

XOMOX[®]

XOMOX[®] LINED BALL VALVES SERIES XLB



DATASHEET

CRANE[®]

v in

www.cranecpe.com

Lined Ball Valves Features and Benefits

Product Specifications

Materials of Construction

- **Body:** EN 1563 / EN-GJS-400-18-LT (5.3103) ASTM A395 / 60-40-18, PFA, PFA antistatic, PVDF
- **Ball:** 1.4470/ASTM A995 gr 4A, PFA, PFA antistatic, PVDF

Size Range

- ½"/DN15 through 6"/DN150 full port
- 1½" Through 8" reduced port
- Other sizes available up to 12"/DN300

Pressure Ratings

- ASME Class 150, PN16 and JIS10

Temperature Range

- -20°F (-29°C) to 400°F (204°C)

Options

- Chlorine application
- Oxygen application
- Other painting on request
- Complies with ATEX, European Directive 94/9/EG

- PVDF Lining
- Flow Characterization – V port

Industries

- Chlor-Alkali
- Industrial Inorganic Chemicals
- Metal and Mining
- Pharmaceutical
- Nitrogen and Phosphatic Fertilizers
- Petroleum Refining

Applications

- Chlorine
- Brine
- Benzene
- Bromine
- Sulfuric Acid
- Nitric Acid
- Hydrochloric Acid
- Phosphoric Acid
- Sea Water

Features and Benefits

1

SX Seal

Innovative patented SX seal that moves in conjunction with the spherical portion of the stem, maintaining a constant seal delivering

2

Lower Torques

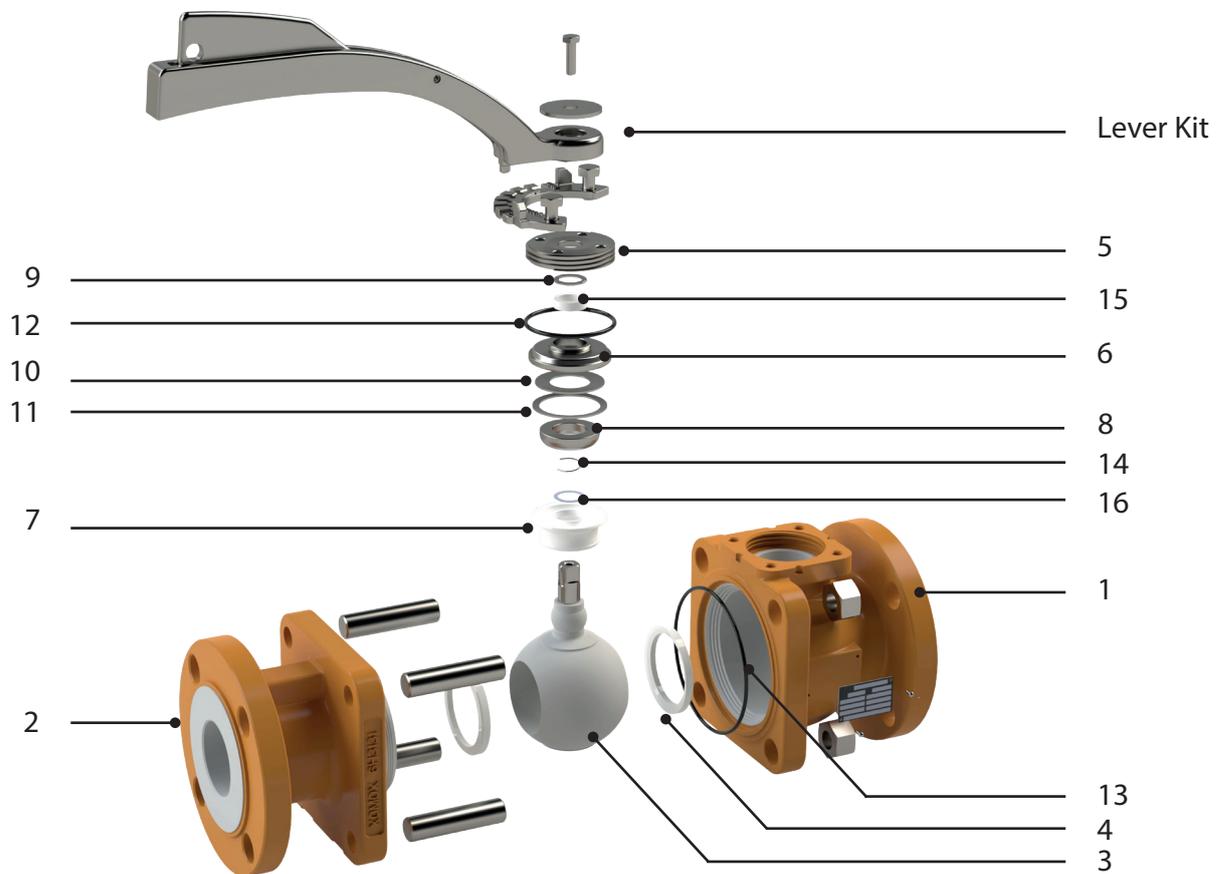
Easy to operate smaller actuators, and reduced total costs

3

Longer Life

Compact design leads to weight savings, which is easy for end-users to install in service and allows installation in space restricted areas

Lined Ball Valves Exploded View



| No. | Component | DI/PFA | SS/PFA |
|-----|-------------------|--------------------------|--|
| 1 | Body | DI/PFA | CF8M/PFA |
| 2 | Tail | DI/PFA | CF8M/PFA |
| 3 | Ball-stem | 1.4470/PFA | 1.4470/PFA |
| 4 | Seat ring | Chemically modified PTFE | Chemically modified PTFE |
| 5 | Cover | 17-4PH | 17-4PH |
| 6 | Stuffing box | 17-4PH | 17-4PH |
| 7 | SX-seal | Chemically modified PTFE | Chemically modified PTFE |
| 8 | Wedge Ring | 1.4404 | 1.4404 |
| 9 | Follower | 1.4541 | 1.4541 |
| 10 | Spring washer | 1.4310 | 1.4310 |
| 11 | SX Press Ring | 1.4451 | 1.4451 |
| 12 | O-ring | FKM | FKM / FVMQ (on request for low temperature applications) |
| 13 | O-ring | FKM | FKM / FVMQ (on request for low temperature applications) |
| 14 | Static eliminator | 1.4310 | 1.4310 |
| 15 | PTFE packing rope | PTFE | PTFE |

*See "How To Order" section for further material selections.

Lined Ball Valves XLB 24A

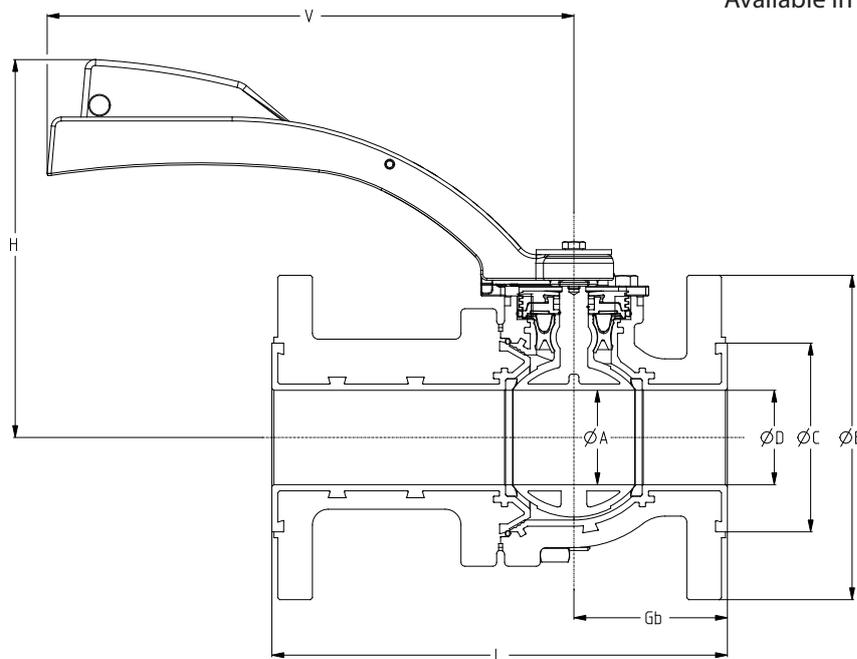
XOMOX® Fully Lined Ball Valve Full Port

Flange Connection EN 1092-2 PN16

Face-to-Face Dimension acc. to EN 558

(Table 2, Row1) (Former R201)

Available in ductile iron and stainless steel



Dimensions in mm

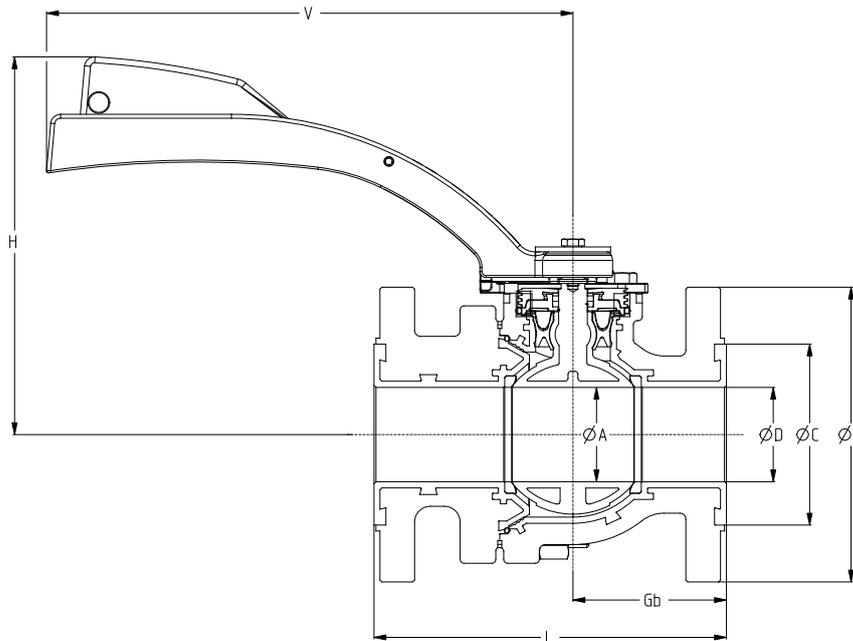
| DN | A | C | D | E | L | Gb | H | V | Weight | ISO 5211 |
|--------|-----|-----|-----|-----|-----|-------|-----|-----|--------|----------|
| | | | | | | | | | kg | |
| 15 | 23 | 45 | 15 | 95 | 130 | 55.3 | 140 | 170 | 4.2 | F05 |
| 20 | 23 | 58 | 20 | 105 | 150 | 55.3 | 140 | 170 | 4.7 | F05 |
| 25 | 23 | 68 | 23 | 115 | 160 | 54.3 | 140 | 170 | 5.7 | F05 |
| 32 | 37 | 78 | 32 | 140 | 180 | 70 | 183 | 266 | 9.2 | F07 |
| 40 | 37 | 88 | 37 | 150 | 200 | 70 | 183 | 266 | 11 | F07 |
| 50 | 48 | 102 | 48 | 165 | 230 | 77.5 | 191 | 266 | 13.5 | F07 |
| 65/50* | 48 | 122 | 48 | 185 | 290 | 80.7 | 191 | 266 | 17 | F07 |
| 80 | 75 | 138 | 75 | 190 | 310 | 85.5 | 216 | 350 | 29 | F10 |
| 100 | 98 | 158 | 98 | 220 | 350 | 98.3 | 242 | 350 | 42 | F10 |
| 150 | 145 | 212 | 145 | 285 | 480 | 129.4 | 271 | 350 | 77 | F12 |

* DN 65 is standard port valve

| Flow Coefficient | | | | | | | | | | |
|------------------------|------|----|----|----|-----|-----|---------|-----|------|------|
| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 - 50 | 80 | 100 | 150 |
| Cv | 12.6 | 35 | 57 | 72 | 213 | 295 | 215 | 670 | 1650 | 3440 |
| Kv [m ³ /h] | 10.9 | 31 | 49 | 62 | 184 | 255 | 186 | 580 | 1427 | 2976 |

Lined Ball Valves XLB 12A

XOMOX® Fully Lined Ball Valve Full Port
 Flange Connection ASME B16.5 - Class 150
 Face-to-Face Dimension
 ASME B16.10 (Former 911)
 Available in ductile iron and stainless steel



Dimensions in inches/mm

| Size | A | | C | | D | | E | | L | | Gb | | H | | V | | Weight | | ISO 5211 |
|--------|------|-----|------|-----|------|-----|-------|-----|-------|-----|------|-----|-------|-----|-------|-----|--------|------|----------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | lb | Kg | |
| 1/2" | 0.91 | 23 | 1.38 | 35 | 0.59 | 15 | 3.50 | 89 | 5.12 | 130 | 2.05 | 52 | 5.51 | 140 | 6.69 | 170 | 8.6 | 3.9 | F05 |
| 3/4" | 0.91 | 23 | 1.69 | 43 | 0.79 | 20 | 3.88 | 98 | 5.91 | 150 | 2.05 | 52 | 5.51 | 140 | 6.69 | 170 | 9.5 | 4.3 | F05 |
| 1" | 0.91 | 23 | 2.01 | 51 | 0.91 | 23 | 4.25 | 108 | 5.00 | 127 | 2.01 | 51 | 5.51 | 140 | 6.69 | 170 | 10.3 | 4.7 | F05 |
| 1 1/2" | 1.46 | 37 | 2.87 | 73 | 1.46 | 37 | 5.00 | 127 | 6.50 | 165 | 2.64 | 67 | 7.20 | 183 | 10.47 | 266 | 20 | 9 | F07 |
| 2" | 1.85 | 47 | 3.62 | 92 | 1.85 | 47 | 6.00 | 152 | 7.00 | 178 | 2.95 | 75 | 7.52 | 191 | 10.47 | 266 | 26 | 11.6 | F07 |
| 3" | 2.95 | 75 | 5.00 | 127 | 2.95 | 75 | 7.50 | 191 | 8.00 | 203 | 3.39 | 86 | 8.50 | 216 | 13.78 | 350 | 51 | 23 | F10 |
| 4" | 3.82 | 97 | 6.18 | 157 | 3.82 | 97 | 9.00 | 229 | 9.00 | 229 | 3.86 | 98 | 9.53 | 242 | 13.78 | 350 | 81 | 37 | F10 |
| 6" | 5.71 | 145 | 8.50 | 216 | 5.71 | 145 | 11.00 | 279 | 10.50 | 267 | 4.65 | 118 | 10.67 | 271 | 13.78 | 350 | 130 | 59 | F12 |

* Ductile iron 1/2" and 3/4" valves are XLB 13 long pattern valve

* Contact CRANE ChemPharma Sales Office for dimensions of 1/2" and 3/4" stainless steel valves

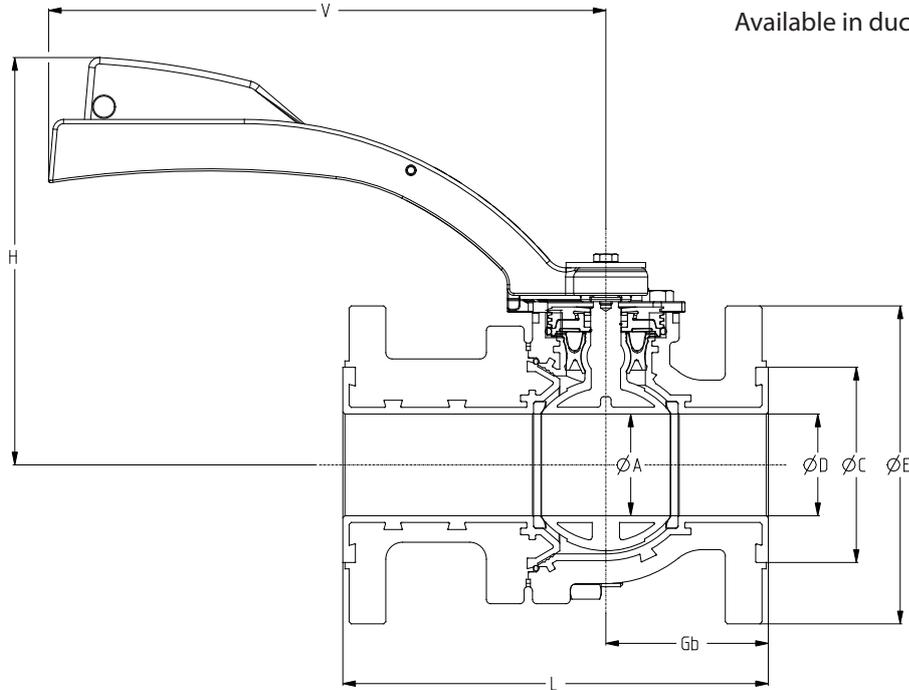
* Flange holes on 1/2" and 3/4" valves are threaded UNC 1/2"-13

| Flow Coefficient | | | | | | | | |
|------------------------|------|------|----|--------|-----|-----|------|------|
| Size | 1/2" | 3/4" | 1" | 1 1/2" | 2" | 3" | 4" | 6" |
| Cv | 12.6 | 35 | 57 | 213 | 295 | 670 | 1650 | 3440 |
| Kv [m ³ /h] | 10.9 | 31 | 49 | 184 | 255 | 580 | 1427 | 2976 |

Lined Ball Valves XLB 13A

XOMOX® Fully Lined Ball Valve Full Port
 Flange Connection ASME B16.5 - Class 150
 Face-to-Face Dimension Long Pattern
 (former R202)

Available in ductile iron only



Dimensions in inches/mm

| Size | A | | C | | D | | E | | L | | Gb | | H | | V | | Weight | | ISO 5211 |
|--------|------|-----|------|-----|------|-----|-------|-----|-------|-------|------|-----|-------|-----|-------|-----|--------|-----|----------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | lb | Kg | |
| 1/2"* | 0.91 | 23 | 1.38 | 35 | 0.59 | 15 | 3.50 | 89 | 5.12 | 130 | 2.05 | 52 | 5.51 | 140 | 6.69 | 170 | 8.6 | 3.9 | F05 |
| 3/4"* | 0.91 | 23 | 1.69 | 43 | 0.79 | 20 | 3.88 | 98 | 5.91 | 150 | 2.05 | 52 | 5.51 | 140 | 6.69 | 170 | 9.5 | 4.3 | F05 |
| 1" | 0.91 | 23 | 2.01 | 51 | 0.91 | 23 | 4.25 | 108 | 6.00 | 152.3 | 2.01 | 51 | 5.51 | 140 | 6.69 | 170 | 11 | 5 | F05 |
| 1 1/2" | 1.46 | 37 | 2.87 | 73 | 1.46 | 37 | 5.00 | 127 | 7.01 | 178 | 2.64 | 67 | 7.20 | 183 | 10.47 | 266 | 20 | 9 | F07 |
| 2" | 1.85 | 47 | 3.62 | 92 | 1.85 | 47 | 6.00 | 152 | 7.99 | 203 | 2.95 | 75 | 7.52 | 191 | 10.47 | 266 | 26 | 12 | F07 |
| 3" | 2.95 | 75 | 5.00 | 127 | 2.95 | 75 | 7.50 | 191 | 9.49 | 241 | 3.39 | 86 | 8.50 | 216 | 10.47 | 350 | 55 | 25 | F10 |
| 4" | 3.82 | 97 | 6.18 | 157 | 3.82 | 97 | 9.00 | 229 | 11.50 | 292 | 3.86 | 98 | 9.53 | 242 | 13.78 | 350 | 86 | 39 | F10 |
| 6" | 5.71 | 145 | 8.50 | 216 | 5.71 | 145 | 11.00 | 279 | 14.02 | 356 | 4.65 | 118 | 10.67 | 271 | 13.78 | 350 | 147 | 67 | F12 |

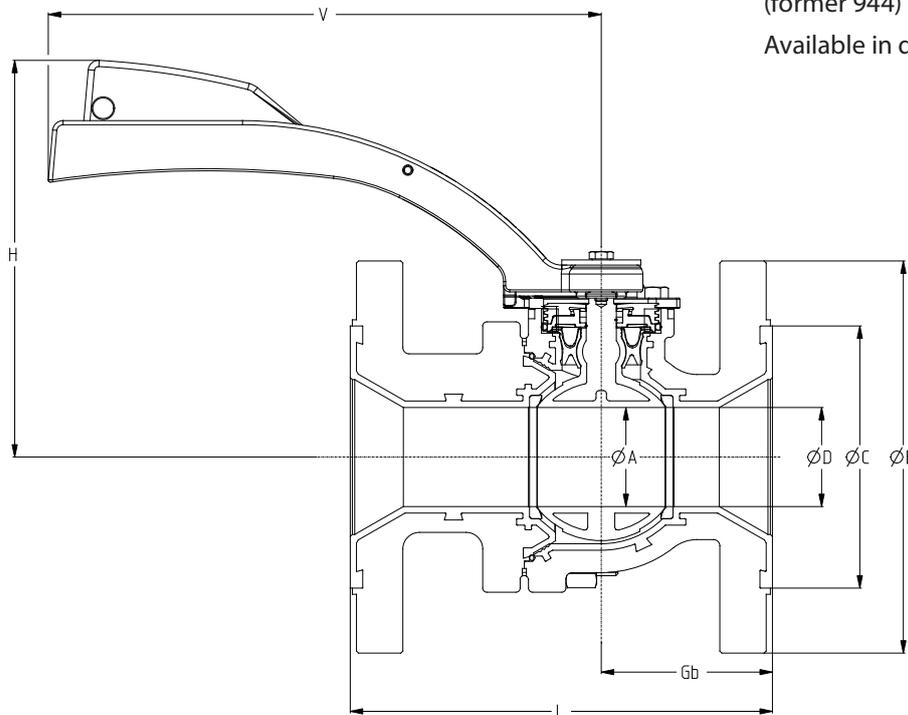
* Flange holes on 1/2" and 3/4" valves are threaded UNC 1/2"-13

| Flow Coefficient | | | | | | | | |
|------------------|------|------|----|--------|-----|-----|------|------|
| Size | 1/2" | 3/4" | 1" | 1 1/2" | 2" | 3" | 4" | 6" |
| Cv | 12.6 | 35.0 | 57 | 213 | 295 | 670 | 1650 | 3440 |
| Kv [m3/h] | 10.9 | 31.0 | 49 | 184 | 255 | 580 | 1427 | 2976 |

Lined Ball Valves XLB 42A

XOMOX® Fully Lined Ball Valve Standard Port
 Flange Connection ASME B16.5 - Class 150
 Face-to-Face Dimension acc. ASME B16.10
 (former 944)

Available in ductile iron only



Dimensions in inches/mm

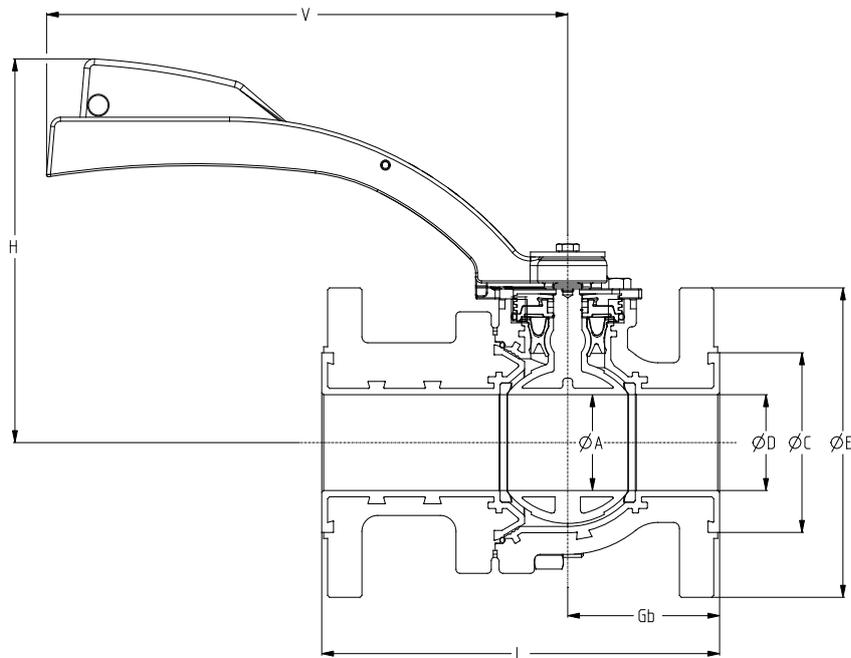
| Size | A | | C | | D | | E | | L | | Gb | | H | | V | | Weight | | ISO 5211 |
|------|------|-----|-------|-----|------|-----|-------|-----|-------|-----|------|-----|-------|-----|-------|-----|--------|------|----------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | lb | Kg | |
| 1"* | 0.91 | 23 | 2.01 | 51 | 0.91 | 23 | 4.25 | 108 | 5.00 | 127 | 2.01 | 51 | 5.51 | 140 | 6.69 | 170 | 10.3 | 4.7 | F05 |
| 1 ½" | 0.91 | 23 | 2.87 | 73 | 1.57 | 40 | 5.00 | 127 | 6.50 | 165 | 2.24 | 56 | 5.51 | 140 | 6.69 | 170 | 13 | 6 | F05 |
| 2" | 1.46 | 37 | 3.62 | 92 | 1.97 | 50 | 6.00 | 152 | 7.00 | 178 | 2.95 | 75 | 7.20 | 183 | 10.47 | 266 | 23 | 10.5 | F07 |
| 3" | 1.85 | 47 | 5.00 | 127 | 3.15 | 80 | 7.50 | 191 | 8.00 | 204 | 3.23 | 82 | 7.52 | 191 | 10.47 | 266 | 35 | 16 | F07 |
| 4" | 2.95 | 75 | 6.18 | 157 | 3.94 | 100 | 9.00 | 229 | 9.00 | 228 | 3.82 | 98 | 8.50 | 216 | 13.78 | 350 | 64 | 29 | F10 |
| 6" | 3.82 | 97 | 8.50 | 216 | 5.91 | 150 | 11.00 | 279 | 10.50 | 267 | 3.90 | 109 | 9.53 | 242 | 13.78 | 350 | 97 | 44 | F10 |
| 8" | 5.71 | 145 | 10.63 | 270 | 7.79 | 198 | 13.50 | 343 | 11.49 | 292 | 5.12 | 130 | 10.67 | 271 | 13.78 | 350 | 163 | 74 | F12 |

* 1" valve is XLB 12 Full Port valve

| Flow Coefficient | | | | | | | |
|------------------------|----|------|-----|-----|-----|-----|------|
| Size | 1" | 1 ½" | 2" | 3" | 4" | 6" | 8" |
| Cv | 57 | 50 | 190 | 199 | 598 | 996 | 1832 |
| Kv [m ³ /h] | 49 | 43 | 164 | 172 | 517 | 862 | 1671 |

Lined Ball Valves XLB 35A

XOMOX® Fully Lined Ball Valve Full Port
 Flange Connection JIS B2210 for 10kg
 Face-to-Face Long Pattern (former R203)
 Available in ductile iron only



Dimensions in mm

| DN | A | C | D | E | L | Gb | H | V | Weight | ISO 5211 |
|-------|-----|-----|-----|-----|-----|------|-----|-----|--------|----------|
| | | | | | | | | | kg | |
| 15 | 23 | 52 | 15 | 95 | 130 | 55.3 | 135 | 170 | 4.3 | F05 |
| 20 | 23 | 58 | 20 | 100 | 150 | 55.3 | 140 | 170 | 4.5 | F05 |
| 25 | 23 | 67 | 23 | 125 | 160 | 54.3 | 140 | 170 | 6 | F05 |
| 32 | 37 | 81 | 37 | 140 | 200 | 70 | 183 | 266 | 9.2 | F07 |
| 40 | 48 | 96 | 48 | 155 | 203 | 77.5 | 191 | 266 | 10.5 | F07 |
| 50 | 48 | 116 | 48 | 175 | 290 | 80.7 | 191 | 266 | 12 | F07 |
| 65/50 | 75 | 126 | 75 | 190 | 310 | 85.5 | 216 | 266 | 16 | F07 |
| 80 | 98 | 151 | 98 | 210 | 350 | 98.3 | 242 | 350 | 27 | F10 |
| 100 | 97 | 155 | 97 | 210 | 350 | 98 | 242 | 350 | 39 | F10 |
| 150 | 145 | 215 | 145 | 280 | 356 | 118 | 271 | 350 | 68 | F12 |

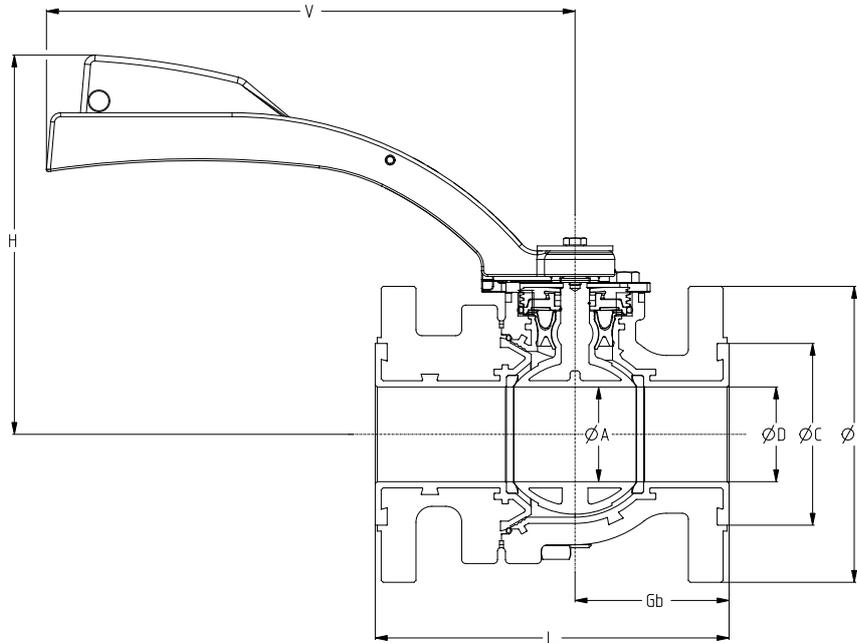
* DN 65 is standard port valve

Flow Coefficient

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 - 50 | 80 | 100 | 150 |
|------------------------|------|----|----|----|-----|-----|---------|-----|------|------|
| Cv | 12.6 | 35 | 57 | 72 | 213 | 295 | 295 | 670 | 1650 | 3440 |
| Kv [m ³ /h] | 10.9 | 31 | 49 | 62 | 184 | 255 | 255 | 580 | 1427 | 2976 |

Lined Ball Valves XLB 32A

XOMOX® Fully Lined Ball Valve Full Port
 Flange Connection JIS B2210 for 10kg
 Face-to-Face ASME B16.10
 Available in stainless steel only



Dimensions in mm

| DN | A | C | D | E | L | Gb | H | V | Weight | ISO 5211 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|----------|
| | | | | | | | | | kg | |
| 15 | 23 | 52 | 15 | 95 | 108 | 52 | 140 | 170 | 4.3 | F05 |
| 20 | 23 | 58 | 20 | 100 | 117 | 52 | 140 | 170 | 4.5 | F05 |
| 25 | 23 | 67 | 23 | 125 | 127 | 51 | 140 | 170 | 4.7 | F05 |
| 40 | 37 | 81 | 37 | 140 | 165 | 67 | 183 | 266 | 9 | F07 |
| 50 | 47 | 96 | 47 | 155 | 178 | 75 | 191 | 266 | 12 | F07 |
| 80 | 75 | 126 | 75 | 185 | 203 | 86 | 216 | 350 | 23 | F10 |
| 100 | 97 | 151 | 97 | 210 | 229 | 98 | 242 | 350 | 37 | F10 |
| 150 | 145 | 216 | 145 | 280 | 267 | 118 | 271 | 350 | 59 | F12 |

* DN 65 is standard port valve

| Flow Coefficient | | | | | | | | | |
|------------------------|------|----|----|-----|-----|-----|------|------|--|
| DN | 15 | 20 | 25 | 40 | 50 | 80 | 100 | 150 | |
| Cv | 12.6 | 35 | 57 | 213 | 295 | 670 | 1650 | 3440 | |
| Kv [m ³ /h] | 10.9 | 31 | 49 | 184 | 255 | 580 | 1427 | 2976 | |

Lined Ball Valves Flow Characteristics

Flow Characteristics Full Port Valves Kv [m3/h] = f (DN, Angle of aperture)

| Angle of Aperture | | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° |
|---------------------|-----|------|------|------|------|-------|-------|-------|------|-------|-------|
| Angle of Aperture % | | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| DN | in | | | | | | | | | | |
| 15 | ½ | 0.05 | 0.14 | 0.29 | 0.45 | 0.83 | 1.2 | 2.1 | 3 | 6.2 | 11 |
| 20 | ¾ | 0.21 | 0.47 | 1 | 1.52 | 2.55 | 3.57 | 5.84 | 8.1 | 17.3 | 31 |
| 25 | 1 | 0.34 | 0.76 | 1.6 | 2.45 | 4.1 | 5.75 | 9.4 | 13 | 28 | 50 |
| 32* | 1¼ | 0.73 | 1.58 | 3.43 | 5.18 | 8.56 | 11.25 | 18.3 | 24.4 | 59.9 | 61.8 |
| 40 | 1 ½ | 1.12 | 2.45 | 5.28 | 8.11 | 13.8 | 19.4 | 35.2 | 51 | 104 | 184 |
| 50 | 2 | 1.32 | 2.87 | 6.17 | 9.46 | 16 | 22.6 | 44.3 | 66 | 142 | 255 |
| 65** | 2½ | 1.07 | 2.27 | 4.81 | 7.19 | 12.16 | 16.98 | 33.1 | 48.9 | 105.8 | 186.2 |
| 80 | 3 | 2.86 | 7.61 | 15.7 | 23.8 | 38.15 | 52.5 | 100 | 149 | 321 | 578 |
| 100 | 4 | 7 | 17 | 36 | 55 | 87 | 121 | 244 | 367 | 791 | 1427 |
| 150 | 6 | 18 | 49 | 100 | 152 | 243 | 334 | 505.4 | 769 | 1652 | 2976 |

* with ball/stem DN40 Cv = 1.156Kv
 ** with ball/stem DN50

FL,KT ZY, = f (Angle of aperture)

| Angle of Aperture | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|
| Rated Travel | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |
| Recovery Factor FL | 0.91 | 0.91 | 0.9 | 0.88 | 0.85 | 0.8 | 0.74 | 0.67 | 0.57 | 0.28 |
| Valve Characteristic ZY | 0.52 | 0.52 | 0.51 | 0.49 | 0.47 | 0.43 | 0.38 | 0.33 | 0.26 | 0.09 |
| Pressure Differential Ratio KT | 0.7 | 0.7 | 0.68 | 0.65 | 0.61 | 0.54 | 0.46 | 0.38 | 0.27 | 0.07 |

Flow Characteristics Standard Port Valves Kv [m3/h] = f (DN, Angle of aperture)

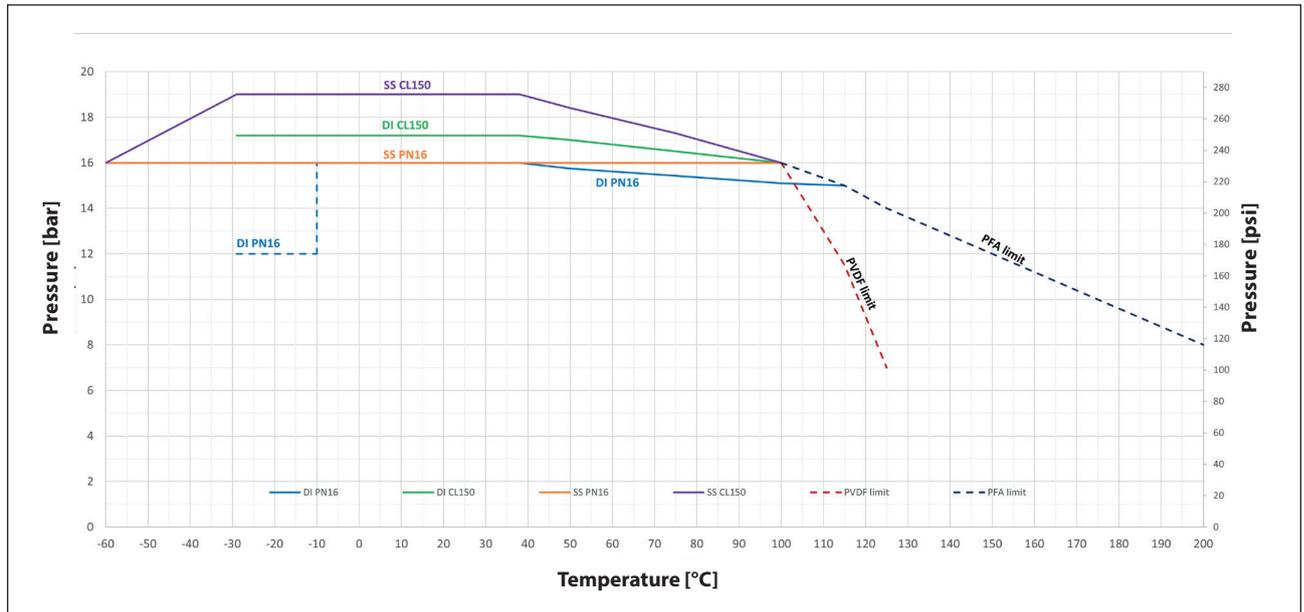
| Angle of Aperture | | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° |
|---------------------|-----|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Angle of Aperture % | | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| DN | in | | | | | | | | | | |
| 40 | 1 ½ | 0.26 | 0.57 | 1.24 | 1.9 | 3.23 | 4.54 | 8.25 | 11.95 | 24.36 | 43.1 |
| 50 | 2 | 0.85 | 1.84 | 3.96 | 6.08 | 10.28 | 14.52 | 28.46 | 42.39 | 91.21 | 163.79 |
| 80 | 3 | 0.85 | 2.27 | 4.68 | 7.1 | 11.38 | 15.66 | 29.83 | 44.45 | 95.75 | 172.41 |
| 100 | 4 | 2.36 | 6.3 | 13.03 | 19.76 | 31.71 | 43.71 | 88.28 | 132.85 | 286.69 | 517.24 |
| 150 | 6 | 3.76 | 10.12 | 20.85 | 31.62 | 50.63 | 69.64 | 146.34 | 222.58 | 478.56 | 862.07 |
| 200 | 8 | 12.72 | 20 | 40.4 | 61.32 | 98.4 | 135 | 257.1 | 431.3 | 930.8 | 1671 |

Cv = 1.156Kv

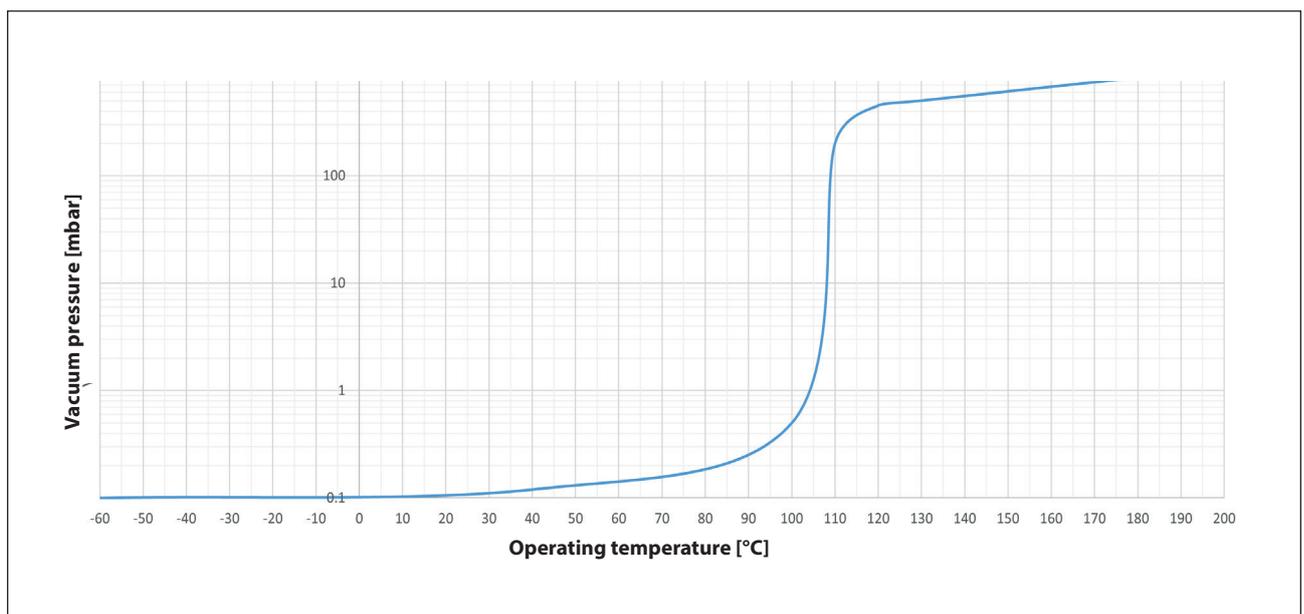
| Angle of Aperture | 9° | 18° | 27° | 36° | 45° | 54° | 63° | 72° | 81° | 90° |
|--|-----|------|------|------|------|------|------|------|------|------|
| Rated Travel | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |
| Recovery Factor FL | --- | 0.95 | 0.94 | 0.92 | 0.89 | 0.87 | 0.85 | 0.8 | 0.7 | 0.65 |
| Valve Characteristic Z _y | --- | 0.51 | 0.49 | 0.47 | 0.43 | 0.38 | 0.33 | 0.26 | 0.09 | 0.05 |
| Pressure Differential Ratio K _T | --- | 0.64 | 0.64 | 0.72 | 0.79 | 0.61 | 0.51 | 0.37 | 0.24 | 0.16 |

Lined Ball Valves Performance

Pressure/Temperature Diagram



Vacuum/Temperature Diagram



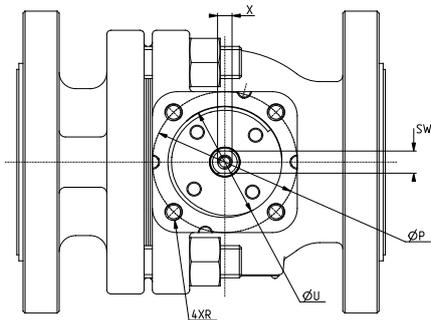
Notes

1. Body material (EN-GJS-400-18-LT (5.3103) / 60-40-18) meets the requirements of both EN 1563 and ASTM A395
2. Minimum temperature for ductile iron material (60-40-18) according to ASME B16.42 is -20° F (-29° C)
3. Minimum temperature for EN-GJS-400-18-LT (5.3103) is -10° C (-14° F)
4. For valves with ductile iron bodies maximum cold working gauge pressure for JIS 10Kg is 10 bar (145 psig) for EN PN16 is 16 bar (232 psig) and ASME Class 150 is 250 psig (17.2 bar). For valves with stainless steel bodies, ASME Class 150 is 278 psig (19.2 bar).
5. Contact your Crane ChemPharma & Energy sales office for applications outside the relevant pressure and temperature limits of the design code in question (dash line).

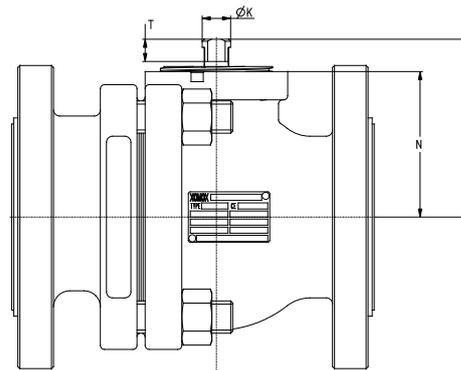
Lined Ball Valves Torques and Actuators Mounting

Operating Torques (max. break-away torque)

| Full Port Size | | Standard Port Size | | ΔP up to 5 bar | ΔP up to 70 psi | ΔP up to 10 bar | ΔP up to 145 psi | ΔP up to 17.6 bar | ΔP up to 250 psi |
|----------------|--------|--------------------|--------|----------------|-----------------|-----------------|------------------|-------------------|------------------|
| DN | in | DN | in | Nm at 20°C | in/lb at 70°F | Nm at 20°C | in/lb at 70°F | Nm at 20°C | in/lb at 70°F |
| 15 | 1/2" | - | - | 8 | 71 | 8 | 71 | 9 | 80 |
| 20 | 3/4" | - | - | 8 | 71 | 8 | 71 | 9 | 80 |
| 25 | 1" | 40 | 1 1/2" | 8 | 71 | 8 | 71 | 9 | 80 |
| 32 | 1 1/4" | - | - | 12 | 106 | 13 | 115 | 20 | 177 |
| 40 | 1 1/2" | 50 | 2" | 12 | 106 | 13 | 115 | 20 | 177 |
| 50 | 2" | 80 | 3" | 19 | 168 | 20 | 177 | 25 | 221 |
| 50/65 | 2 1/2" | - | - | 19 | 168 | 20 | 177 | 25 | 221 |
| 80 | 3" | 100 | 4" | 35 | 310 | 55 | 487 | 70 | 620 |
| 100 | 4" | 150 | 6" | 77 | 682 | 90 | 797 | 100 | 885 |
| 150 | 6" | 200 | 8" | 154 | 1363 | 190 | 1682 | 260 | 2301 |



Top View



Side View

Actuator Mounting Dimensions

| Full Port Size | | Standard Port Size | | ISO 5211 | U | 4XR | P | SW | T | K | X | N | Q |
|----------------|--------|--------------------|--------|----------|----|-----|-----|----|----|----|----|-----|-----|
| DN | in | DN | in | | | | | | | | | | |
| 15 | 1/2" | - | - | F05 | 35 | M6 | 50 | 9 | 9 | 12 | M6 | 48 | 62 |
| 20 | 3/4" | - | - | F05 | 35 | M6 | 50 | 9 | 9 | 12 | M6 | 48 | 62 |
| 25 | 1" | 40 | 1 1/2" | F05 | 35 | M6 | 50 | 9 | 9 | 12 | M6 | 48 | 62 |
| 32 | 1 1/4" | - | - | F07 | 55 | M8 | 70 | 11 | 11 | 14 | M6 | 62 | 78 |
| 40 | 1 1/2" | 50 | 2" | F07 | 55 | M8 | 70 | 11 | 11 | 14 | M6 | 62 | 78 |
| 50 | 2" | 80 | 3" | F07 | 55 | M8 | 70 | 11 | 11 | 14 | M6 | 70 | 86 |
| 65 | 2 1/2" | - | - | F07 | 55 | M8 | 70 | 11 | 11 | 14 | M6 | 70 | 86 |
| 80 | 3" | 100 | 4" | F10 | 70 | M10 | 102 | 17 | 17 | 22 | M8 | 100 | 122 |
| 100 | 4" | 150 | 6" | F10 | 70 | M10 | 102 | 17 | 17 | 22 | M8 | 126 | 148 |
| 150 | 6" | 200 | 8" | F12 | 85 | M12 | 125 | 22 | 22 | 28 | M8 | 155 | 182 |

Lined Ball Valves How to Order

| 2" — XLB | | — 1 | — 2 | — A | — 1 | — P6 | — 28 | — P16 | — H | — C | |
|-------------------------------|------|-----|-----|-----|-----|------|------|-------|-----|---|-------|
| Size & Figure No. | | | | | | | | | | Service | |
| 1/2" - 6" (Full Port) | | | | | | | | | | Chlorine | C |
| DN 15-150 (Full Port) | | | | | | | | | | Oxygen | O |
| 8" (Standard Port) | | | | | | | | | | Vacuum | V |
| | | | | | | | | | | General Service | Blank |
| | | | | | | | | | | Other** | X |
| Flange Standard | | | | | | | | | | Operator | |
| ASME Class 150 | 1 | | | | | | | | | No Operator | N |
| EN PN16 | 2 | | | | | | | | | Oval Handle | O |
| JIS 10Kg | 3 | | | | | | | | | Wrench with locking device | H |
| ASME Class 150 (Reduced Port) | 4 | | | | | | | | | Gear | G |
| | | | | | | | | | | Gear with locking device | GX |
| | | | | | | | | | | Actuator* | A |
| Face to Face | | | | | | | | | | Seat & SX Seal | |
| ASME B16.10 Short Pattern | 2 | | | | | | | | | Chemically Modified PTFE (CMP) | P16 |
| Long Pattern | 3 | | | | | | | | | Chemically Modified PTFE (CMP Antistatic) | P16AS |
| EN | 4 | | | | | | | | | UHMWPE | P8 |
| Packing Options | | | | | | | | | | Ball | |
| Adjustable | A | | | | | | | | | Standard Ball Duplex | 28 |
| | | | | | | | | | | Stainless Steel Lined | |
| Body | | | | | | | | | | | |
| Ductile Iron | 1 | | | | | | | | | | |
| Stainless Steel | 6 | | | | | | | | | | |
| Other | X | | | | | | | | | | |
| Liner | | | | | | | | | | | |
| PFA | P6 | | | | | | | | | | |
| PFA (anti-static) | P6AS | | | | | | | | | | |
| PVDF | P9 | | | | | | | | | | |



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