

XOMOX[®]

brands you trust.



XLD - Lined Butterfly Valve Series

CRANE

ChemPharma Flow Solutions

www.cranechempharma.com

PERFORMANCE We listened to our most demanding critics:
Our customers. Here's our response.

ANSI Class 150/PN10 valve design!



• **Lower torque ratings**

enable the use of smaller, less expensive actuators

• **The seal to atmosphere**

is assured by using the triple FKM O-rings around the base of the shaft

• **A wide sealing face**

prevents leakage at the flange

• **Improved disc design**

assures better stability

• **Temperature Range**

0° to 400° F
233 K to 453 K
-20°C to 200°C

• **Pressure Range**

Suitable for vacuum service
(0.02 psi/1,33 hPa)
Shut-off Pressure max. 150 psi/10 bar

• **Direct mount actuation**

ensures robust performance while providing compact system design. The large standard mounting pad conforms to ISO 5211.

• **Both the body and the shaft lining**

continue past the FKM-ring stem sealing components. The shaft and the seal components are protected from the flow media .

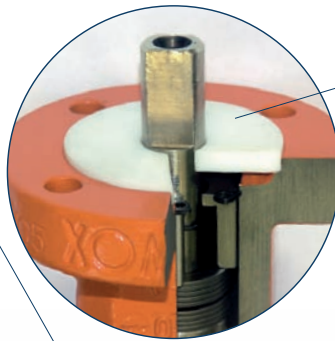
• **Better atmospheric corrosion resistance**

through high-end surface coating.

SAFETY You benefit... when experience meets design

Belleveille disc springs

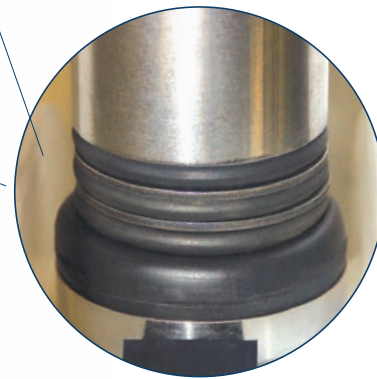
provide live loading to ensure a tight top seal.



The revolutionary PTFE atmosphere seal protects the top seal components and the shaft from atmospheric corrosion.

Triple FKM-ring backup-seals

provide a second, third and fourth line of protection against atmospheric leakage.



Blow-out proof design

Stem and disc are one simple part combined with the anti-blow-out system. (API 609 compliant.)



The extended body lining

assures optimum protection of the FKM-rings from corrosive media. These components are located behind the body liner extension. They are isolated from the media.

The in-line resilient seal assembly

assures optimum pressure distribution of the body liner to the disc assembly, providing tight sealing under all operating conditions. The wider seal-band provides a broader sealing area.

Fully lined bottom shaft

assures optimum corrosion resistance and eliminates a potential leakage path.

Product naming

| XLD Series | Body | Flange |
|------------|-------|--------|
| XLD11 | WAFER | ANSI |
| XLD12 | | DIN |
| XLD13 | | JIS |
| XLD21 | LUG | ANSI |
| XLD22 | | DIN |
| XLD23 | | JIS |

DIMENSIONS Butterfly Valve XLD

All dimensions in inches

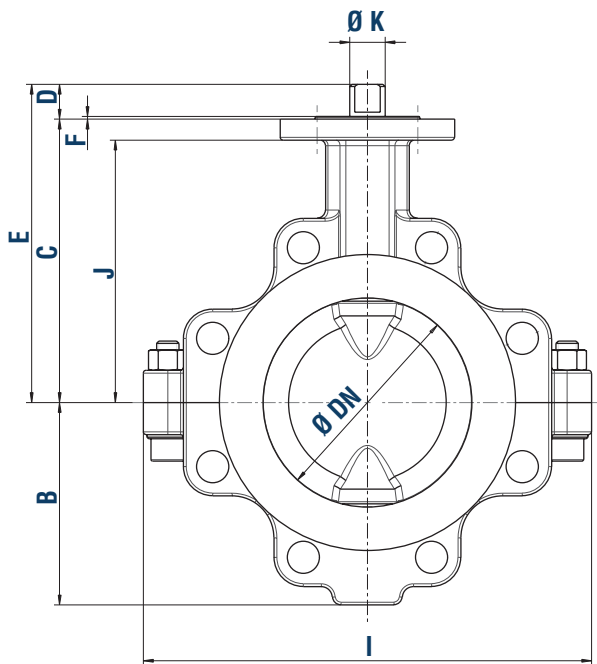
| Valve Size | A | B | C | D | E | F | ØG | I | J | ØK | L | M | ØP | ØR | SW | ISO 5211 |
|------------|------|-------|-------|------|-------|------|-------|-------|-------|------|------|-----|------|------|------|----------|
| 2" | 1.69 | 3.19 | 5.24 | 1.18 | 6.42 | 0.12 | 3.94 | 6.61 | 4.69 | 0.63 | 0.98 | M6 | 2.76 | 0.35 | 0.44 | F07 |
| 3" | 1.81 | 4.02 | 6.30 | 0.87 | 7.17 | 0.12 | 5.00 | 8.78 | 5.43 | 0.63 | 0.67 | M6 | 2.76 | 0.35 | 0.44 | F07 |
| 4" | 2.05 | 4.72 | 6.69 | 1.02 | 7.72 | 0.12 | 6.02 | 10.51 | 6.06 | 0.63 | 0.83 | M6 | 2.76 | 0.35 | 0.44 | F07 |
| 5" | 2.20 | 5.31 | 7.28 | 1.14 | 8.43 | 0.12 | 7.24 | 11.61 | 6.54 | 0.63 | 0.94 | M6 | 2.76 | 0.35 | 0.44 | F07 |
| 6" | 2.20 | 5.71 | 7.99 | 0.98 | 8.98 | 0.12 | 8.35 | 12.64 | 7.09 | 1.00 | 0.79 | M8 | 4.02 | 0.43 | 0.69 | F10 |
| 8" | 2.36 | 7.48 | 9.06 | 1.02 | 10.08 | 0.12 | 10.43 | 15.51 | 8.27 | 1.25 | 0.83 | M8 | 4.02 | 0.43 | 0.81 | F10 |
| 10" | 2.68 | 9.17 | 10.16 | 1.02 | 11.18 | 0.12 | 12.76 | 18.19 | 9.09 | 1.25 | 0.83 | M8 | 4.02 | 0.43 | 0.81 | F10 |
| 12" | 3.07 | 10.16 | 11.34 | 1.18 | 12.52 | 0.12 | 14.72 | 21.73 | 10.47 | 1.25 | 0.98 | M8 | 4.92 | 0.55 | 0.81 | F12 |
| 14" | 3.62 | 13.90 | 16.42 | 1.50 | 17.91 | 0.12 | 17.52 | 22.68 | 16.69 | 1.42 | 1.38 | M8 | 5.51 | 0.71 | 1.06 | F14 |
| 16" | 4.02 | 15.51 | 17.80 | 1.50 | 19.29 | 0.12 | 19.69 | 25.20 | 19.49 | 1.42 | 1.38 | M8 | 5.51 | 0.71 | 1.06 | F14 |
| 18" | 4.49 | 16.14 | 18.50 | 2.36 | 20.87 | 0.20 | 22.05 | 26.61 | 20.98 | 1.89 | 2.17 | M12 | 6.50 | 0.87 | 1.42 | F16 |
| 20" | 5.00 | 18.11 | 19.68 | 2.36 | 22.05 | 0.20 | 24.41 | 29.13 | 23.27 | 1.89 | 2.17 | M12 | 6.50 | 0.87 | 1.42 | F16 |
| 24" | 6.06 | 20.47 | 22.05 | 2.56 | 24.61 | 0.20 | 28.03 | 34.65 | 27.24 | 2.36 | 2.44 | M12 | 6.50 | 0.87 | 1.81 | F16 |

All dimensions in mm

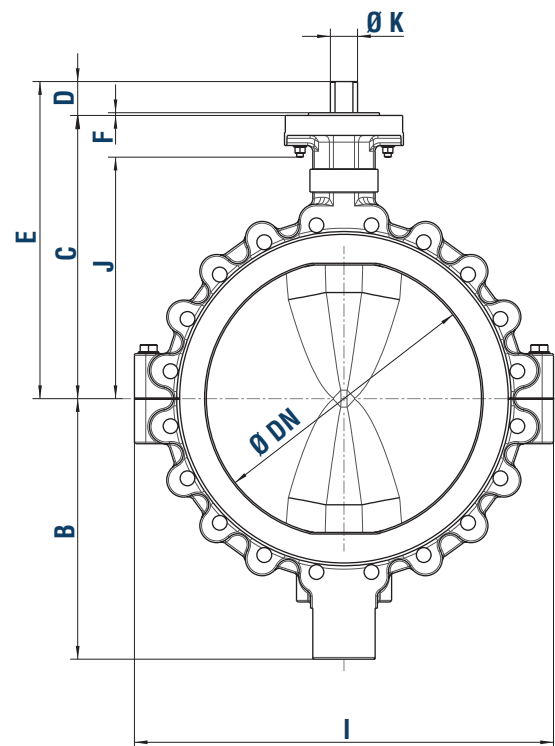
| Valve Size | A | B | C | D | E | F | ØG | I | J | ØK | L | M | ØP | ØR | SW | ISO 5211 |
|------------|-----|-----|-----|----|-----|---|-----|-----|-----|------|----|-----|-----|----|------|----------|
| DN 50 | 43 | 81 | 133 | 30 | 163 | 3 | 100 | 168 | 119 | 15.9 | 25 | M6 | 70 | 9 | 11.1 | F07 |
| DN 65 | 46 | 87 | 146 | 30 | 176 | 3 | 128 | 175 | 135 | 15.9 | 25 | M6 | 70 | 9 | 11.1 | F07 |
| DN 80 | 46 | 102 | 160 | 22 | 182 | 3 | 127 | 223 | 138 | 15.9 | 17 | M6 | 70 | 9 | 11.1 | F07 |
| DN 100 | 52 | 120 | 170 | 26 | 196 | 3 | 153 | 267 | 154 | 15.9 | 21 | M6 | 70 | 9 | 11.1 | F07 |
| DN 125 | 56 | 135 | 185 | 29 | 214 | 3 | 184 | 295 | 166 | 15.9 | 24 | M6 | 70 | 9 | 11.1 | F07 |
| DN 150 | 56 | 145 | 203 | 25 | 228 | 3 | 212 | 321 | 180 | 25.4 | 20 | M8 | 102 | 11 | 17.5 | F10 |
| DN 200 | 60 | 190 | 230 | 26 | 256 | 3 | 265 | 394 | 210 | 31.8 | 21 | M8 | 102 | 11 | 20.6 | F10 |
| DN 250 | 68 | 233 | 258 | 26 | 284 | 3 | 324 | 462 | 231 | 31.8 | 21 | M8 | 102 | 11 | 20.6 | F10 |
| DN 300 | 78 | 258 | 288 | 30 | 318 | 3 | 374 | 552 | 266 | 31.8 | 25 | M8 | 125 | 14 | 20.6 | F12 |
| DN 350 | 92 | 353 | 417 | 38 | 455 | 3 | 445 | 576 | 424 | 36 | 35 | M8 | 140 | 18 | 27 | F14 |
| DN 400 | 102 | 394 | 452 | 38 | 490 | 3 | 500 | 640 | 495 | 36 | 35 | M8 | 140 | 18 | 27 | F14 |
| DN 450 | 114 | 410 | 470 | 60 | 530 | 5 | 560 | 676 | 533 | 48 | 55 | M12 | 165 | 22 | 36 | F16 |
| DN 500 | 127 | 460 | 500 | 60 | 560 | 5 | 620 | 740 | 591 | 48 | 55 | M12 | 165 | 22 | 36 | F16 |
| DN 600 | 154 | 520 | 560 | 65 | 625 | 5 | 712 | 880 | 692 | 60 | 62 | M12 | 165 | 22 | 46 | F16 |

DIMENSIONS Butterfly Valve XLD

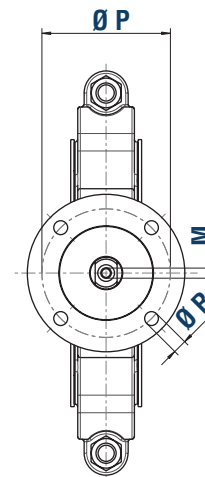
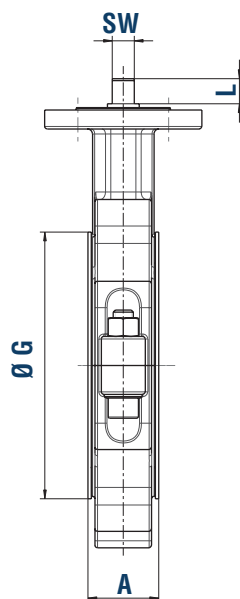
DN 50-300
2" - 12"



DN 350-600
14" - 24"



DN 50-600
2" - 24"



TECHNICAL DATA Flange bolt dimensions

Drilling DIN PN 10 (all dimensions in mm)

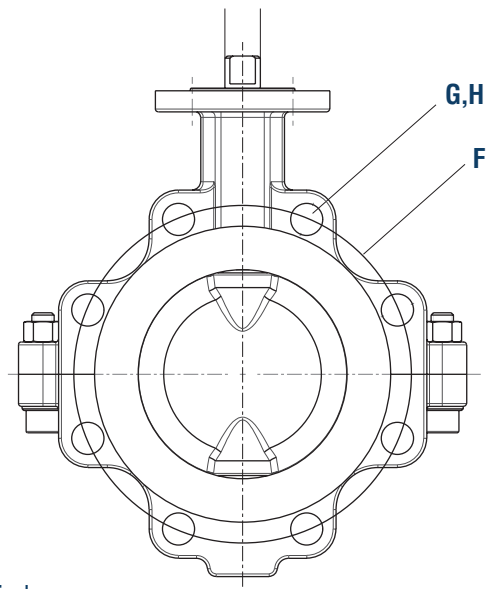
| Valve Size | XLD 12 Wafer Style | | | XLD 22 Lug Style | | |
|------------|--------------------|------|-------|------------------|------|--------|
| | F | G | H | F | G | H |
| DN 50 | 125 | 4 | 18 | 125 | 4 | M16 |
| DN 65 | 145 | 4 | 18 | 145 | 4 | M16 |
| DN 80 | 160 | 8 | 18 | 160 | 8 | M16 |
| DN 100 | 180 | 8 | 18 | 180 | 8 | M16 |
| DN 125 | 210 | 8 | 18 | 210 | 8 | M16 |
| DN 150 | 240 | 8 | 22 | 240 | 8 | M20 |
| DN 200 | 295 | 8/12 | 22 | 295 | 8/12 | M20 |
| DN 250 | 350/355 | 12 | 22/26 | 350/355 | 12 | M20/24 |
| DN 300 | 400/410 | 12 | 22/26 | 400/410 | 12 | M20/24 |
| DN 350 | 460 | 16 | 22 | 460 | 16 | M20 |
| DN 400 | 515 | 16 | 26 | 515 | 16 | M24 |
| DN 450 | 565 | 20 | 26 | 565 | 20 | M24 |
| DN 500 | 620 | 20 | 26 | 620 | 20 | M24 |
| DN 600 | 725 | 20 | 29 | 725 | 20 | M27 |

Drilling JIS 10 K (all dimensions in mm)

| Valve Size | XLD 13 Wafer Style | | | XLD 23 Lug Style | | |
|------------|--------------------|------|-------|------------------|----|-----|
| | F | G | H | F | G | H |
| DN 50 | 120 | 4 | 19 | 120 | 4 | M16 |
| DN 65 | 140 | 4 | 19 | 140 | 4 | M16 |
| DN 80 | 150 | 8 | 19 | 150 | 8 | M16 |
| DN 100 | 175 | 8 | 19 | 175 | 8 | M16 |
| DN 125 | 210 | 8 | 23 | 210 | 8 | M20 |
| DN 150 | 240 | 8 | 23 | 240 | 8 | M20 |
| DN 200 | 290 | 12 | 23 | 290 | 12 | M20 |
| DN 250 | 355 | 12 | 25 | 355 | 12 | M22 |
| DN 300 | 400 | 12+4 | 25/22 | 400 | 16 | M22 |
| DN 350 | 445 | 16 | 25 | 445 | 16 | M22 |
| DN 400 | 510 | 16 | 27 | 510 | 16 | M24 |
| DN 450 | 565 | 20 | 27 | 565 | 20 | M24 |
| DN 500 | 620 | 20 | 27 | 620 | 20 | M24 |
| DN 600 | | | | | | |

Drilling ANSI Pressure Class 150 (all dimensions in inches)

| Valve Size | XLD 11 Wafer Style | | | XLD 21 Lug Style | | |
|------------|--------------------|----|------|------------------|----|---------|
| | F | G | H | F | G | H |
| 2" | 4.75 | 4 | 0.75 | 4.75 | 4 | 5/8-11 |
| 3" | 6 | 4 | 0.75 | 6 | 4 | 5/8-11 |
| 4" | 7.5 | 8 | 0.75 | 7.5 | 8 | 5/8-11 |
| 5" | 8.5 | 8 | 0.88 | 8.5 | 8 | 3/4-10 |
| 6" | 9.5 | 8 | 0.88 | 9.5 | 8 | 3/4-10 |
| 8" | 11.75 | 8 | 0.88 | 11.75 | 8 | 3/4-10 |
| 10" | 14.25 | 12 | 1 | 14.25 | 12 | 7/8-9 |
| 12" | 17 | 12 | 1 | 17 | 12 | 7/8-9 |
| 14" | 18.75 | 12 | 1.13 | 18.75 | 12 | 1-8 |
| 16" | 21.25 | 16 | 1.15 | 21.25 | 16 | 1-8 |
| 18" | 22.75 | 16 | 1.25 | 22.75 | 16 | 1 1/8-8 |
| 20" | 25 | 20 | 1.25 | 25 | 20 | 1 1/8-8 |
| 24" | 29.5 | 20 | 1.37 | 29.5 | 20 | 1 1/4-8 |



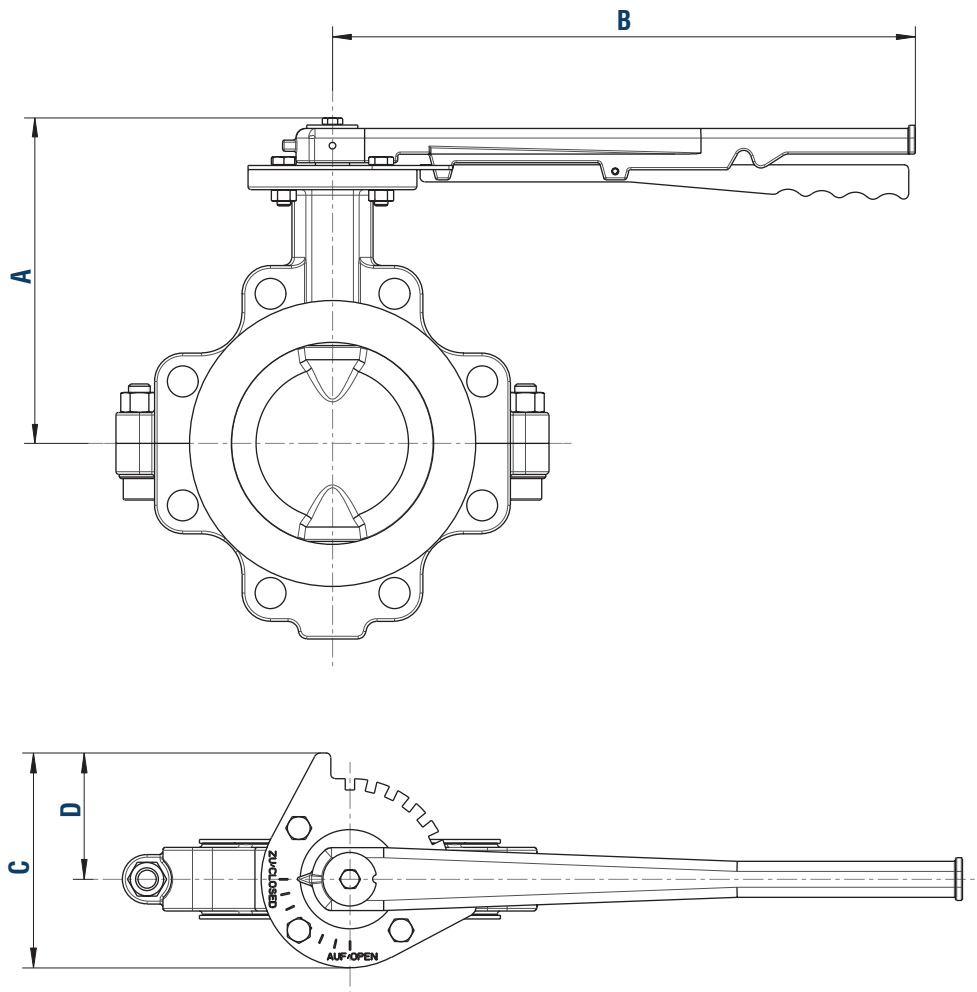
F: Hole Circle
 G: Number of Holes/Threads
 H: Diameter of Hole/Thread Dimension

DIMENSIONS with latching lever

All Dimensions in mm/inches

| DN/Size | 50/2" | 65/2.5" | 80/3" | 100/4" | 125/5" | 150/6" | 200/8" |
|-----------------------------|-----------|-----------|-----------|------------|-----------|------------|------------|
| A | 173/6.81 | 186/7.32 | 192/7.56 | 208/8.19 | 225/8.86 | 245/9.65 | 301/11.85 |
| B | 356/14.02 | 356/14.02 | 356/14.02 | 356/14.02 | 356/14.02 | 432/17.01 | 432/17.01 |
| C | 134/5.28 | 134/5.28 | 134/5.28 | 134/5.28 | 134/5.28 | 134/5.28 | 134/5.28 |
| D | 89/3.50 | 89/3.50 | 89/3.50 | 89/3.50 | 89/3.50 | 89/3.50 | 89/3.50 |
| weight in kg/lbs | 8.5/18.74 | 9/19.84 | 9.5/20.94 | 11.5/25.35 | 14/30.86 | 17.5/38.58 | 27.5/60.63 |

DN 65 NPS 2.5" on request



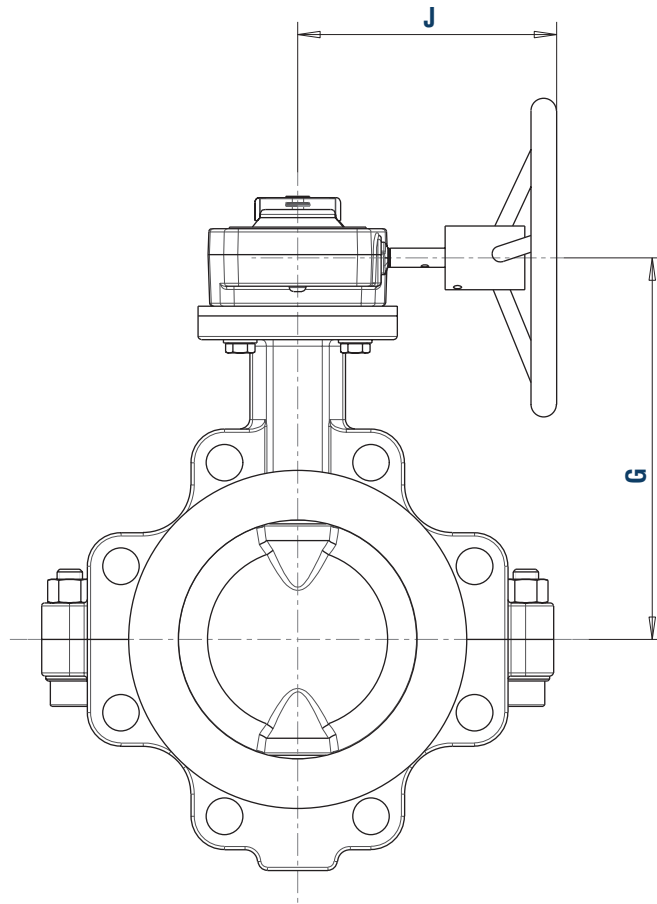
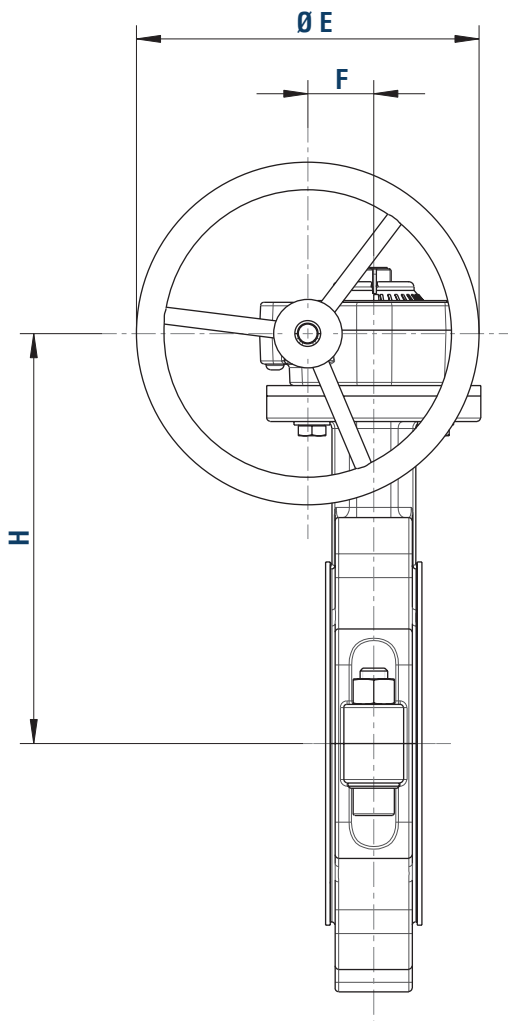
DIMENSIONS with gear

All Dimensions in mm/inches

| DN/Size | 50/2" | 65/2.5" | 80/3" | 100/4" | 125/5" | 150/6" | 200/8" | 250/10" | 300/12" |
|---------------------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|
| ØE | 125/4.92 | 125/4.93 | 125/4.94 | 125/4.95 | 125/4.96 | 203/7.99 | 203/7.100 | 203/7.101 | 203/7.102 |
| F | 38.5/1.52 | 38.5/1.53 | 38.5/1.54 | 38.5/1.55 | 38.5/1.56 | 46.5/1.83 | 60/2.36 | 60/2.37 | 60/2.38 |
| G | 188/7.40 | 201/7.91 | 207/8.15 | 223/8.78 | 241/9.49 | 260/10.24 | 289/11.83 | 314/12.36 | 401/15.79 |
| H | 163/6.42 | 173/6.81 | 179/7.05 | 196/7.72 | 211/8.31 | 228/8.98 | 257/10.12 | 283/11.14 | 369/14.53 |
| J | 134/5.28 | 134/5.29 | 134/5.30 | 134/5.31 | 134/5.32 | 180/7.09 | 205.5/8.09 | 205.5/8.09 | 205.5/8.09 |
| weight in kg/lbs | 8/17.64 | 8.5/18.74 | 9/19.84 | 11/24.25 | 13.5/29.76 | 17.5/38.58 | 29.3/64.60 | 36/79.37 | 58/127.87 |

Dimensions with gear

DN 50 - 300, Sizes 2" - 12"



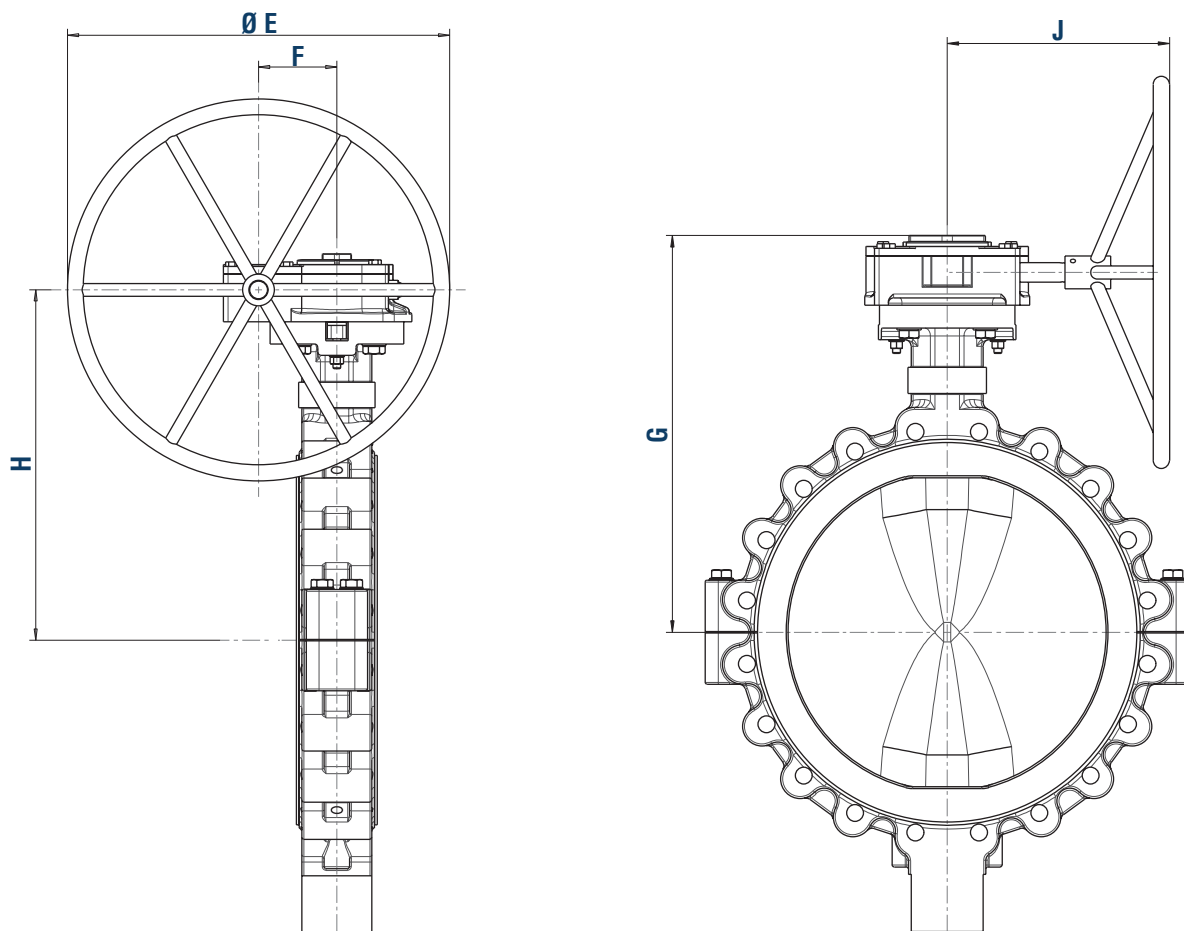
DIMENSIONS with gear

All Dimensions in mm/inches

| DN/Size | 350/14" | 400/16" | 450/18" | 500/20" | 600/24" |
|----------------------------------|------------|------------|-------------|-------------|-------------|
| ØE | 457/17.99 | 457/17.100 | 457/17.101 | 457/17.102 | 610/24.02 |
| F | 66.7/2.63 | 66.7/2.64 | 89.5/3.52 | 89.5/3.53 | 89.5/3.54 |
| G | 498/19.61 | 533/20.98 | 563.5/22.19 | 563.5/22.20 | 653.5/25.73 |
| H | 459/18.07 | 594/23.39 | 520/20.47 | 550/21.56 | 610/24.02 |
| J | 223/8.78 | 223/8.79 | 278/10.94 | 278/10.94 | 310/12.20 |
| weight in kg/lbs (incl.MG) | 112/246.92 | 136/299.83 | 194/427.70 | 210/462.97 | 277/610.68 |

Dimensions with gear

DN 50 - 300, Sizes 2" - 12"



XLD Flow Characteristics

K_v values in m^3/h , $C_v=1.156 K_v$

| ANGLE of aperture ANGLE of aperture (%) | 0° 0 | 9° 10 | 18° 20 | 27° 30 | 36° 40 | 45° 50 | 54° 60 | 63° 70 | 72° 80 | 81° 90 | 90° 100 |
|--|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| DN / NPS | | | | | | | | | | | |
| 50 / 2" | 0 | 0.62 | 2.6 | 12 | 30 | 65 | 95 | 135 | 165 | 170 | 180 |
| 80 / 3" | 0 | 0.82 | 3.6 | 14.4 | 38 | 70 | 112 | 166 | 212 | 228 | 233 |
| 100 / 4" | 0 | 1.5 | 5.8 | 22 | 55 | 102 | 177 | 296 | 408 | 464 | 486 |
| 125 / 5" | 0 | 4.6 | 13 | 40 | 92 | 164 | 267 | 413 | 564 | 698 | 790 |
| 150 / 6" | 0 | 12.12 | 31 | 82 | 183 | 296 | 415 | 595 | 834 | 1115 | 1445 |
| 200 / 8" | 0 | 18.4 | 44 | 130 | 280 | 435 | 640 | 910 | 1282 | 1705 | 2227 |
| 250 / 10" | 0 | 27.3 | 65 | 200 | 410 | 660 | 958 | 1345 | 1912 | 2550 | 3320 |
| 300 / 12" | 0 | 40.7 | 99 | 295 | 596 | 965 | 1396 | 1975 | 2827 | 3795 | 4908 |
| 350 / 14" | 0 | 68 | 216 | 413 | 720 | 1225 | 1944 | 2890 | 4104 | 5520 | 7200 |
| 400 / 16" | 0 | 90 | 268 | 518 | 895 | 1535 | 2416 | 3663 | 5100 | 6960 | 8950 |
| 450 / 18" | 0 | 116 | 340 | 660 | 1135 | 1934 | 3065 | 4610 | 6470 | 8810 | 13350 |
| 500 / 20" | 0 | 164 | 415 | 822 | 1390 | 2400 | 3750 | 5670 | 7925 | 10700 | 13900 |
| 600 / 24" | 0 | 231 | 570 | 1060 | 1900 | 3250 | 5130 | 7790 | 10830 | 14440 | 19000 |

DN 65 NPS 2.5" on request

Valve coefficients for process control: DN 80 - 200 / NPS 3-8

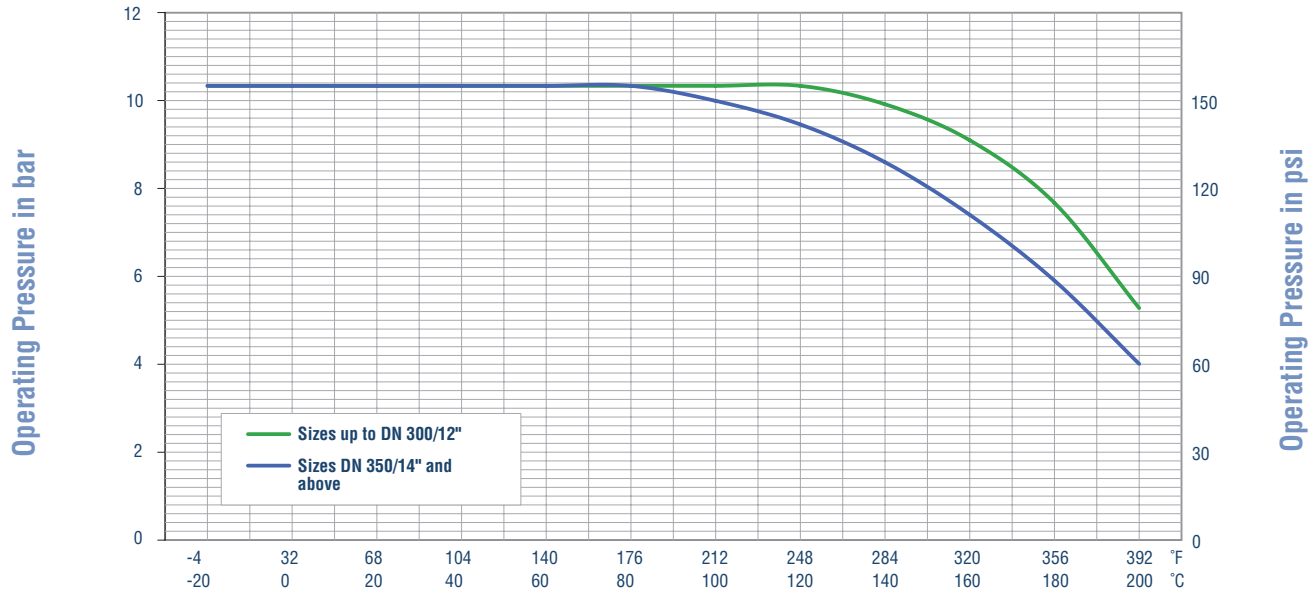
| ANGLE of aperture Rated travel | 9° 0.10 | 18° 0.20 | 27° 0.30 | 36° 0.40 | 45° 0.50 | 54° 0.60 | 63° 0.70 | 72° 0.80 | 81° 0.90 | 90° 1.00 |
|--|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Recovery Factor F_L | 0.85 | 0.85 | 0.85 | 0.85 | 0.81 | 0.73 | 0.67 | 0.61 | 0.59 | 0.55 |
| Factor F_L^2 | 0.72 | 0.72 | 0.72 | 0.72 | 0.66 | 0.53 | 0.45 | 0.37 | 0.35 | 0.30 |
| Valve characteristic z_v | 0.47 | 0.47 | 0.47 | 0.47 | 0.43 | 0.37 | 0.33 | 0.28 | 0.27 | 0.24 |
| Pressure differential ratio κ_T | 0.61 | 0.61 | 0.61 | 0.61 | 0.55 | 0.45 | 0.38 | 0.31 | 0.29 | 0.25 |
| Valve style modifier F_d | 0.08 | 0.15 | 0.23 | 0.31 | 0.38 | 0.45 | 0.52 | 0.58 | 0.64 | 0.70 |

Valve coefficients for process control: DN 250 - 600 / NPS 10-24

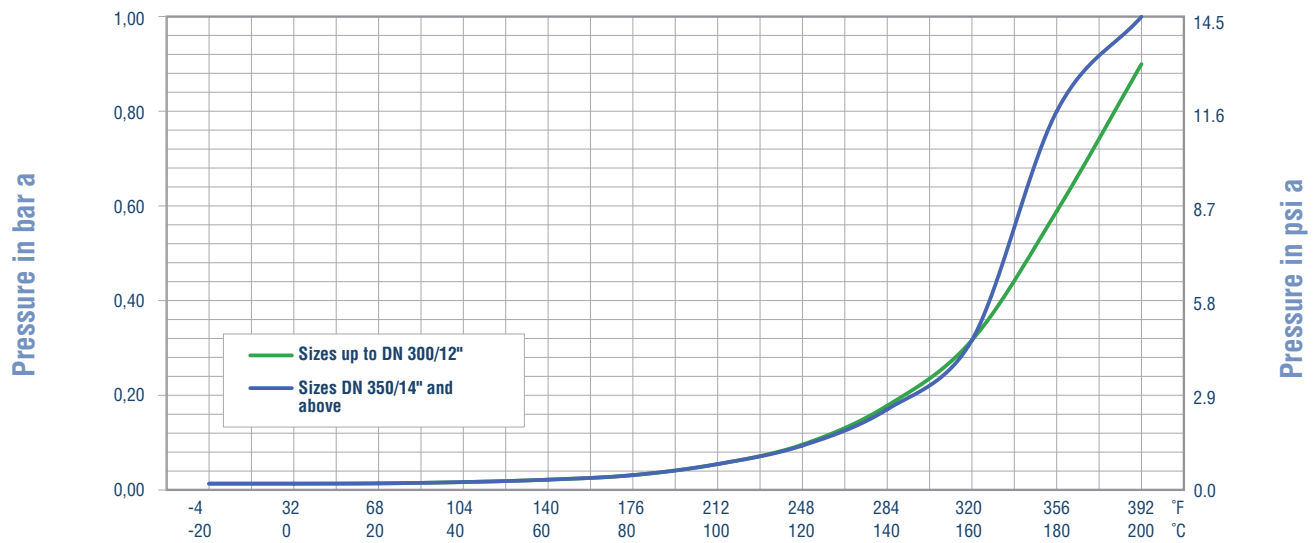
| ANGLE of aperture Rated travel | 9° 0.10 | 18° 0.20 | 27° 0.30 | 36° 0.40 | 45° 0.50 | 54° 0.60 | 63° 0.70 | 72° 0.80 | 81° 0.90 | 90° 1.00 |
|--|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Recovery Factor F_L | 0.80 | 0.82 | 0.82 | 0.82 | 0.78 | 0.67 | 0.56 | 0.51 | 0.48 | 0.42 |
| Factor F_L^2 | 0.64 | 0.67 | 0.67 | 0.67 | 0.61 | 0.45 | 0.31 | 0.26 | 0.23 | 0.18 |
| Valve characteristic z_v | 0.43 | 0.44 | 0.44 | 0.44 | 0.41 | 0.33 | 0.25 | 0.22 | 0.20 | 0.16 |
| Pressure differential ratio κ_T | 0.54 | 0.56 | 0.56 | 0.56 | 0.51 | 0.38 | 0.26 | 0.22 | 0.19 | 0.15 |
| Valve style modifier F_d | 0.08 | 0.15 | 0.23 | 0.31 | 0.38 | 0.45 | 0.52 | 0.58 | 0.64 | 0.70 |

XLD Pressure/Temperature Ratings & Valve Torques

XLD Pressure/Temperature Graph



XLD Vacuum/Temperature Graph



| Valve Size | | DN 50/2" | DN 80/3" | DN 100/4" | DN 125/5" | DN 150/6" | DN 200/8" | DN 250/10" | DN 300/12" | DN 350/14" | DN 400/16" | DN 450/18" | DN 500/20" | DN 600/24" |
|--------------------------|--------|----------|----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
| Break-away Torque *1 | Nm | 35 | 35 | 50 | 62 | 94 | 209 | 242 | 308 | 500 | 600 | 800 | 1200 | 1900 |
| | in.lbs | 310 | 310 | 443 | 549 | 832 | 1850 | 2142 | 2726 | 4426 | 5311 | 7081 | 10621 | 16817 |
| Max. allowable Torque *2 | Nm | 162 | 162 | 162 | 162 | 296 | 628 | 628 | 628 | 2488 | 2488 | 2946 | 2946 | 5954 |
| | in.lbs | 1434 | 1434 | 1434 | 1434 | 2620 | 5558 | 5558 | 5558 | 22021 | 22021 | 26075 | 26075 | 52699 |

DN 65 NPS 2.5" on request

*1 Identical torque at opening and closing, running torque = 40% of break away torque. *2 Max. allowable torque acc. to EN-JS1049

XOMOX®

CRANE ChemPharma Flow Solutions™
4444 Cooper Road, Cincinnati, OH 45030

Tel: (513) 745-6000

Fax: (513) 745-6086

www.xomox.com

www.cranchempharma.com

CRANE

ChemPharma Flow Solutions

brands you trust.

CRANE Chempharma Flow Solutions Include: Pipe - Valves - Fittings - Actuators - Pumps

DEPA®

ELRO

RESISTOFLEX®

ResistoPure



Saunders®
the science inside

XOMOX®

© 2009 CRANE ChemPharma Flow Solutions, www.cranchempharma.com