# PTFE-LINED BUTTERFLY VALVE T 211-A

Fully PTFE-lined wafer type valve for corrosive and aggressive media. The patented shaft seal design ensures reliability even with high-corrosive applications.

## TECHNICAL DATA

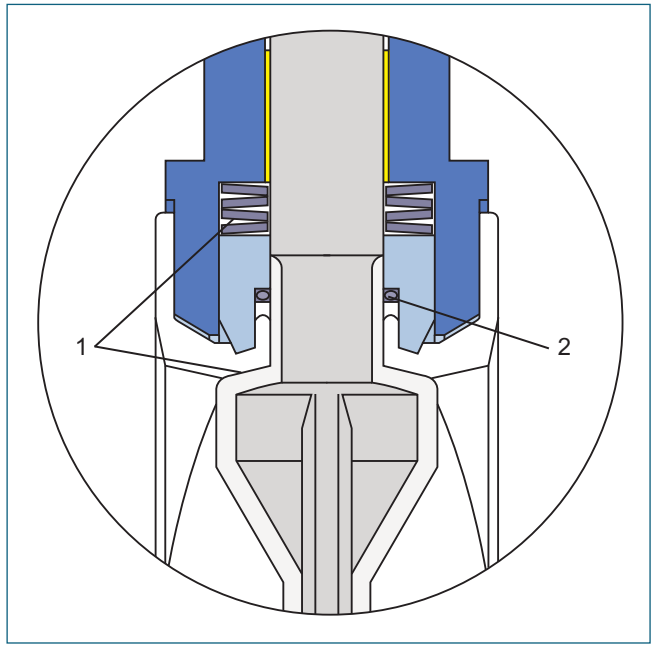
| | |
|---|---|
| Nominal diameter: | DN 50 – DN 300 |
| Face-to-face: | EN 558 Series 20 (DIN 3202 T3 K1)<br>ISO 5752 Series 20<br>API 609 Table1<br>BS 5155, Tab. 6 Series 4<br>NF E 29-305.1 |
| Flange accommodation: | DIN 2501 PN 10/16<br>ANSI B 16.5, Class 150<br>MSS SP44 Class 150<br>AWWA C 207<br>AS 2129 Table D and E<br>BS 10 Table D and E<br>JIS B 2211-5 K<br>JIS B 2212-10K |
| Flange surface design: | DIN 2526 Design A-E, ANSI B 16.5 RF, FF |
| Top flange: | EN ISO 5211<br>NF E 29-402 |
| Marking: | DIN EN 19 |
| Tightness check: | DIN 3230 T3 BO (Leakage Rate 1)<br>ISO 5208, Category 3<br>API 598 Table 5 and<br>ANSI B 16-104, Class VI |
| Temperatur range: | –40 °C to +200 °C<br>(depending on operation pressure) |
| Operating pressure: | max. 10 bar, (16 bar for spec. version) |
| Differential pressure: | max. Δp 10 bar, (16 bar for spec. version) |
| Vacuum: | up to 1 mbar absolute<br>(with silicon elastomer inserts)<br>from –10 °C to +160 °C |

## FEATURES

- PTFE-lined butterfly valve for chemically toxic and highly corrosive media
- Environmental protection via EBRO-Safety seal
- Splitted body design
- Isolation height according to plant prescription
- Can be installed in any desired position
- Maintenance-free
- Can be disassembled, material-specific recycling possible
- Material conform to FDA

## GENERAL APPLICATIONS

- Chemically highly corrosive and toxic media
- Purification plants
- Pharmaceutical Industry
- Adhesives, Paper Industry, Fuel Transport
- Paint manufacture and processing
- Food Industry
- Transport of hazardous materials
- Wet chloric gas
- Conditioning of materials, e.g. galvanizing and pickling
- Processing of ore
- Fuel transport and storage




Safety seal at both shaft ends in accordance with the EBRO Twin Seal principle:

1 Primary sealing by means of a Belleville spring washer, transmitting prestress on the spherical segment area.

2 Secondary sealing of the shaft by means of PTFE-Chevron and O-Ring.

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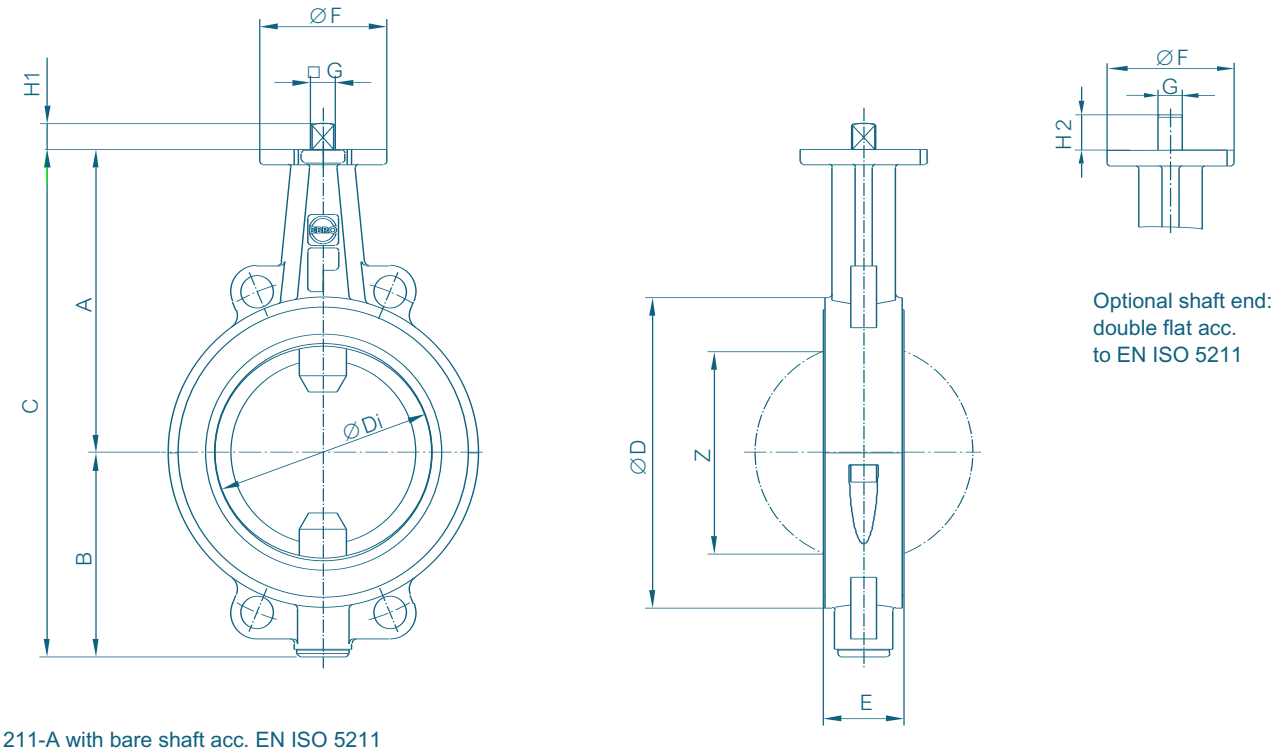



Optional shaft end:
double flat acc.
to EN ISO 5211

T 211-A with bare shaft acc. EN ISO 5211

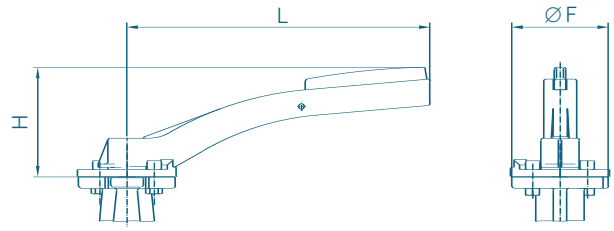
| DN [mm] | Size [in] | Dimensions [mm] | | | | | | | | | | | | Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | Di | E | F | Flange | G | H1 | H2 | Z | |
| **50** | **2** | 135 | 80 | 215 | 112 | 60,8 | 43 | 54 | F04 | 11 | 12 | 19 | 41 | 2,8 |
| **65** | **2½** | 150 | 82 | 232 | 120 | 60,8 | 46 | 54 | F04 | 11 | 12 | 19 | 41 | 3,4 |
| **80** | **3** | 157 | 108 | 265 | 138 | 79,5 | 46 | 65 | F05 | 14 | 16 | 25 | 66 | 4,5 |
| **100** | **4** | 180 | 118 | 298 | 160 | 99,0 | 52 | 65 | F05 | 14 | 16 | 25 | 85 | 5,9 |
| **125** | **5** | 195 | 130 | 325 | 190 | 124,5 | 56 | 90 | F07 | 17 | 19 | 25 | 112 | 8,1 |
| **150** | **6** | 210 | 142 | 352 | 215 | 150,5 | 56 | 90 | F07 | 17 | 19 | 30 | 141 | 9,5 |
| **200** | **8** | 240 | 169 | 409 | 269 | 195,5 | 60 | 90 | F07 | 17 | 19 | 30 | 187 | 15 |
| **250** | **10** | 275 | 217 | 492 | 324 | 247,5 | 68 | 125 | F10 | 22 | 24 | 39 | 239 | 24 |
| **300** | **12** | 300 | 240 | 540 | 374 | 292,5 | 78 | 125 | F10 | 22 | 24 | 39 | 283 | 34 |

Subject to change without notice.

# ACTUATORS T 211-A

## HAND LEVER

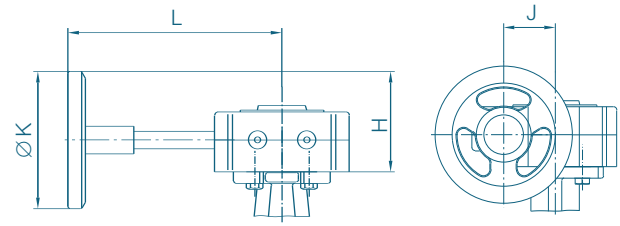
| DN [mm] | Size [in] | Hand Lever | F | H | L | Weight [kg] |
|---|---|---|---|---|---|---|
| 50-65 | 2-2½ | Size II | 54 | 80 | 195 | 0,15 |
| 80-100 | 3-4 | Size III | 65 | 100 | 276 | 0,5 |
| 125 | 5 | Size III | 90 | 100 | 276 | 0,5 |




## WORM GEAR

| DN [mm] | Size [in] | Gear | H | J | K | L | Weight [kg] |
|---|---|---|---|---|---|---|---|
| 50-100 | 2-4 | Size II | 89 | 39 | 125 | 159 | 1,4 |
| 125-150 | 5-6 | Size III | 129 | 47 | 200 | 202 | 2,3 |
| 200-250 | 8-10 | Size IV | 129 | 60 | 200 | 252 | 2,8 |
| 300 | 12 | Size V | 158 | 76 | 250 | 280 | 6,3 |

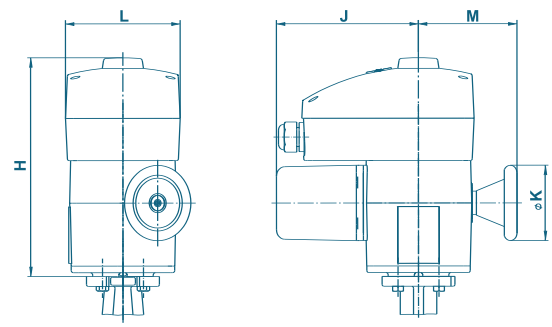
The dimensioning of actuators refers to an operating pressure of 10 bar.




## ELECTRIC ACTUATOR

| DN [mm] | Size [in] | Actuator | H | J | K | L | M | Weight [kg] |
|---|---|---|---|---|---|---|---|---|
| 50-80 | 2-3 | E 65 | 233 | 172 | 80 | 139 | 119 | 7,0 |
| 100-250 | 4-10 | E 110 | 251 | 245 | 125 | 139 | 134 | 14,0 |
| 300 | 12 | E 160 | 239 | 279 | 198 | 139 | 157 | 25,0 |

The dimensioning of actuators refers to an operating pressure of 10 bar.

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## TORQUE

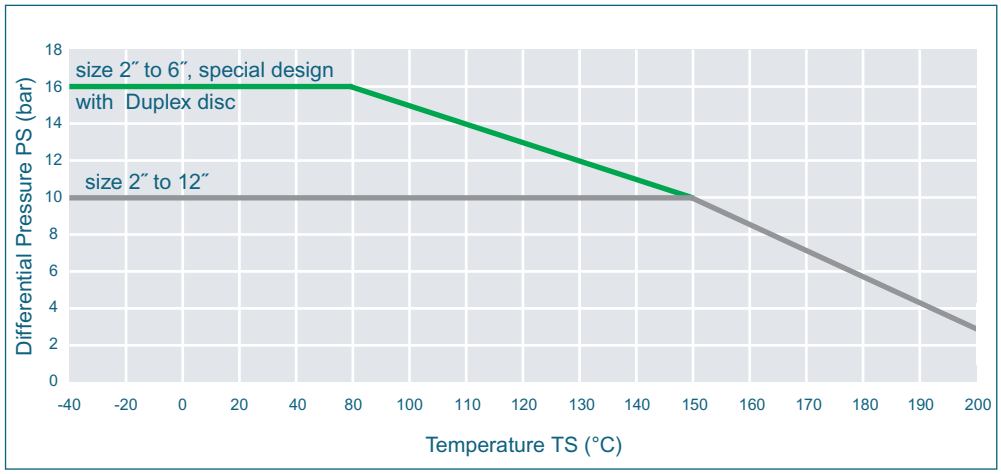
- The torque values specified (MD) are based on dry media and are measured with air at a temperature of 20 °C.
- The values specified are based on the initial breakaway torque (disc disengages from seat, torque then drops).
- Dynamic torque specification available upon request.

Regarding the dimensioning of actuators, please contact our engineers.

| DN [mm] | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|---|
| Size [in] | 2 | 2½ | 3 | 4 | 5 | 6 | 8 | 10 | 12 |
| MD (Nm) | 40 | 40 | 70 | 95 | 130 | 170 | 230 | 350 | 480 |

## PRESSURE/TEMPERATURE DIAGRAM

for valves with silicone elastomer inserts




Vacuum service to 1 mbar, from –10 °C up to 160 °C

## $K_V$-VALUES

- The $K_V$-value ($m^3$ per hour) is the flow of water at a temperature of 5 °C to 30 °C ( 41 °F to 86 °F) at Δp of 1 bar.
- The $K_V$-values specified are based on tests carried out by the Delfter Hydraulics Laboratories, the Netherlands.
- Permissible velocity of flow Vmax 4,5 m/s for liquids and Vmax 70 m/s for gases.
- The throttle function is linear at an angle 30° to 70°.
- Avoid cavitation!

For further values, please contact our engineers.

| DN [mm] | Size [in] | Opening angle α° 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|---|---|---|---|---|---|---|---|---|---|
| 1) $K_V$-values metal disc | | | | | | | | | |
| 50 | 2 | 1 | 8 | 24 | 50 | 70 | 100 | 140 | 210 |
| 65 | 2½ | 1 | 8 | 24 | 50 | 70 | 100 | 140 | 210 |
| 80 | 3 | 1,2 | 15 | 44 | 95 | 124 | 180 | 300 | 520 |
| 100 | 4 | 8 | 25 | 60 | 170 | 210 | 280 | 540 | 980 |
| 125 | 5 | 15 | 52 | 125 | 250 | 350 | 520 | 840 | 1 400 |
| 150 | 6 | 35 | 95 | 190 | 350 | 460 | 850 | 1 300 | 2 300 |
| 200 | 8 | 69 | 253 | 457 | 729 | 1 110 | 1 783 | 2 570 | 3 020 |
| 250 | 10 | 120 | 380 | 690 | 1 200 | 1 680 | 2 650 | 4 500 | 6 600 |
| 300 | 12 | 165 | 504 | 937 | 1 512 | 2 275 | 3 795 | 6 810 | 12 800 |
| 2) $K_V$-values PTFE-disc | | | | | | | | | |
| 50 | 2 | 1,5 | 12 | 28 | 52 | 70 | 96 | 110 | 150 |
| 65 | 2½ | 1,5 | 12 | 28 | 52 | 70 | 96 | 110 | 150 |
| 80 | 3 | 2,5 | 20 | 48 | 88 | 118 | 160 | 200 | 250 |
| 100 | 4 | 12 | 32 | 68 | 170 | 210 | 260 | 500 | 780 |
| 125 | 5 | 18 | 60 | 135 | 260 | 380 | 480 | 790 | 1 250 |
| 150 | 6 | 45 | 105 | 205 | 370 | 490 | 720 | 1 250 | 2 200 |
| 200 | 8 | 88 | 297 | 520 | 695 | 1 130 | 1 700 | 2 500 | 2 700 |
| 250 | 10 | 148 | 430 | 695 | 1 250 | 1 800 | 2 520 | 4 350 | 5 400 |
| 300 | 12 | 263 | 557 | 960 | 1 560 | 2 450 | 4 300 | 6 700 | 9 400 |