<br>Select intermediate positions, with good precision (better than 2%), on average 360 times/day | Class III regulation<br>Modulating Class III | Perform rapid positioning, with an accuracy better than 0.5%, with a change of position permanence<br>Fast positioning, with excellent precision (0.5% or better), and continuous movement                          | Class I regulation<br>Modulating Class I   |

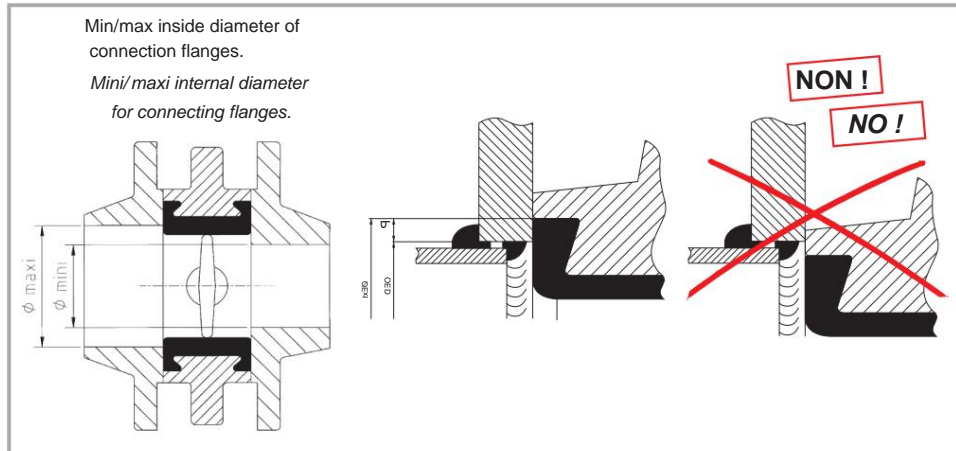
# ISO PN 10 connection for type 11B flange

# Flanged ISO PN 10 for flange type 11B

| DN                | Flange connection      |                |                             | Equipment for mounting between 2 flanges   |                                 |                             |                                 |                             |
|-------------------|------------------------|----------------|-----------------------------|--|---------------------------------|-----------------------------|---------------------------------|-----------------------------|
|                   | Flange connection      |                |                             | Equipment for assembling between 2 flanges |                                 |                             |                                 |                             |
|                   | Diameter hole drilling | Outer diameter | Number of holes             | TECFLY / TECLARGE                          |                                 | TECFLY LUG                  | KEY FL                          |                             |
|                   | Ø D                    | Ø K            | x Ø L                       | Bolts (red)<br>Name x MI                   | Screw (yellow)<br>Name x MI     | Screw (yellow)<br>Name x MI | Bolts (red)<br>Name x MI        | Screw (yellow)<br>Name x MI |
| External diameter | Drilling circle        | Hole number    | Bolt (red)<br>Number x M-Ig | Screw (yellow)<br>Number x M-Ig            | Screw (yellow)<br>Number x M-Ig | Bolt (red)<br>Number x M-Ig | Screw (yellow)<br>Number x M-Ig |                             |
| mm inch           | mm mm                  | mm             | TYPE 1                      | TYPE 3                                     | TYPE 2                          | TYPE 3                      | TYPE 3                          |                             |
|                   |                        |                | mm                          | mm   | mm                              | mm                          | mm                              |                             |
| 40                | 1" 1/2 2"              | 150            | 110                         | 4 x 18 4                                   | 4 x M 16-100 4 x M              | -                           | 8 x M 16-30 8 x M               | -                           |
| 50                |                        | 165            | 125                         | x 18                                       | 16-110 4 x M 16-120             | -                           | 16-35 8 x M 16-35               | -                           |
| 65                | 2" 1/2                 | 185            | 145                         | 4 x 18 8                                   | 8 x M 16-120 8 x M              | -                           | 16 x M 16-40 16                 | -                           |
| 80                | 3"                     | 200            | 160                         | x 18                                       | 16-130 8 x M 16-130             | -                           | x M 16-40 16 x M                | -                           |
| 100               | 4"                     | 220            | 180                         | 8 x 18 8                                   | 8 x M 20-140 8 x M              | -                           | 16-45 16 x M 20-45              | -                           |
| 125               | 5"                     | 250            | 210                         | x 18 8 x                                   | 20-150 12 x M                   | -                           | 16 x M 20-50 24 x               | -                           |
| 150               | 6"                     | 285            | 240                         | 22 8 x                                     | 20-160 12 x M                   | -                           | M 20-55 24 x M                  | -                           |
| 200               | 8"                     | 340            | 295                         | 22 12 x                                    | 20-170 16 x M                   | -                           | 20-60                           | -                           |
| 250               | 10"                    | 395            | 350                         | 22   | 20-170 16 x M 24-220            | -                           | -                               | -                           |
| 300               | 12"                    | 445            | 400                         | 12 x 22                                    | 20 x M 24-130 20 x              | -                           | -                               | -                           |
| 350               | 14"                    | 505            | 460                         | 16 x 22 16                                 | M 24-230 20 x M                 | -                           | 16 x M 20-170 16 x              | -                           |
| 400               | 16"                    | 565            | 515                         | x 28 20 x                                  | 27-260 24 x M 27-270            | -                           | M 24-200 20 x M                 | -                           |
| 450               | 18"                    | 615            | 565                         | 26 20 x 26                                 | 24 x M 30-300 24 x              | -                           | 24-220 20 x M 24-240            | -                           |
| 500               | 20"                    | 670            | 620                         | 20 x 30 24                                 | M30 -320 24 x M                 | -                           | 20 x M 27-260 20 x              | -                           |
| 600               | 24"                    | 780            | 725                         | x 30 24 x                                  | 33-340 28 x M 36-390            | -                           | M 27-280 20 x M                 | -                           |
| 700               | 28"                    | 895            | 840                         | 33 28 x 33                                 | -                               | -                           | 30-300 24 x M30 -320            | 8 x M 27-70 8 x M           |
| 800               | 32"                    | 1015           | 950                         | 28 x 36 32                                 | -                               | -                           | 24 x M 33-340 28 x              | 30-120 8 x M 30-70          |
| 900               | 36"                    | 1115           | 1050                        | x 39                                       | -                               | 8 x M30 -70 8 x M           | M 36-390                        | 8 x M 33-70 8 x M           |
| 1000              | 40"                    | 1230           | 1160                        | -  | -                               | 33-70 8 x M 36-80           | -                               | 36-75                       |
| 1200              | 48"                    | 1455           | 1380                        | -  | -                               | -                           | -                               | -                           |



| DN           | Inner diameter of the flanges |      |      |
|--------------|-------------------------------|------|------|
|              | Flange internal diameter      |      |      |
| mm inch      | 40 1"                         | mini | maxi |
| 1/2 50 2"    | 65                            | 25   | 50   |
| 2" 1/2 80 3" | 36                            | 63   |      |
| 100 4"       | 125 5"                        | 50   | 78   |
| 150 6"       | 200                           | 66   | 91   |
| 8" 250 10"   | 92                            | 116  |      |
| 300 12"      | 350                           | 118  | 147  |
| 14" 400 16"  | 143                           | 171  |      |
| 450 18"      | 500                           | 196  | 223  |
| 20" 600 24"  | 246                           | 277  |      |
| 700 28"      | 800                           | 297  | 328  |
| 32" 900 36"  | 324                           | 359  |      |
| 1000 40"     | 1200                          | 376  | 412  |
| 48"          | 425                           | 462  |      |
|              | 475                           | 514  |      |
|              | 572                           | 630  |      |
|              | 675                           | 722  |      |
|              | 772                           | 842  |      |
|              | 841                           | 925  |      |
|              | 941                           | 1025 |      |
|              | 1170                          | 1235 |      |



## Types de montage / Type of assembling



Mounting type 1 With bolt set.

Assembling type 1 With bolts set.



Mounting type 2 With screws.

Assembling type 2 With screws.



Mounting type 3 With screws and bolt set.

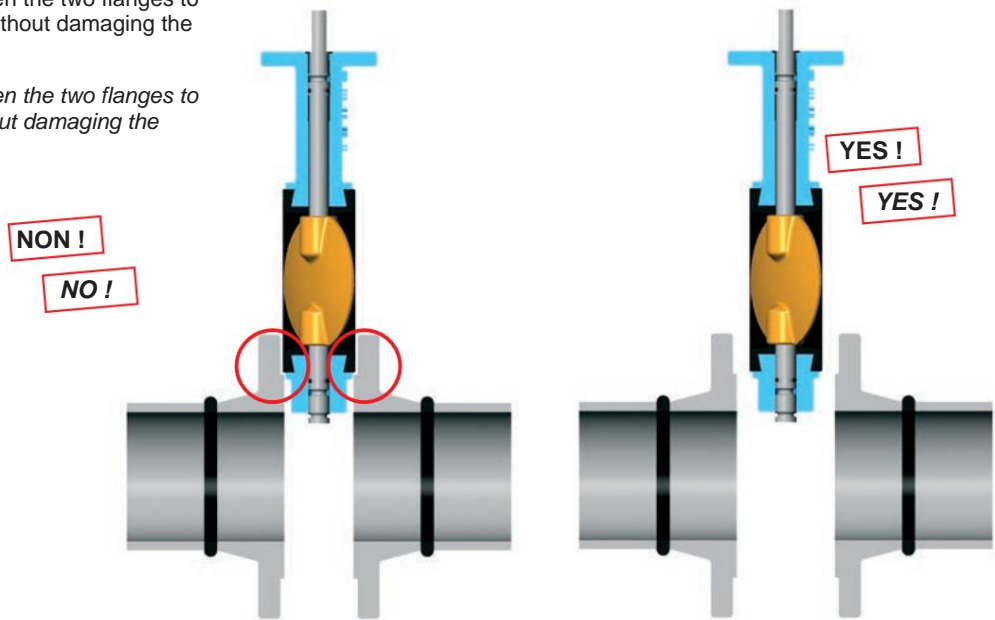
Assembling type 3 With screws and bolts set.

## Precautions for use

## Precautionary measures

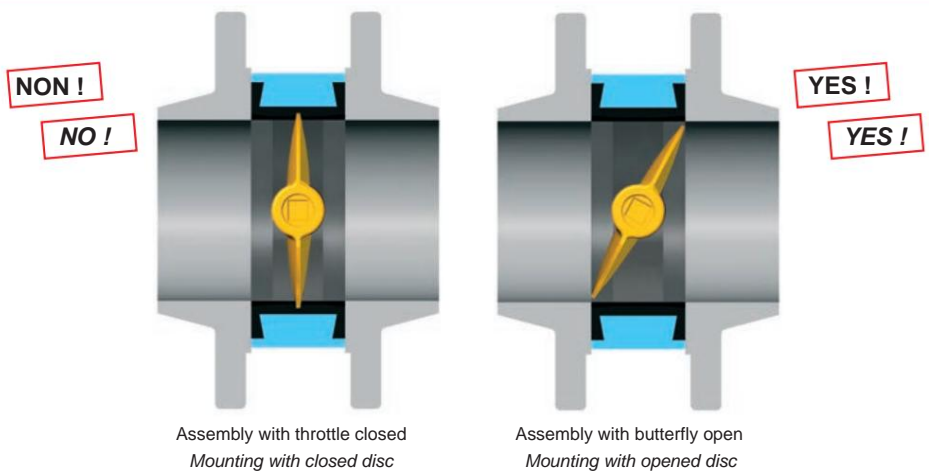
Leave enough space between the two flanges to be able to insert the valve without damaging the sleeve.

*Leave enough space between the two flanges to allow valve installation without damaging the sleeve.*



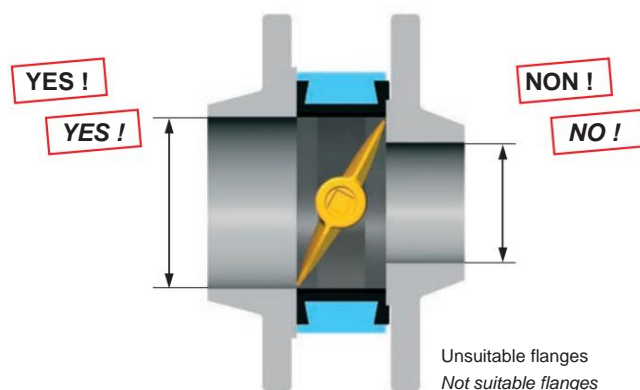
Do not mount the butterfly valve in the closed position. The cuff may be deformed causing tightening, jamming and leakage.

*Do not assemble the butterfly valve in closed position to avoid sleeve deformation causing high tightening, sticking and leakage.*



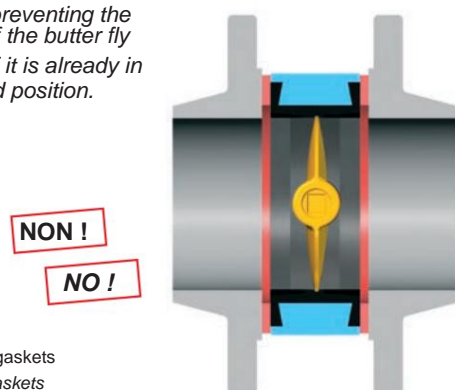
Non-compliant flanges can block the butterfly and/or create turbulence in the pipe.

*Not suitable flanges can jam the disc or/and create turbulences in the pipe.*



The fitting of a gasket between the flange and the sleeve leads to excessive deformation of the latter. This has the effect of preventing the butterfly from closing or blocking it if it is already in the closed position.

*The installation of a gasket between the flange and the sleeve results in an excessive deformation of the latter, this has the effect of preventing the closure of the butterfly or block if it is already in the closed position.*



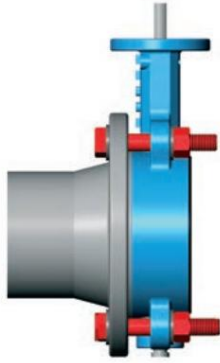
## Precautions for use

### Downstream

**dismantling** For pressurized assembly of winged butterfly valves, the operating pressure must not exceed 0.4 times the PN.

### Downstream dismantling

For the mounting under pressure of smooth lugged butterfly valve, the working pressure shall not exceed 0.4 time the nominal pressure.

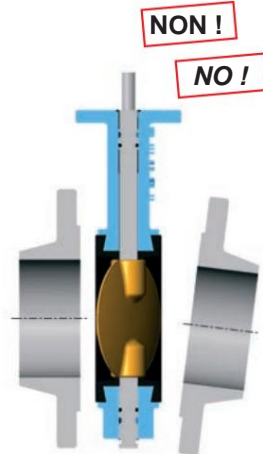


### Parallelism

Make sure the flanges are parallel.

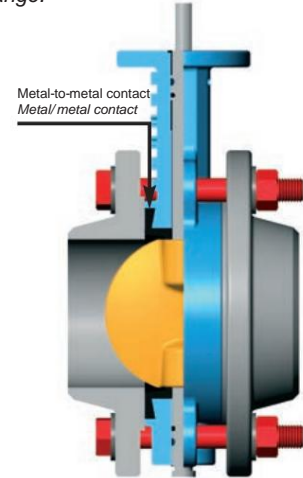
### Parallelism

Check the good parallelism of the flanges.



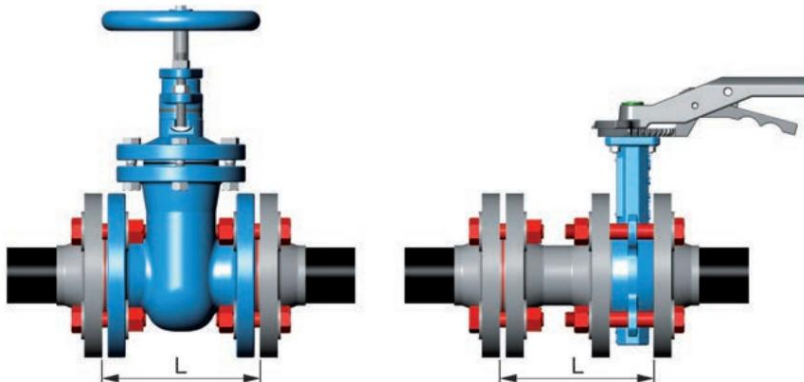
Tighten the bolts gradually to obtain metal-to-metal contact.

Progressively tighten the bolts in order to get the contact between the body and the flange.



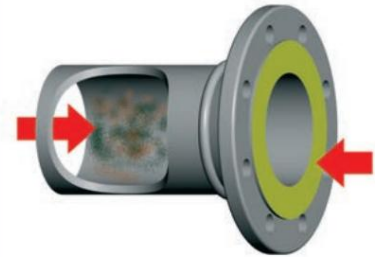
Replacement of a gate valve by a butterfly valve and a compensation sleeve.

Replacing a gate valve with a butterfly valve with compensation sleeve.



Clean the pipes and the gasket surfaces.

Clean pipes and flange facing finish.

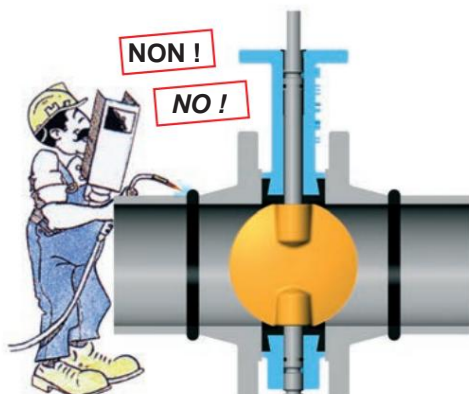


### Welding

**Never weld flanges close to mounted butterfly valves.** Risk of significant and irreparable damage to the cuff and deposits on the disc.

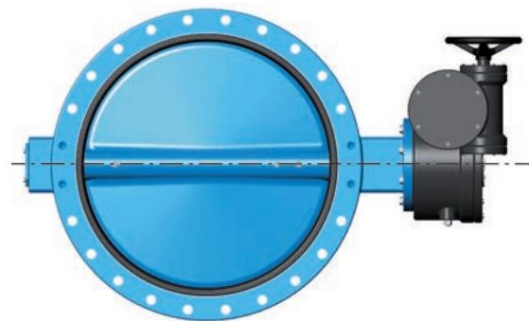
### Welding

**Never weld flanges near by the installed butterfly valve.** Risk of important and irreparable damages on the sleeve and material deposit on the disc.



Advice for fitting large diameter butterfly valves.

Advice for mounting big size butterfly valves.



Mount large diameter valves **preferably** with their axes horizontal.

Install the big size valve, **preferably**, with the stem in horizontal position.

## Replacement of a dovetail sleeve on a TECFLY double axis butterfly valve

### Notes

- For each step, the body and internal parts must be thoroughly cleaned, all types of dust (steel or other) and waste must be eliminated.
- Be careful not to damage the surface of the body.
- When driving out the pins, be careful not to damage the holes.
- If the cylindrical pins are damaged, they must be replaced by new.

### Notes

- For each step, you must clean the body and the internal pieces, and wipe out all dust (steel or else) and wastes.
- Be careful not to scratch or damage the body.
- While punching out the pins, be careful not to damage the holes.
- If the pins are damaged, you must replace them with new ones.

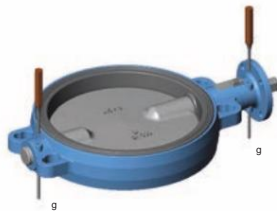
### 1. Disassembly of cylindrical pins

Place the valve horizontally, marking plate upwards. Take a steel pin punch from a

diameter a little smaller than that of the pin hole, then drive out the two cylindrical pins (g) using a hammer.

#### Pins dismantling

Place the valve horizontally with the marking plate pointing up. Using a steel pin punch of a diameter slightly smaller than the pin hole and punch out the two pins (g) using a hammer.



### 2. Removing the axles

Hold the end of the upper axle (as) in a vice, remove the upper axle by tapping on the plate with a nylon mallet (take care not to damage the body during this operation). Remove the lower axle (ai) using the support of the lower throat.

#### Stems dismantling

Maintain the upper stem (as) with the clamp and take it out by hitting on the mounting with a nylon sledgehammer (make sure not to damage the body during this step). Pull out the lower stem (ai) by using the support of the down groove.

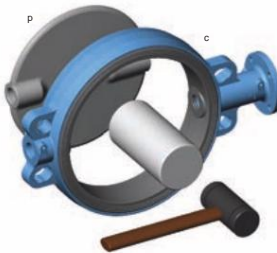


### 3. Removing the butterfly

Place the valve body (c) on its edge, then tap the butterfly (p) with a mallet and wedge flexible material (so as not to damage the butterfly).

#### Disc dismantling

Place the body (c) of the valve on the side and hit the disc (p) with a hammer and a block made of soft material not to damage the disc.



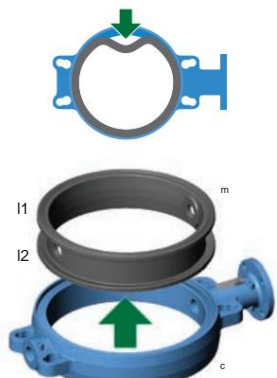
### 4. Removing the cuff

To remove the cuff (m) from the body (c), take a "tyre demon" type tool to extract the first lip (I1) from its housing, then the second (I2) (on large diameters

it is possible to do this operation manually).

#### Sleeve dismantling

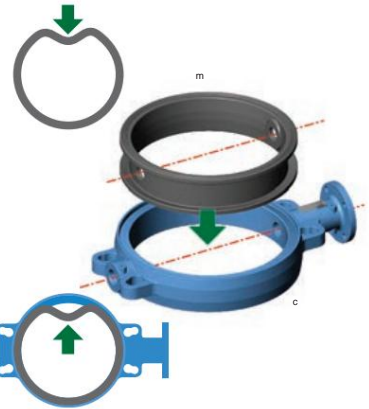
To take out the sleeve (m) from the body (c), use a tool of type "tire lever" in order to extract the first lips (I1) and then the second (I2) (on a large diameter you can perform the operation manually).



## Replacement of a dovetail sleeve on a TECFLY double stem butterfly valve

### 5. Refitting the cuff

Take a new cuff (m), align the axes of the holes of the cuff and body (c). Raise the lips of the cuff by proceeding in reverse dismantling.

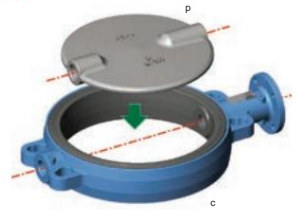


#### Sleeve reassembling

Using a new sleeve (m), align the body (c) holes with the sleeve holes. Put back the lips of the sleeve by proceeding the inverse way of the dismantling procedure.

### 6. Reassembling the butterfly

Install the butterfly (p) by aligning the holes in the butterfly and the body (c) then insert it gently into the sleeve.



#### Disc reassembling

Install the disc (p) by aligning the disc holes with the body (c) holes and then insert slowly into the sleeve.

### 7. Refitting the shafts

Position the lower shaft (ai), then fit the upper shaft (as) aligning the square couplings of the shaft and the butterfly. Then check the alignment of the pin grooves of the pins with the holes in the body.

#### Stems reassembling

Put back in the lower stem (ai), and then the upper stem (as) by aligning the square coupling of the stem and of the disc. Maintain the alignment of the pin groove of the stems with the body holes.

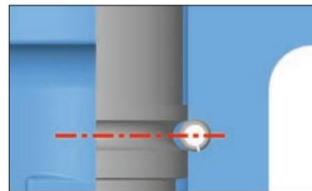


### 8. Refitting the cylindrical pins

Insert the pins (g) in their housings with a hammer.

#### Pins reassembling

Insert back the pins in their holes with a hammer.



### 9. Function check

Operate the valve to check the opening and closing.

#### Functional testing

Operate the valve to check the opening and the closing.

### 10. Checking the tightness

Check the tightness of the valve on a test bench.

#### Tightness testing

Check the tightness of the valve on a test equipment.

### Necessary Tools / Necessary Tools

- A steel hammer / Steel hammer.
- A nylon mallet / Nylon sledgehammer.
- A steel pin punch / Steel pin punch.
- A test bench / Test equipment.
- A vice / Clamp.
- A nylon wedge / Nylon block.

# Replacing a dovetail sleeve on a TECLARGE butterfly valve double axe

## Notes

- For each step, the body and internal parts must be thoroughly cleaned, all types of dust (steel or other) and waste must be eliminated.
- Be careful not to damage the surface of the body.
- When driving out the pins, be careful not to damage the holes.

## Notes

- For each step, you must clean the body and the internal pieces, and wipe out all dust (steel or else) and wastes.
- Be careful not to scratch or damage the body.
- While punching out the pins, be careful not to damage the holes.

### 1. Disassembly of cylindrical pins

Place the valve horizontally, marking plate upwards. Using a drill, make a tapping hole on the pins (g). Then tap the holes for each pin to use a slide hammer and remove

each of them.

#### Pins dismantling

Place the valve horizontally with the marking plate pointing up. Using the drill, make a threaded hole on the pins (g) in order to use the inertness extractor and to pull out each one of them.



### 2. Removing the axles

Hold the end of the upper axle (as) in a vice, remove the upper axle by tapping on the plate with a nylon mallet (take care not to damage the body during this operation). Attach a slide hammer to the hole bottom pin (ai) to remove.

#### Stems dismantling

Maintain the upper stem (as) with the clamp, take out the upper stem by hitting on the mounting with a nylon sledgehammer (make sure not to damage the body during this step). Install an inertness extractor on the threaded hole of the lower stem (ai) to pull it out.

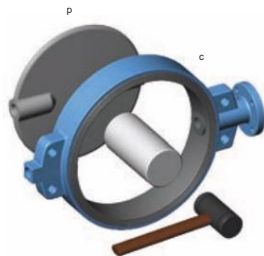


### 3. Removing the butterfly

Put the body (c) of the valve on the slice, then tap the butterfly (p) with a mallet and a wedge of flexible material (so as not to damage the butterfly).

#### Disc dismantling

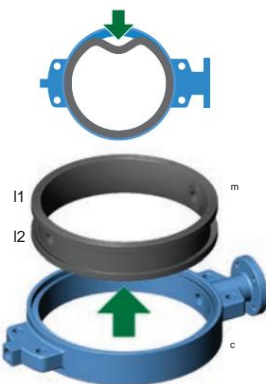
Place the body (c) of the valve on the side and then hit the disc (p) with a hammer and a block made of soft material not to damage the disc.



**4. Removing the cuff** To remove the cuff (m) from the body (c), take a "tyre lever" type tool to extract the first lip (l1) of its housing, then the second (l2).

#### Sleeve dismantling

To take out the sleeve (m) from the body (c), use a tool of type "tire lever" in order to extract the first lips (l1) and then the second (l2).



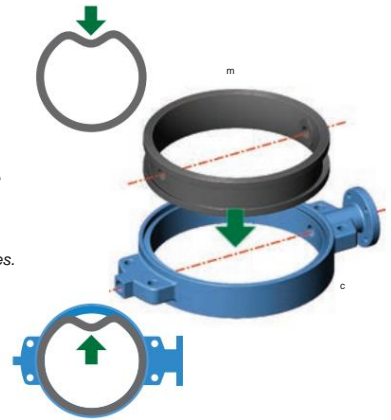
# Replacement of a dovetail sleeve on a TECLARGE double stem butterfly valve

### 5. Refitting the cuff

Take a new cuff (m), align the axes of the holes of the cuff and body (c). Raise the lips of the cuff by proceeding in the reverse order disassembly.

#### Sleeve reassembling

Using a new sleeve (m), align the body (c) holes with the sleeve holes. Put back the lips of the sleeve by proceeding the inverse way of the dismantling procedure.

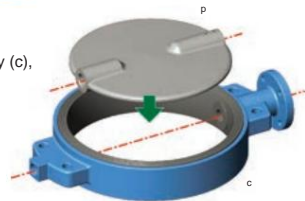


### 6. Reassembling the butterfly

Install the butterfly (p) by aligning the holes in the butterfly and the body (c), then gently insert it into the cuff.

#### Disc reassembling

Install the disc (p) by aligning the disc holes with the body (c) holes and then insert slowly into the sleeve.



### 7. Refitting the pins

Position the lower pin (ai), then fit the upper pin (as) checking the alignment of the pin holes with the butterfly holes.

#### Stems reassembling

Put back the lower stem (ai), and then the upper stem (as) by aligning the pin holes with the disc holes.



### 8. Refitting the taper pins

Insert new taper pins (g) into their housings with a hammer.

#### Pins reassembling

Insert back the new pins in their holes with a hammer.



**9. Function check** Operate the valve to check the opening and closing.

#### Functional testing

Operate the valve to check the opening and the closing.

### 10. Checking the tightness

Check the tightness of the valve on a test bench.

#### Tightness testing

Check the tightness of the valve on a test equipment.

#### Necessary Tools / Necessary Tools

- A steel hammer / Steel Hammer.
- A nylon mallet / Nylon sledgehammer.
- A steel pin punch / Steel pin punch.
- A test bench / Test equipment.
- A vice / Clamp.
- A nylon wedge / Nylon block.
- An inertia extractor / Inertness extractor.
- A drill with bits and taps / A drill.

## ASSEMBLY INSTRUCTIONS

## Replacing an aluminum reinforced sleeve on a TECLARGE butterfly valve with thru axle

**Notes**

- For each step, the body and internal parts must be thoroughly cleaned, all types of dust (steel or other) and waste must be eliminated.
- Be careful not to damage the surface of the body.
- When driving out the pins, be careful not to damage the holes.

**Notes**

- For each step, you must clean the body and the internal pieces, and wipe out all dust (steel or else) and wastes.
- Be careful not to scratch or damage the body.
- While punching out the pins, be careful not to damage the holes.

**1. Disassembly of cylindrical pins**

Place the valve horizontally, marking plate upwards. Using a drill, make a tapping hole on the pins. Then tap the holes of each pin (g) to use a slide hammer and remove each one.

**Pins dismantling**

Place the valve horizontally with the marking plate pointing up. Using the drill, make a threaded hole on the pins (g) in order to use the inertness extractor and to pull out each one of them.

**2. Removing the axles**

Hold the end of the axle (a) in a vice, then remove it by tapping on the plate with a nylon mallet (take care not to damage the body during this operation).

**Stems dismantling**

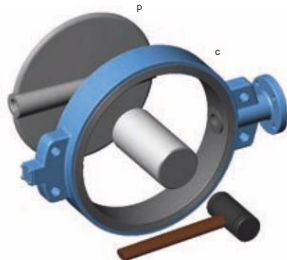
Maintain the stem (a) with the clamp, and take it out by hitting on the mounting with a nylon sledgehammer (make sure not to damage the body during this step).

**3. Removing the butterfly**

Put the body (c) of the valve on the slice, then tap the butterfly (p) with a mallet and a wedge of flexible material (so as not to damage the butterfly).

**Disc dismantling**

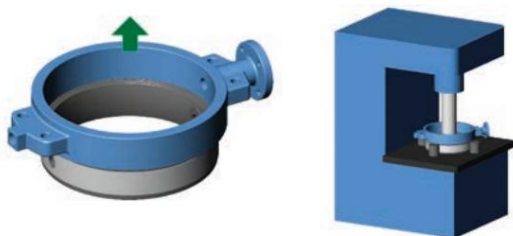
Place the body (c) of the valve on the side and hit the disc (p) with a hammer and a block made of soft material not to damage the disc.

**4. Removing the cuff**

To remove the cuff from the body, it is essential to use a press. The valve must be raised by shims of a width greater than that of the sleeve. Push the sleeve back in using a block slightly smaller than its outside diameter.

**Sleeve dismantling**

To take out the sleeve from the body, you must use the press. The valve must be elevated by blocks of a length larger than the sleeve. Push the sleeve back in using a block slightly smaller than its external diameter.



## ASSEMBLING INSTRUCTIONS

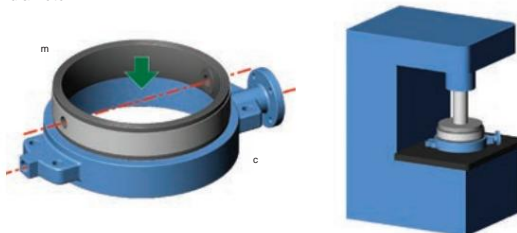
## Replacement of a aluminium reinforced sleeve on a TECLARGE butterfly valve with a through going stem

**5. Reassembling the cuff**

Place the valve directly on the press. Take a new sleeve (m), align the axes of the holes in the sleeve and the body (c). Insert the sleeve using a wedge slightly smaller than its outside diameter.

**Sleeve reassembling**

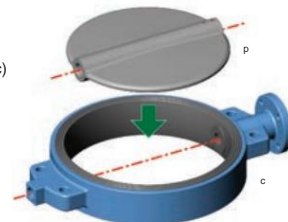
Place the valve directly on the press. Using a new sleeve (m), align the body (c) holes with the sleeve holes. Insert the sleeve using a block slightly smaller than its external diameter.

**6. Reassembling the butterfly**

Install the butterfly by aligning the holes in the butterfly (p) and the body (c) then gently insert it into the cuff.

**Disc reassembling**

Install the disc (p) holes with the body (c) holes and then insert slowly into the sleeve.

**7. Refitting the pins**

Fit the pin (a) in the body. Check the alignment of the pin holes of the axle with the butterfly holes.

**Stems reassembling**

Put back in the stem (a) in the body by aligning the pin holes of the stem with the disc holes.

**8. Refitting the taper pins**

Insert taper pins (g) new in their homes with a hammer.

**Conical pins reassembling**

Insert back the pins (g) in their holes with a hammer.

**9. Function check**

Operate the valve to check the opening and closing.

**Functional testing**

Operate the valve to check the opening and the closing.

**10. Checking the tightness**

Check the tightness of the valve on a test bench.

**Tightness testing**

Check the tightness of the valve on a test equipment.

**Necessary Tools / Necessary Tools**

- A steel hammer / *Steel Hammer*.
- A nylon mallet / *Nylon sledgehammer*.
- A steel pin punch / *Steel pin punch*.
- A test bench / *Test equipment*.
- A vice / *Clamp*.
- A nylon wedge / *Nylon block*.
- An inertia extractor / *Inertness extractor*.
- A drill with bits and taps / *A drill*.
- Hydraulic Press / *Hydraulic Press*.