

# BUTTERFLY VALVE

## AL 44-590

### Double offset

### Description

AL 44-590 is a double offset valve for mounting between flanges according to EN 1092-1, 2, DIN 2631-35 and A B16.5. The valve has a splitted shaft, a replacable liner and a mounting flange for actuators according to EN ISO 5211. Suitable as a shut off valve or control valve. The valve is suitable for liquids, gases, abrasive and aggressive media in the forest industry, process industry, chemical industry, energy production, petrochemical industry, offshore, oil storage and refineries, snow production, etc

- Blow out stem
- Leakage class according to EN 12266-I Rate A, ISO 5208. Rate A, API 598, TAB.5
- Mounting flange according to EN ISO 5211
- Max working pressure DN 50-100 - 50 bar, DN 125-100 - 40 bar, DN 250-600 - 25 bar
- Min/max temperature -60°C - +320°C (metal seat tightness class C) depending on material.
- Long neck of the body, to be isolated.
- CE/PED 2014/68/EU

### Optional

Lever, gear, pneumatic actuator type AL 79 and several other options.

### Installation / Maintenance

The valve can be mounted in horizontal and vertical lines. The valve is normally maintenance-free but should be operated at regular intervals depending on the installation. When installing a pneumatic actuator, it is a requirement that the actuator has the possibility of adjustment in both open and closed positions. We recommend AL 79. See separate manual for detailed instructions.

### Kv value

| DN  | Kv    |
|-----|-------|
| 50  | 87    |
| 65  | 148   |
| 80  | 312   |
| 100 | 456   |
| 125 | 750   |
| 150 | 1125  |
| 200 | 1950  |
| 250 | 3100  |
| 300 | 4510  |
| 350 | 6120  |
| 400 | 8605  |
| 450 | 9419  |
| 500 | 11674 |
| 600 | 16914 |

### Torque at maximum working pressure - Nm

#### Seat RTFE

| DN     | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350  | 400  | 450  | 500  | 600  |
|--------|----|----|----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| 16 bar | 19 | 35 | 50 | 77  | 110 | 145 | 278 | 567 | 650 | 1378 | 2248 | 2569 | 3090 | 4300 |
| 25 bar | 22 | 45 | 58 | 79  | 120 | 185 | 366 | 732 | 900 | 1900 | 3483 | 3925 | 5340 | 6250 |
| 40 bar | 32 | 53 | 62 | 90  | 150 | 242 | 485 | -   | -   | -    | -    | -    | -    | -    |
| 50 bar | 35 | 60 | 65 | 105 | -   | -   | -   | -   | -   | -    | -    | -    | -    | -    |

Torque values above without safety factor.

#### Seat Metal/Metal and Fire Safe

| DN     | 50 | 65 | 80  | 100 | 125 |
|--------|----|----|-----|-----|-----|
| 16 bar | 50 | 70 | 100 | 150 | 220 |
| 25 bar | 50 | 70 | 100 | 150 | 220 |

Torque values above without safety factor.



### Pressure class

| Pressure class | Standard  | Optional  |
|----------------|-----------|-----------|
| PN 6           | DN 80     | DN 50-600 |
| PN 10          | DN 50-600 | -         |
| PN 16          | DN 50-600 | -         |
| PN 25          | DN 50-600 | -         |
| PN 40          | DN 50-450 | -         |

For lug connection, please specify at order.

### Ordering key

Ordering example: AL 44-590 - 5 - 5 - 9 - 0 - B - DN 100

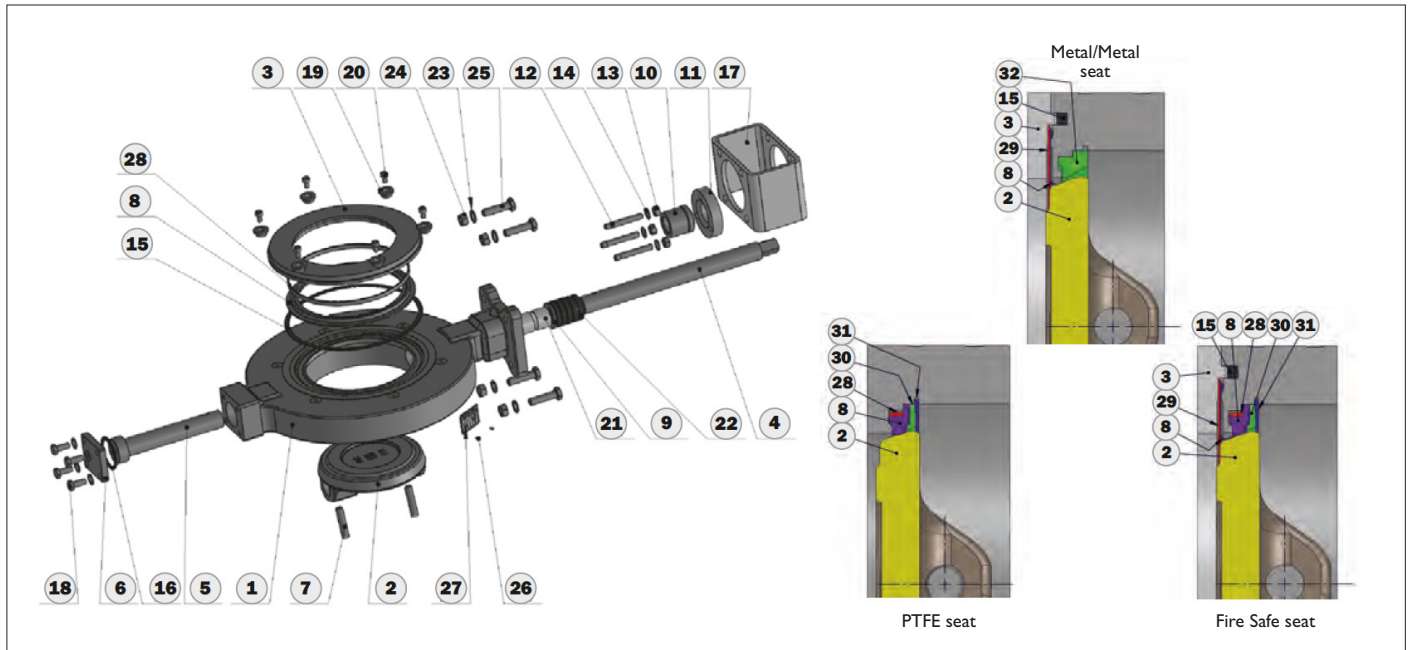
| Type      | Model  | Body material  | Seat material   | Disc material   | Connection           |
|-----------|--------|--|---|---|----------------------|
| AL 44-590 | 5 = 2E | 6 - Low carbon steel I.1156 (A352 LCC)<br>5 - Carbon steel I.0625 (A216 WCB)<br>4 - Stainless steel I.4408 (A351 CF8M) | 9 - R-PTFE (PTFE + 25% glass fibre)<br>8 - FIRE SAFE (R-PTFE + INCONEL)<br>7 - INCONEL 718 (2.4668) | 0 - Stainless steel I.4408 (CF8M)<br>- Stainless steel I.4409 (ASTM A351 CF3M) *<br>- Stainless steel I.4027 (ASTM CA-40) *<br><br>* Stated in clear text | B = Wafer<br>T = Lug |

# BUTTERFLY VALVE

## AL 44-590

Double offset

### Part-/Material specification



| No | Part          | Material  |
|----|---------------|---|
| 1  | Body          | Low carbon steel I.1156 (A352 LCC)<br>Carbon steel I.0625 (A216 WCB)<br>Stainless steel I.4408 (A351 CF8M)  |
| 2  | Disc          | DN50-125: Stainless steel I.4409 (ASTM A351 CF3M)<br>DN150-600:<br>55xx: Stainless steel I.4027 (ASTM CA-40)<br>54xx, 56xx: Stainless steel I.4408 (ASTM A351 CF8M)   |
| 3  | Ring flange   | Carbon steel I.0425<br>Stainless steel I.4404 (AISI 316L)   |
| 4  | Shaft         | 54XX, 56XX: Stainless steel I.4462<br>55XX: Stainless steel I.4021 (AISI 420)   |
| 5  | Pivot         | DN50-125: Stainless steel I.4404 (AISI 316L)<br>DN150-600: Stainless steel I.4021 (AISI 420)/I.4462   |
| 6  | Cover         | DN50-125: -<br>DN150-600: Carbon steel I.4025 /<br>Stainless steel I.4401 (AISI 316)  |
| 7  | Pin           | DN50-125: -<br>54XX, 56XX DN150-600: Stainless steel I.4462<br>55XX DN150-600: Stainless steel I.4021 (AISI 420)  |
| 8  | Seat          | XX70 DN50-125: INCONEL 718 2.4668<br>XX80: FIRE SAFE (R-PTFE + INCONEL)<br>XX90: R-PTFE (PTFE reinforced by 25 % glass fibre)   |
| 9  | Washer        | Stainless steel I.4404 (AISI 316L)  |
| 10 | Packing gland | DN50-125: Stainless steel I.4401 (AISI 316)<br>54XX, 55XX DN150-600: Stainless steel I.4401 (AISI 316)<br>56XX DN150-300: Stainless steel I.4401 (AISI 316)<br>56XX DN350-600: Stainless steel I.4404 (AISI 316L) |
| 11 | Gland flange  | 54XX, 55XX, 56XX DN50-125: Stainless steel I.4308 (CF8)<br>54XX, 55XX, 56XX DN150-600: Stainless steel I.4301 (AISI 304)  |
| 12 | Bolt          | Stainless steel A4  |

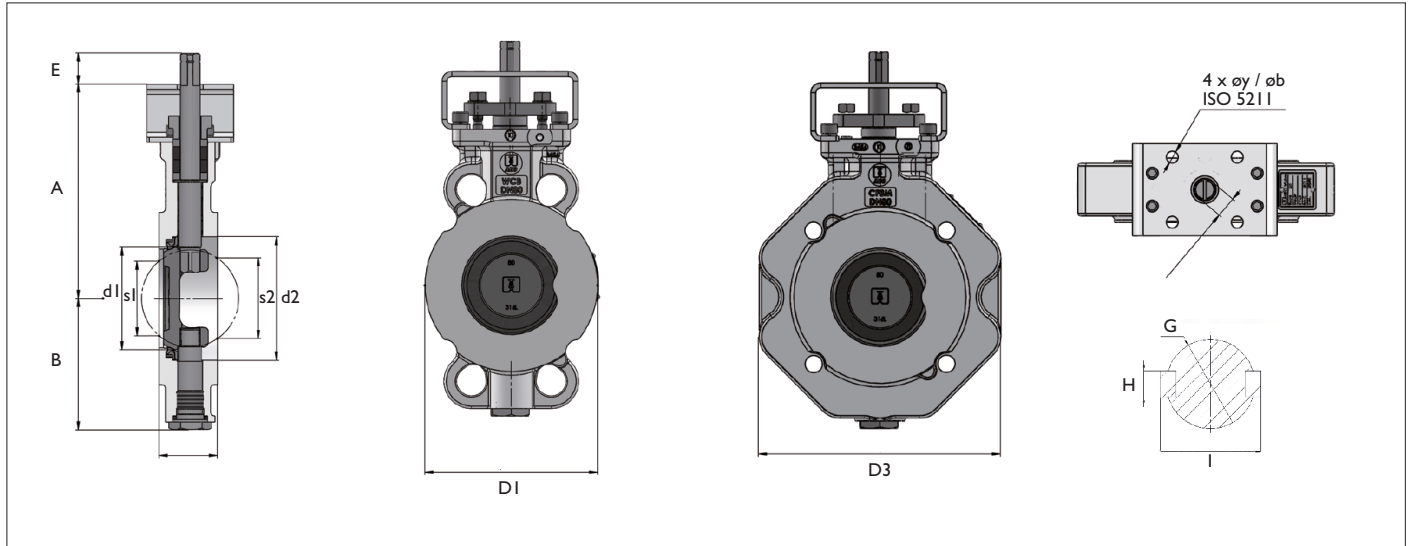
| No | Part             | Material   |
|----|------------------|--|
| 13 | Nut              | Stainless steel A4   |
| 14 | Washer           | Stainless steel A4   |
| 15 | Flange sealing   | Graphite min. 98%  |
| 16 | Seal             | Graphite   |
| 17 | Bracket          | DN50-125, 500, 600: Carbon steel I.0553<br>DN150-400: Carbon steel I.0576          |
| 18 | Bolt             | Stainless steel A4   |
| 19 | Retaining sleeve | Stainless steel I.4404 (AISI 316L)   |
| 20 | Bolt             | Stainless steel A4   |
| 21 | Bushing          | Xx70, Xx80: Stainless steel I.4404 (AISI 316L)<br>+ nickel plated<br>XX90: TP IGUS |
| 22 | Packing          | Graphite min. 98%  |
| 23 | Washer           | Stainless steel A4   |
| 24 | Nut              | Stainless steel A4   |
| 25 | Bolt             | Stainless steel A4   |
| 26 | Rivet            | Stainless steel A4   |
| 27 | Label            | Stainless steel  |
| 28 | Seat O-ring      | Stainless steel I.4404 (AISI 316L) - only for "RTFE" and "FIRE SAFE" version       |
| 29 | Seal             | INCONEL - only for "METAL-METAL" and "FIRE SAFE" version                           |
| 30 | Support ring     | Stainless steel I.4404 (AISI 316L)   |
| 31 | Retaining ring   | Stainless steel I.4401   |
| 32 | Support ring     | Stainless steel I.4404 (AISI 316L)   |

# BUTTERFLY VALVE

## AL 44-590

Double offset

### Dimensions



| DN  | d1  | d2  | A   | B   | C   | D1  | D3  | s1    | s2  | E   | G  | ISO | y    | b   | Weight kg |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-------|-----|-----|----|-----|------|-----|-----------|------|
|     |     |     |     |     |     |     |     |       |     |     |    |     |      |     | Wafer     | Lug  |
| 50  | 49  | 68  | 163 | 93  | 44  | 103 | 154 | 12    | 37  | 25  | 14 | F07 | 9    | 70  | 5,1       | 7,3  |
| 65  | 65  | 82  | 170 | 100 | 47  | 123 | 178 | 39    | 55  | 25  | 14 | F07 | 9    | 70  | 5,8       | 9,0  |
| 80  | 81  | 100 | 174 | 106 | 47  | 140 | 196 | 65    | 72  | 25  | 14 | F07 | 9    | 70  | 6,8       | 10,1 |
| 100 | 100 | 123 | 206 | 123 | 53  | 163 | 225 | 85    | 91  | 25  | 14 | F07 | 9    | 70  | 8,5       | 12,2 |
| 125 | 123 | 146 | 215 | 137 | 57  | 193 | 260 | 113   | 110 | 25  | 14 | F07 | 9    | 70  | 11,8      | 16,5 |
| 150 | 146 | 155 | 307 | 214 | 57  | 252 | 318 | 136   | 143 | 25  | 17 | F10 | 11   | 102 | 21        | 28   |
| 200 | 194 | 204 | 339 | 246 | 61  | 307 | 381 | 185   | 193 | 25  | 17 | F10 | 11   | 102 | 29        | 41   |
| 250 | 240 | 259 | 395 | 275 | 69  | 349 | 450 | 224   | 236 | 31  | 22 | F12 | 13   | 125 | 46        | 70   |
| 300 | 287 | 309 | 460 | 313 | 79  | 393 | 521 | 270   | 284 | 31  | 27 | F14 | 17   | 140 | 67        | 105  |
| 350 | 313 | 342 | 508 | 355 | 92  | 448 | 577 | 300   | 308 | 45  | 27 | F16 | 22   | 165 | 91        | 140  |
| 400 | 364 | 405 | 556 | 402 | 103 | 542 | 657 | 342   | 360 | 58  | 36 | F16 | 22   | 165 | 132       | 211  |
| 450 | 420 | 450 | 567 | 395 | 114 | 565 | -   | 400,5 | 419 | 80  | 1) | F16 | 22   | 165 | 165       | -    |
| 500 | 452 | 500 | 625 | 431 | 127 | 593 | 707 | 434   | 454 | 100 | 2) | F25 | 17,5 | 254 | 241       | 282  |
| 600 | 547 | 600 | 698 | 491 | 154 | 695 | 830 | 524   | 546 | 110 | 3) | F25 | 17,5 | 254 | 367       | 478  |

1) Ø55 / 16 / 62,6 2) Ø64 / 18 / 72,4 3) Ø75 / 20 / 84,2

### Lever (optional)

| DN     | A   | B  | Weight |
|--------|-----|----|--------|
| 50-100 | 270 | 75 | 1,3    |
| 125    | 270 | 80 | 1,3    |
| 150 *  | 362 | 90 | 1,4    |

\* Only PN 16

