

DOUBLE OFFSET HIGH PERFORMANCE BUTTERFLY VALVES

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DOUBLE OFFSET HIGH PERFORMANCE BUTTERFLY VALVES

Standard Compliance/Certifications

STANDARD COMPLIANCE:

| | |
|---------------|---|
| ASME B16.10 | "Face to Face and End to End Dimensions of Valves" |
| ASME B16.34 | "Valves - Flanged, Threaded, and Welding End" |
| ASME B16.5 | "Pipe Flanges and Flanged Fittings" |
| ANSI/FCI 70-2 | "For Control Valve Seat Leakage" |
| MSS SP-25 | "Standard Marking System for Valves" |
| MSS SP-44 | "Steel Pipe Line Flanges" |
| MSS SP-55 | "Quality Standards for Steel Castings" |
| MSS SP-61 | "Pressure Testing of Steel Valves" |
| MSS SP-68 | "High Pressure Butterfly Valves with Offset Design" |
| API 598 | American Petroleum Institute - "Valve Inspection and Testing" |
| API 607 | American Petroleum Institute - "Fire Test for Soft Seated Valves" |
| API 609 | American Petroleum Institute - "Butterfly Valves: Double Flanged, Lug and Wafer Type" |
| BS 6755 | British Standard Testing of Valves Part 2. Specification for Fire Type-Testing Requirements |
| NSF/ANSI 61 | "Drinking Water System Components - Health Effects" (2" - 24", Stainless 215 & 230) |
| NSF/ANSI 372 | "Drinking Water System Components - Lead Content" (2" - 24", Stainless 215 & 230) |

CERTIFICATIONS:

CE marked and documented valves that conform to the European Pressure Equipment Directive (PED) 97/23/EC are available in ANSI Class 150/300, both standard and fire safe construction.

CRN No. 0C17459.5CL

SERVICES:

VACUUM SERVICE

Standard Apollo high performance butterfly valves are rated for 29" Hg vacuum.

STEAM SERVICE

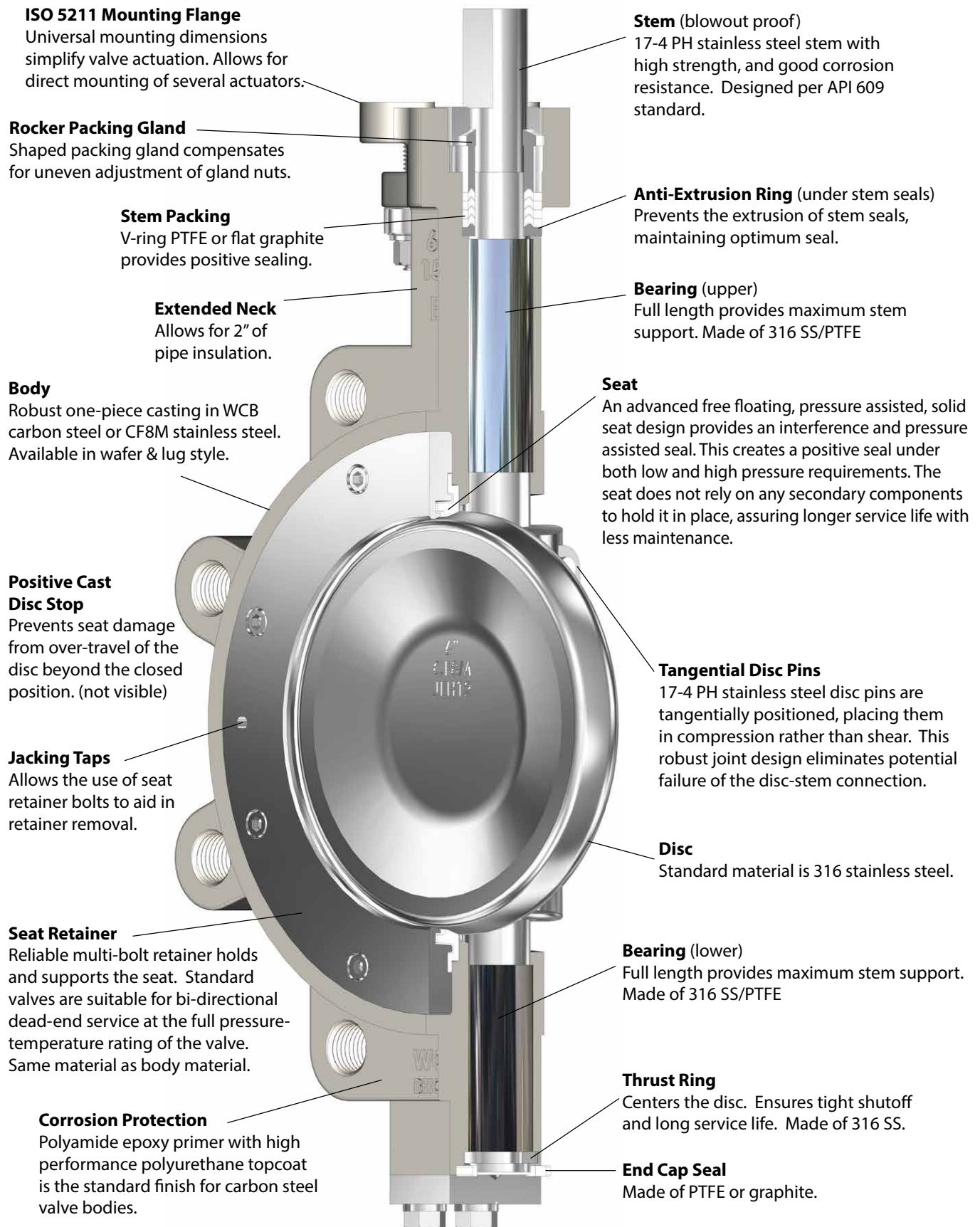
The Apollo high performance butterfly valve is well-suited for a wide range of steam applications. The application range is defined in the high performance butterfly valve pressure-temperature charts.



LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.

DOUBLE OFFSET HIGH PERFORMANCE BUTTERFLY VALVES

Advantages



SOFT SEAT EXPLODED VIEW

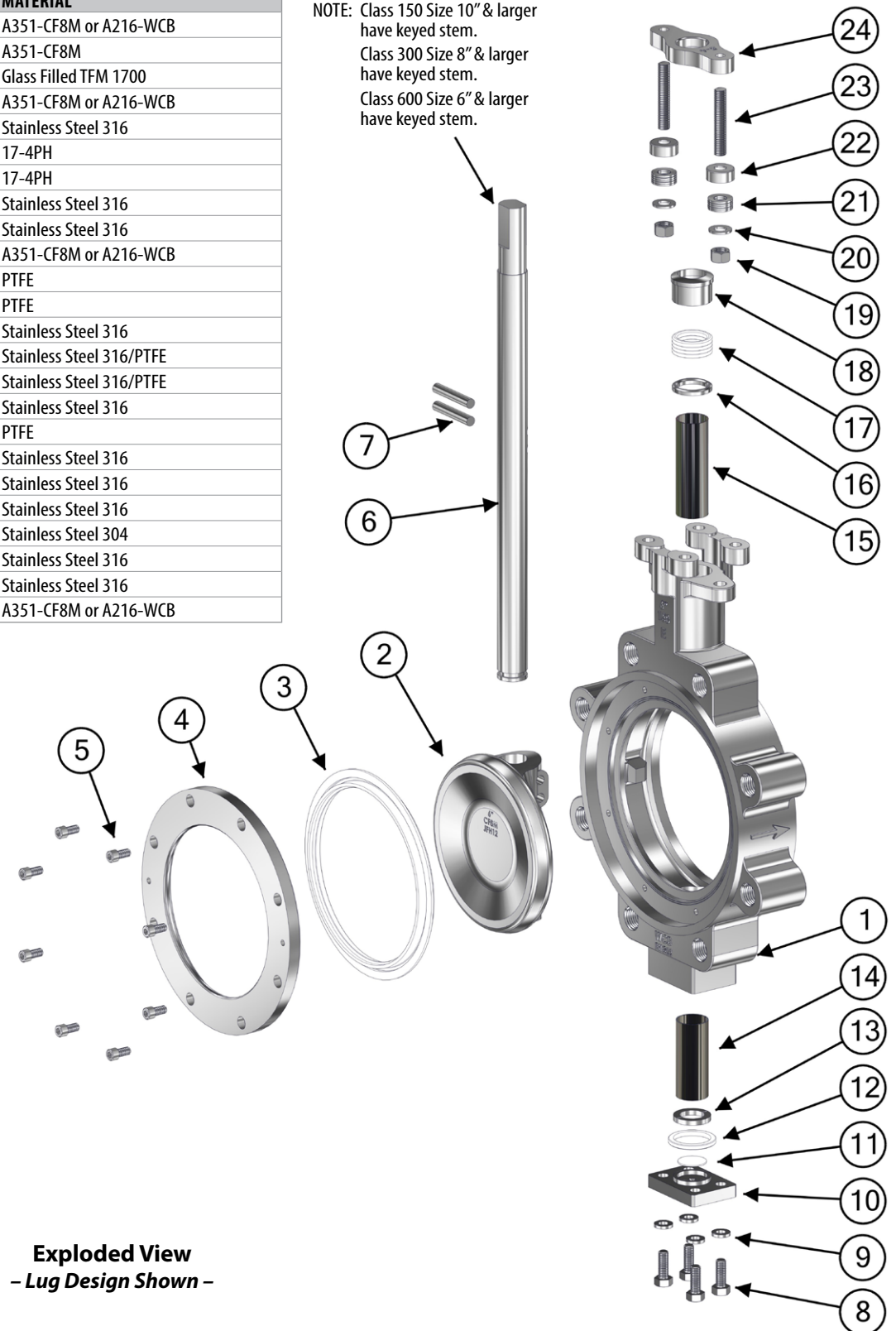
Double Offset High Performance Butterfly Valves

Class 150 - 2" through 24" | Class 300 - 2" through 24" | Class 600 - 3" through 12"

STANDARD MATERIAL LIST

| PART | MATERIAL | |
|------|----------------------|--------------------------|
| 1 | Body | A351-CF8M or A216-WCB |
| 2 | Disc | A351-CF8M |
| 3 | Seat | Glass Filled TFM 1700 |
| 4 | Seat Retainer | A351-CF8M or A216-WCB |
| 5 | Seat Retainer Bolt | Stainless Steel 316 |
| 6 | Stem | 17-4PH |
| 7 | Disc Pin | 17-4PH |
| 8 | End Cap Bolt | Stainless Steel 316 |
| 9 | Washer | Stainless Steel 316 |
| 10 | End Cap | A351-CF8M or A216-WCB |
| 11 | Spacer | PTFE |
| 12 | End Cap Seal | PTFE |
| 13 | Thrust Ring | Stainless Steel 316 |
| 14 | Lower Bearing | Stainless Steel 316/PTFE |
| 15 | Upper Bearing | Stainless Steel 316/PTFE |
| 16 | Anti-Extrusion Ring | Stainless Steel 316 |
| 17 | Stem Packing | PTFE |
| 18 | Packing Gland | Stainless Steel 316 |
| 19 | Gland Nut | Stainless Steel 316 |
| 20 | Washer | Stainless Steel 316 |
| 21 | Disc Spring | Stainless Steel 304 |
| 22 | Disc Spring Retainer | Stainless Steel 316 |
| 23 | Gland Studs | Stainless Steel 316 |
| 24 | Gland Plate | A351-CF8M or A216-WCB |

NOTE: Class 150 Size 10" & larger have keyed stem.
Class 300 Size 8" & larger have keyed stem.
Class 600 Size 6" & larger have keyed stem.



Exploded View
- Lug Design Shown -

FIRE SAFE SEAT EXPLODED VIEW

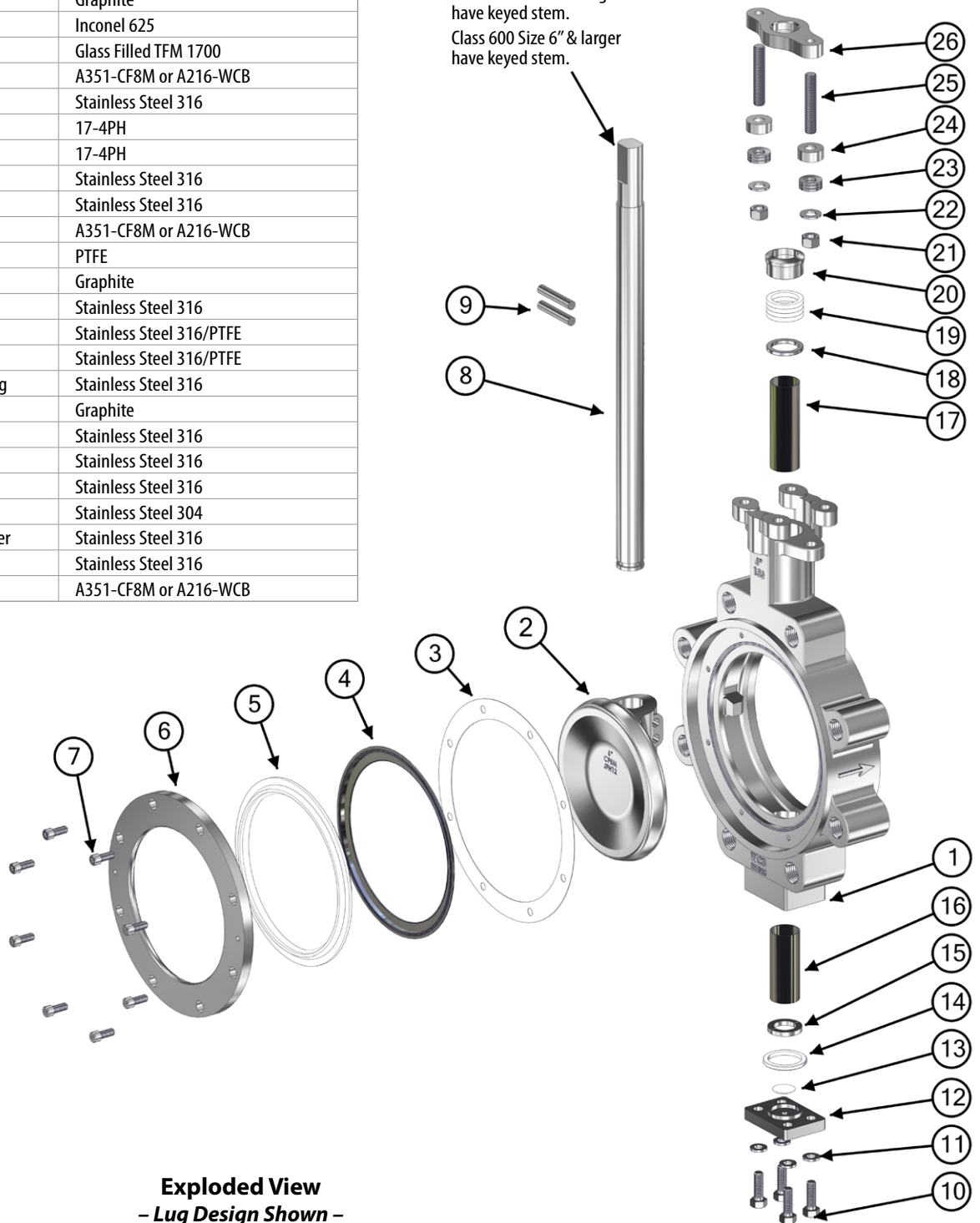
Double Offset High Performance Butterfly Valves

Class 150 - 2" through 24" | Class 300 - 2" through 24" | Class 600 - 3" through 12"

STANDARD MATERIAL LIST

| PART | PART | MATERIAL |
|------|----------------------|--------------------------|
| 1 | Body | A351-CF8M or A216-WCB |
| 2 | Disc | A351-CF8M |
| 3 | Body Seal | Graphite |
| 4 | Metal Seat | Inconel 625 |
| 5 | Seat | Glass Filled TFM 1700 |
| 6 | Seat Retainer | A351-CF8M or A216-WCB |
| 7 | Seat Retainer Bolt | Stainless Steel 316 |
| 8 | Stem | 17-4PH |
| 9 | Disc Pin | 17-4PH |
| 10 | End Cap Bolt | Stainless Steel 316 |
| 11 | Washer | Stainless Steel 316 |
| 12 | End Cap | A351-CF8M or A216-WCB |
| 13 | Spacer | PTFE |
| 14 | End Cap Seal | Graphite |
| 15 | Thrust Ring | Stainless Steel 316 |
| 16 | Lower Bearing | Stainless Steel 316/PTFE |
| 17 | Upper Bearing | Stainless Steel 316/PTFE |
| 18 | Anti-Extrusion Ring | Stainless Steel 316 |
| 19 | Stem Packing | Graphite |
| 20 | Packing Gland | Stainless Steel 316 |
| 21 | Gland Nut | Stainless Steel 316 |
| 22 | Washer | Stainless Steel 316 |
| 23 | Disc Spring | Stainless Steel 304 |
| 24 | Disc Spring Retainer | Stainless Steel 316 |
| 25 | Gland Studs | Stainless Steel 316 |
| 26 | Gland Plate | A351-CF8M or A216-WCB |

NOTE: Class 150 Size 10" & larger have keyed stem.
Class 300 Size 8" & larger have keyed stem.
Class 600 Size 6" & larger have keyed stem.

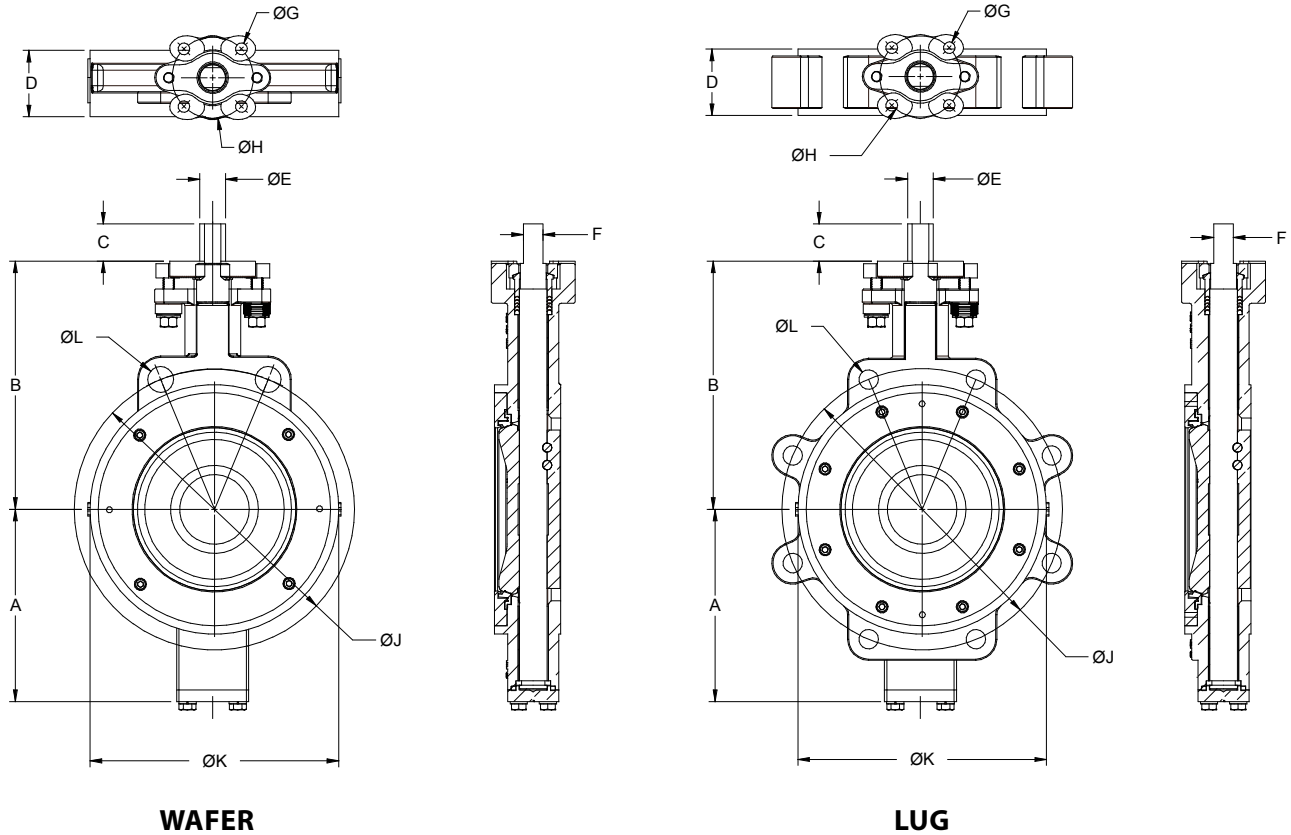


Exploded View
- Lug Design Shown -

215L/215W SERIES

Double Offset High Performance Butterfly Valves - Class 150 - 2" through 24"

For **STANDARD COMPLIANCE** and **ADVANTAGES** refer to pages 2-3.



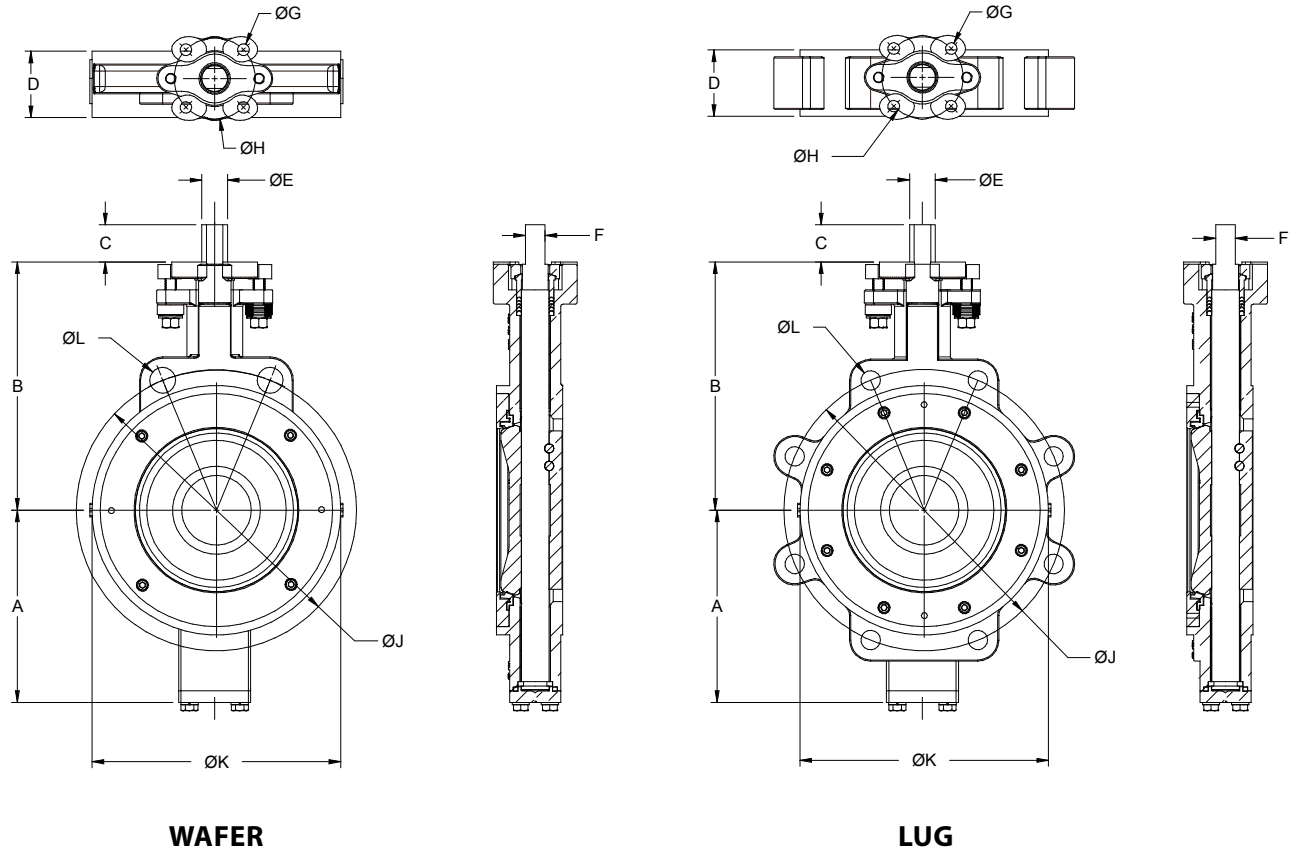
150 CLASS DOUBLE-D AND KEYED STEM

| SIZE INCHES | SIZE DN | DIMENSIONS IN INCHES | | | | | | | | | | | ØL Wafer | ØL Lug |
|-------------|---------|----------------------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|--------------------|---------------------|
| | | A | B | C | D | ØE | F | KEY | ØG | ØH | ØJ | ØK | | |
| 2 | 50 | 3.622 | 5.276 | 1.102 | 1.693 | 0.476 | 0.354 | -- | 0.394 | 2.756 | 4.75 | 4.09 | 2 X 0.669 | 4 X 5/8"-11UNC-2B |
| 2.5 | 65 | 4.016 | 5.787 | 1.102 | 1.850 | 0.555 | 0.433 | -- | 0.394 | 2.756 | 5.50 | 4.72 | 2 X 0.748 | 4 X 5/8"-11UNC-2B |
| 3 | 80 | 4.331 | 6.142 | 1.102 | 1.890 | 0.555 | 0.433 | -- | 0.394 | 2.756 | 6.00 | 4.92 | 2 X 0.748 | 4 X 5/8"-11UNC-2B |
| 4 | 100 | 4.764 | 7.008 | 1.26 | 2.126 | 0.713 | 0.551 | -- | 0.394 | 2.756 | 7.50 | 6.10 | 2 X 0.748 | 8 X 5/8"-11UNC-2B |
| 5 | 125 | 5.591 | 7.598 | 1.26 | 2.244 | 0.874 | 0.669 | -- | 0.394 | 2.756 | 8.50 | 7.24 | 2 X 0.874 | 8 X 3/4"-10UNC-2B |
| 6 | 150 | 6.496 | 8.386 | 1.259 | 2.244 | 0.874 | 0.669 | -- | 0.394 | 2.756 | 9.50 | 8.43 | 2 X 0.874 | 8 X 3/4"-10UNC-2B |
| 8 | 200 | 7.165 | 9.449 | 1.26 | 2.520 | 0.992 | 0.748 | -- | 0.551 | 4.921 | 11.75 | 10.55 | 2 X 0.874 | 8 X 3/4"-10UNC-2B |
| 10 | 250 | 8.386 | 10.827 | 2.165 | 2.795 | 1.102 | -- | 0.313 | 0.551 | 4.921 | 14.25 | 12.68 | 2 X 0.984 | 12 X 7/8"-9UNC-2B |
| 12 | 300 | 10.236 | 12.283 | 2.165 | 3.189 | 1.417 | -- | 0.375 | 0.551 | 4.921 | 17.00 | 14.92 | 2 X 0.984 | 12 X 7/8"-9UNC-2B |
| 14 | 350 | 11.811 | 13.307 | 2.559 | 3.622 | 1.654 | -- | 0.437 | 0.709 | 5.512 | 18.75 | 16.14 | 2 X 1.118 | 12 X 1"-8UNC-2B |
| 16 | 400 | 13.307 | 15.354 | 3.15 | 4.016 | 1.969 | -- | 0.500 | 0.866 | 6.496 | 21.25 | 18.43 | 2 X 1.118 | 16 X 1"-8UNC-2B |
| 18 | 450 | 14.803 | 16.732 | 3.149 | 4.488 | 1.969 | -- | 0.500 | 0.866 | 6.496 | 22.75 | 20.94 | 4 X 1.240 | 16 X 1-1/8"-8UNC-2B |
| 20 | 500 | 15.748 | 17.717 | 4.331 | 5.000 | 2.362 | -- | 0.625 | 0.866 | 6.496 | 25.00 | 22.99 | 4 X 1-1/8"-8UNC-2B | 20 X 1-1/8"-8UNC-2B |
| 24 | 600 | 18.622 | 20.787 | 4.331 | 6.063 | 2.559 | -- | 0.750 | 0.748 | 10.000 | 29.50 | 27.24 | 4 X 1-1/4"-8UNC-2B | 20 X 1-1/4"-8UNC-2B |

230L/230W SERIES

Double Offset High Performance Butterfly Valves - Class 300 - 2" through 24"

For **STANDARD COMPLIANCE** and **ADVANTAGES** refer to pages 2-3.



WAFER

LUG

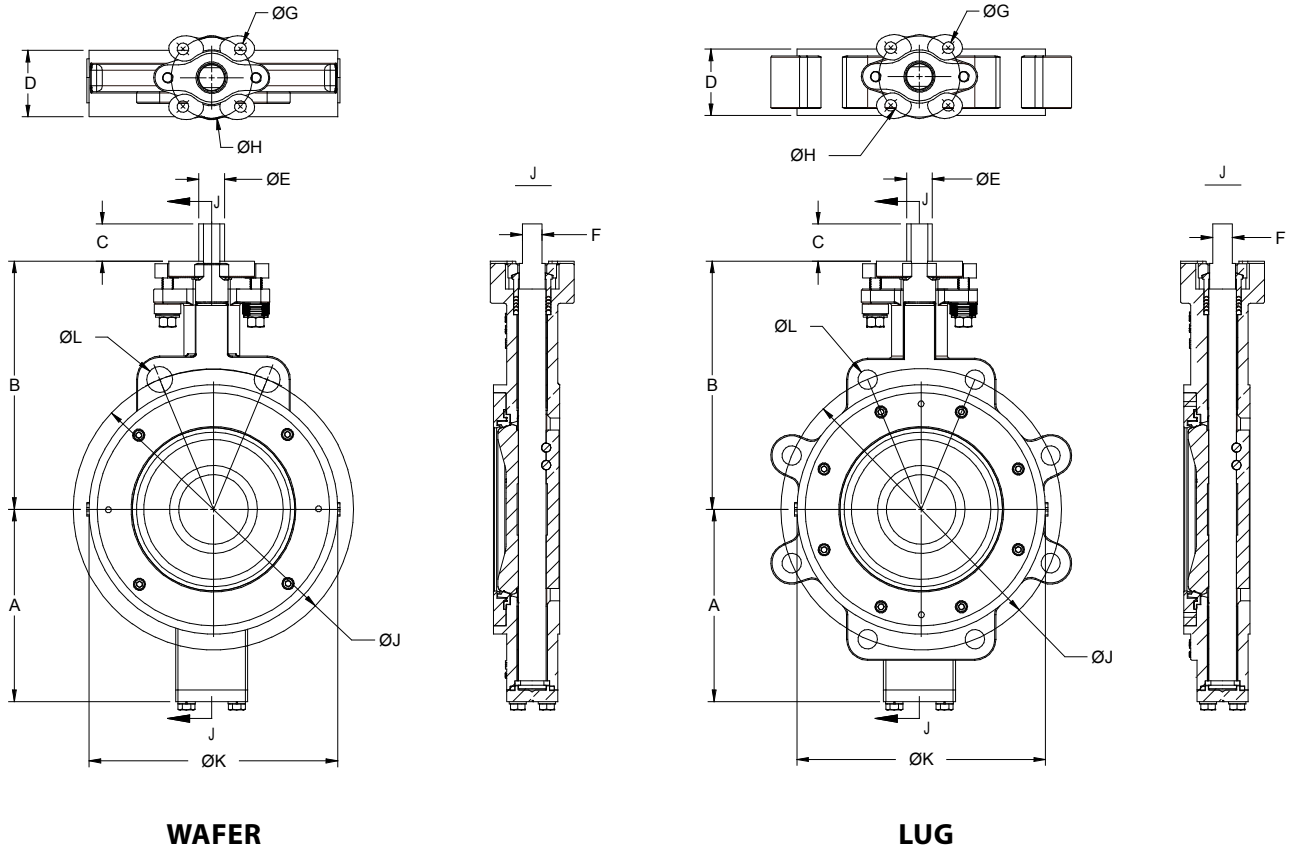
300 CLASS DOUBLE-D AND KEYED STEM

| SIZE INCHES | SIZE DN | DIMENSIONS IN INCHES | | | | | | | | | | | ØL Wafer | ØL Lug |
|-------------|---------|----------------------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------------------|---------------------|
| | | A | B | C | D | ØE | F | KEY | ØG | ØH | ØJ | ØK | | |
| 2 | 50 | 3.622 | 5.276 | 1.102 | 1.693 | 0.476 | 0.354 | -- | 0.394 | 2.756 | 5.00 | 4.17 | 2 X 0.709 | 8 X 5/8"-11 UNC-2B |
| 2.5 | 65 | 4.016 | 5.787 | 1.102 | 1.85 | 0.555 | 0.433 | -- | 0.394 | 2.756 | 5.88 | 4.72 | 2 X 0.874 | 8 X 3/4"-10 UNC-2B |
| 3 | 80 | 4.331 | 6.142 | 1.102 | 1.89 | 0.555 | 0.433 | -- | 0.394 | 2.756 | 6.62 | 4.92 | 2 X 0.874 | 8 X 3/4"-10 UNC-2B |
| 4 | 100 | 4.764 | 7.008 | 1.260 | 2.126 | 0.713 | 0.551 | -- | 0.394 | 2.756 | 7.88 | 6.10 | 2 X 0.874 | 8 X 3/4"-10 UNC-2B |
| 5 | 125 | 5.591 | 7.598 | 1.260 | 2.244 | 0.874 | 0.669 | -- | 0.472 | 4.016 | 9.25 | 7.24 | 2 X 0.874 | 8 X 3/4"-10 UNC-2B |
| 6 | 150 | 6.496 | 8.386 | 1.259 | 2.323 | 0.874 | 0.669 | -- | 0.472 | 4.016 | 10.62 | 8.43 | 2 X 0.874 | 12 X 3/4"-10 UNC-2B |
| 8 | 200 | 8.268 | 10.157 | 2.165 | 2.874 | 1.102 | -- | 0.313 | 0.551 | 4.921 | 13.00 | 10.55 | 2 X 0.984 | 12 X 7/8"-9 UNC-2B |
| 10 | 250 | 9.449 | 11.417 | 2.165 | 3.268 | 1.417 | -- | 0.375 | 0.551 | 4.921 | 15.25 | 12.72 | 4 X 1"-8UNC-2B | 16 X 1"-8 UNC-2B |
| 12 | 300 | 10.63 | 12.795 | 2.559 | 3.662 | 1.654 | -- | 0.437 | 0.709 | 5.512 | 17.75 | 15.04 | 4 X 1-1/8"-8UN-2B | 16 X 1-1/8"-8 UN-2B |
| 14 | 350 | 12.756 | 14.764 | 3.15 | 4.606 | 1.969 | -- | 0.500 | 0.866 | 6.496 | 20.25 | 16.14 | 4 X 1-1/8"-8UN-2B | 20 X 1-1/8"-8 UN-2B |
| 16 | 400 | 14.37 | 16.732 | 3.149 | 5.236 | 1.969 | -- | 0.500 | 0.866 | 6.496 | 22.50 | 18.43 | 4 X 1-1/4"-8UN-2B | 20 X 1-1/4"-8 UN-2B |
| 18 | 450 | 16.043 | 18.209 | 4.331 | 5.866 | 2.362 | -- | 0.625 | 0.748 | 10.000 | 24.75 | 20.94 | 4 X 1-1/4"-8UN-2B | 24 X 1-1/4"-8 UN-2B |
| 20 | 500 | 17.795 | 19.882 | 4.331 | 6.260 | 2.835 | -- | 0.750 | 0.748 | 10.000 | 27.00 | 22.99 | 4 X 1-1/4"-8UN-2B | 24 X 1-1/4"-8 UN-2B |
| 24 | 600 | 20.315 | 22.835 | 4.331 | 7.126 | 3.150 | -- | 0.875 | 0.748 | 10.000 | 32.00 | 27.24 | 4 X 1-1/2"-8UN-2B | 24 X 1-1/2"-8 UN-2B |

260L/260W SERIES

Double Offset High Performance Butterfly Valves - Class 600 - 3" through 12"

For **STANDARD COMPLIANCE** and **ADVANTAGES** refer to pages 2-3.



WAFER

LUG

600 CLASS DOUBLE-D AND KEYED STEM

| SIZE INCHES | SIZE DN | DIMENSIONS IN INCHES | | | | | | | | | | | ØL Wafer | ØL Lug |
|-------------|---------|----------------------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------------------|---------------------|
| | | A | B | C | D | ØE | F | KEY | ØG | ØH | ØJ | ØK | | |
| 3 | 80 | 4.705 | 6.496 | 1.260 | 2.126 | 0.713 | 0.551 | -- | 0.394 | 2.756 | 6.62 | 5.71 | 2 X 0.866 | 8 X 3/4"-10 UNC-2B |
| 4 | 100 | 5.748 | 7.717 | 1.260 | 2.520 | 0.874 | 0.669 | -- | 0.551 | 4.921 | 8.50 | 6.85 | 2 X 0.984 | 8 X 7/8"-9 UNC-2B |
| 6 | 150 | 7.953 | 9.724 | 2.165 | 3.071 | 1.417 | -- | 0.375 | 0.551 | 4.921 | 11.50 | 9.45 | 4 X 1"-8UNC-2B | 12 X 1"-8 UNC-2B |
| 8 | 200 | 9.528 | 11.614 | 3.150 | 4.016 | 1.890 | -- | 0.500 | 0.906 | 6.496 | 13.75 | 11.65 | 4 X 1-1/8"-8UN-2B | 12 X 1-1/8"-8 UN-2B |
| 10 | 250 | 11.024 | 13.386 | 3.150 | 4.606 | 1.969 | -- | 0.500 | 0.906 | 6.496 | 17.00 | 13.86 | 4 X 1-1/4"-8UN-2B | 16 X 1-1/4"-8 UN-2B |
| 12 | 300 | 12.913 | 15.354 | 4.331 | 5.512 | 2.362 | -- | 0.625 | 0.709 | 10.000 | 19.25 | 16.34 | 4 X 1-1/4"-8UN-2B | 20 X 1-1/4"-8 UN-2B |

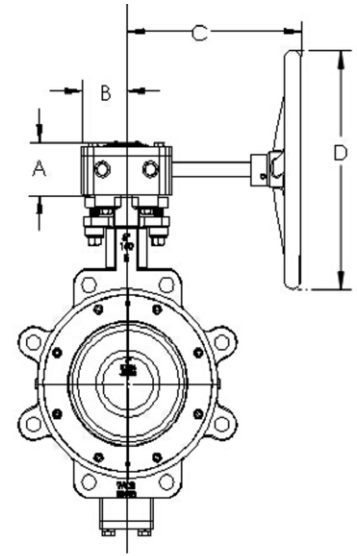
(5" size not available)

HANDLE & GEAR DIMENSIONS – SOFT SEAT

Double Offset High Performance Butterfly Valves

Class 150 –Soft Seat

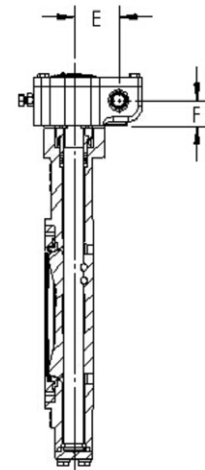
| Valve Size | | Gear Ratio | Dimensions in Inches | | | | | | |
|------------|-----|------------|----------------------|------|-------|-------|------|------|-------|
| Inches | DN | | A | B | C | D | E | F | G |
| 2" | 50 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 2.5" | 65 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 3" | 80 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 4" | 100 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 12.82 |
| 5" | 125 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 12.82 |
| 6" | 150 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 12.82 |
| 8" | 200 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 | — |
| 10" | 250 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 | — |
| 12" | 300 | 34:1 | 3.43 | 2.50 | 12.87 | 11.81 | 2.80 | 1.59 | — |
| 14" | 350 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 16" | 400 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 18" | 450 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 20" | 500 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 24" | 600 | 52:1 | 4.96 | 4.92 | 13.11 | 15.75 | 5.12 | 2.40 | — |



with Manual Gear

Class 300 –Soft Seat

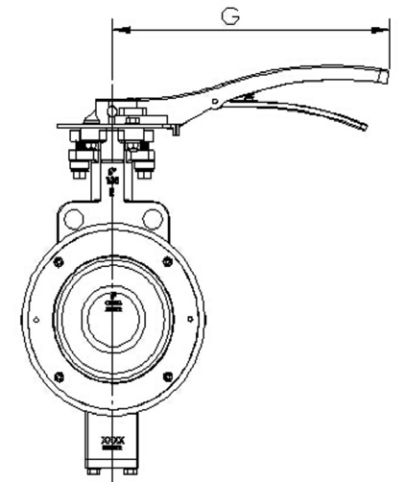
| Valve Size | | Gear Ratio | Dimensions in Inches | | | | | | |
|------------|-----|------------|----------------------|------|-------|-------|------|------|-------|
| Inches | DN | | A | B | C | D | E | F | G |
| 2" | 50 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 2.5" | 65 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 3" | 80 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 4" | 100 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 12.82 |
| 5" | 125 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 | 12.82 |
| 6" | 150 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 | 12.82 |
| 8" | 200 | 34:1 | 3.43 | 2.50 | 12.87 | 11.81 | 2.80 | 1.59 | — |
| 10" | 250 | 34:1 | 3.43 | 2.50 | 12.87 | 11.81 | 2.80 | 1.59 | — |
| 12" | 300 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 14" | 350 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 16" | 400 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 18" | 450 | 52:1 | 4.96 | 4.92 | 13.11 | 15.75 | 5.12 | 2.40 | — |
| 20" | 500 | 832:1 | 8.86 | 5.91 | 15.04 | 17.72 | 9.02 | 3.23 | — |
| 24" | 600 | 832:1 | 8.86 | 5.91 | 15.04 | 17.72 | 9.02 | 3.23 | — |



with Manual Gear

Class 600 –Soft Seat

| Valve Size | | Gear Ratio | Dimensions in Inches | | | | | |
|------------|-----|------------|----------------------|------|-------|-------|------|------|
| Inches | DN | | A | B | C | D | E | F |
| 3" | 80 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 |
| 4" | 100 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 |
| 6" | 150 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 |
| 8" | 200 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 |
| 10" | 250 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 |
| 12" | 300 | 52:1 | 4.96 | 4.92 | 13.11 | 15.75 | 5.12 | 2.40 |



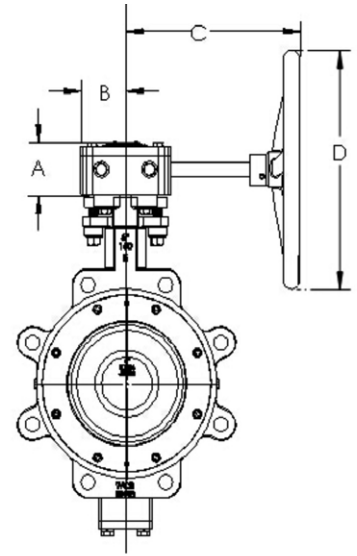
with Handle

HANDLE & GEAR DIMENSIONS – FIRE SAFE SEAT

Double Offset High Performance Butterfly Valves

Class 150 – Fire Safe Seat

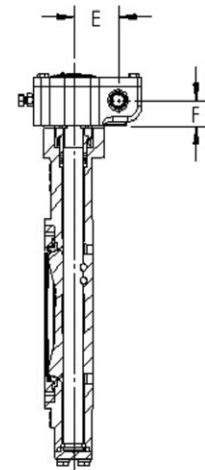
| Valve Size | | Gear Ratio | Dimensions in Inches | | | | | | |
|------------|-----|------------|----------------------|------|-------|-------|------|------|-------|
| Inches | DN | | A | B | C | D | E | F | G |
| 2" | 50 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 2.5" | 65 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 3" | 80 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 4" | 100 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 12.82 |
| 5" | 125 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 12.82 |
| 6" | 150 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 12.82 |
| 8" | 200 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 | — |
| 10" | 250 | 34:1 | 3.43 | 2.50 | 12.87 | 11.81 | 2.80 | 1.59 | — |
| 12" | 300 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 14" | 350 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 16" | 400 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 18" | 450 | 52:1 | 4.96 | 4.92 | 13.11 | 15.75 | 5.12 | 2.40 | — |
| 20" | 500 | 52:1 | 4.96 | 4.92 | 13.11 | 15.75 | 5.12 | 2.40 | — |
| 24" | 600 | 832:1 | 8.86 | 5.91 | 15.04 | 17.72 | 9.02 | 3.23 | — |



with Manual Gear

Class 300 – Fire Safe Seat

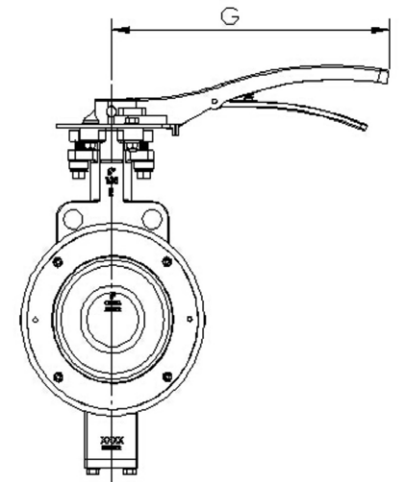
| Valve Size | | Gear Ratio | Dimensions in Inches | | | | | | |
|------------|-----|------------|----------------------|------|-------|-------|------|------|-------|
| Inches | DN | | A | B | C | D | E | F | G |
| 2" | 50 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 2.5" | 65 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 3" | 80 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 8.82 |
| 4" | 100 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 | 12.82 |
| 5" | 125 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 | 12.82 |
| 6" | 150 | 37:1 | 2.76 | 2.11 | 10.94 | 11.81 | 2.09 | 1.50 | 12.82 |
| 8" | 200 | 34:1 | 3.43 | 2.50 | 12.87 | 11.81 | 2.80 | 1.59 | — |
| 10" | 250 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 12" | 300 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 | — |
| 14" | 350 | 52:1 | 4.96 | 4.92 | 13.11 | 15.75 | 5.12 | 2.40 | — |
| 16" | 400 | 52:1 | 4.96 | 4.92 | 13.11 | 15.75 | 5.12 | 2.40 | — |
| 18" | 450 | 832:1 | 8.86 | 5.91 | 15.04 | 17.72 | 9.02 | 3.23 | — |
| 20" | 500 | 832:1 | 8.86 | 5.91 | 15.04 | 17.72 | 9.02 | 3.23 | — |
| 24" | 600 | | | | | | | | |



with Manual Gear

Class 600 – Fire Safe Seat

| Valve Size | | Gear Ratio | Dimensions in Inches | | | | | |
|------------|-----|------------|----------------------|------|-------|-------|------|------|
| Inches | DN | | A | B | C | D | E | F |
| 3" | 80 | 37:1 | 2.24 | 2.11 | 7.87 | 11.81 | 2.09 | 1.14 |
| 4" | 100 | 34:1 | 3.43 | 2.50 | 12.87 | 11.81 | 2.80 | 1.59 |
| 6" | 150 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 |
| 8" | 200 | 55:1 | 4.06 | 4.39 | 13.07 | 15.75 | 4.11 | 1.93 |
| 10" | 250 | 52:1 | 4.96 | 4.92 | 13.11 | 15.75 | 5.12 | 2.40 |
| 12" | 300 | 832:1 | 8.86 | 5.91 | 15.04 | 17.72 | 9.02 | 3.23 |



with Handle

FLOW DATA

Double Offset High Performance Butterfly Valves

Cv values (US gallons per minute) represent the flow of 60°F water through a 100% open valve at a pressure drop of 1 psi.

The metric equivalent, Kv, is the flow of water at 16°C through the valve in cubic meters per hour at a pressure drop of 1 kg/cm². To convert Cv to Kv, multiply the Cv by 0.8569.

Rated Flow Coefficient (Cv) – 215L/215W

| Size | | Class | Angle of Disc Opening (Degrees) | | | | | | | | |
|--------|-----|-------|---------------------------------|------|------|------|------|-------|-------|-------|-------|
| Inches | DN | | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| 2" | 50 | 150 | 2 | 5 | 12 | 18 | 30 | 45 | 62 | 81 | 89 |
| 2.5" | 65 | 150 | 2.5 | 8 | 20 | 32 | 50 | 74 | 103 | 134 | 145 |
| 3" | 80 | 150 | 4 | 13 | 30 | 46 | 76 | 108 | 156 | 194 | 212 |
| 4" | 100 | 150 | 8 | 23 | 53 | 84 | 136 | 192 | 279 | 347 | 376 |
| 5" | 125 | 150 | 15 | 43 | 102 | 160 | 261 | 371 | 539 | 669 | 728 |
| 6" | 150 | 150 | 26 | 67 | 154 | 242 | 391 | 463 | 808 | 1004 | 1091 |
| 8" | 200 | 150 | 53 | 126 | 296 | 466 | 761 | 1077 | 1567 | 1945 | 2134 |
| 10" | 250 | 150 | 82 | 199 | 461 | 728 | 1188 | 1683 | 2444 | 3041 | 3298 |
| 12" | 300 | 150 | 112 | 272 | 636 | 994 | 1630 | 2309 | 3346 | 4161 | 4559 |
| 14" | 350 | 150 | 145 | 342 | 800 | 1258 | 2063 | 2921 | 4237 | 5268 | 5687 |
| 16" | 400 | 150 | 195 | 464 | 1088 | 1708 | 2791 | 3958 | 5739 | 7135 | 7710 |
| 18" | 450 | 150 | 252 | 600 | 1404 | 2204 | 3608 | 5108 | 7416 | 9215 | 9996 |
| 20" | 500 | 150 | 323 | 778 | 1813 | 2848 | 4662 | 6606 | 9585 | 11914 | 12931 |
| 24" | 600 | 150 | 472 | 1232 | 2878 | 4519 | 7393 | 10475 | 15199 | 18900 | 20551 |

Rated Flow Coefficient (Cv) – 230L/230W

| Size | | Class | Angle of Disc Opening (Degrees) | | | | | | | | |
|--------|-----|-------|---------------------------------|------|------|------|------|------|-------|-------|-------|
| Inches | DN | | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| 2" | 50 | 300 | 2 | 5 | 12 | 18 | 30 | 45 | 62 | 81 | 89 |
| 2.5" | 65 | 300 | 2.5 | 8 | 20 | 32 | 50 | 74 | 103 | 134 | 145 |
| 3" | 80 | 300 | 4 | 13 | 30 | 46 | 76 | 108 | 156 | 194 | 212 |
| 4" | 100 | 300 | 8 | 23 | 53 | 84 | 136 | 192 | 279 | 347 | 376 |
| 5" | 125 | 300 | 15 | 43 | 102 | 160 | 261 | 371 | 539 | 669 | 728 |
| 6" | 150 | 300 | 25 | 62 | 145 | 227 | 371 | 526 | 764 | 950 | 1034 |
| 8" | 200 | 300 | 44 | 107 | 252 | 398 | 650 | 917 | 1334 | 1659 | 1843 |
| 10" | 250 | 300 | 73 | 170 | 403 | 631 | 1033 | 1460 | 2119 | 2638 | 2910 |
| 12" | 300 | 300 | 100 | 238 | 551 | 865 | 1420 | 2009 | 2917 | 3624 | 3895 |
| 14" | 350 | 300 | 128 | 309 | 717 | 1126 | 1843 | 2613 | 3786 | 4707 | 5130 |
| 16" | 400 | 300 | 166 | 395 | 922 | 1446 | 2368 | 3352 | 4869 | 6053 | 6562 |
| 18" | 450 | 300 | 233 | 561 | 1306 | 2057 | 3363 | 4764 | 6911 | 8593 | 9310 |
| 20" | 500 | 300 | 284 | 686 | 1598 | 2510 | 4113 | 5824 | 8452 | 10506 | 11378 |
| 24" | 600 | 300 | 413 | 1078 | 2513 | 3947 | 6460 | 9153 | 13281 | 16511 | 17955 |

Rated Flow Coefficient (Cv) – 260L/260W

| Size | | Class | Angle of Disc Opening (Degrees) | | | | | | | | |
|--------|-----|-------|---------------------------------|-----|-----|-----|-----|------|------|------|------|
| Inches | DN | | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| 3" | 80 | 600 | 3 | 9 | 21 | 32 | 53 | 75 | 110 | 136 | 148 |
| 4" | 100 | 600 | 5 | 15 | 33 | 52 | 85 | 122 | 176 | 220 | 238 |
| 6" | 150 | 600 | 16 | 40 | 93 | 147 | 242 | 341 | 496 | 616 | 668 |
| 8" | 200 | 600 | 32 | 75 | 171 | 268 | 429 | 621 | 904 | 1124 | 1177 |
| 10" | 250 | 600 | 52 | 124 | 294 | 464 | 757 | 1071 | 1555 | 1931 | 2060 |
| 12" | 300 | 600 | 70 | 165 | 379 | 599 | 978 | 1387 | 2011 | 2500 | 2695 |

This chart should be used as a general guide.

Cv = the volume of water in U.S. gallons per minute that will pass through a given valve opening with a pressure drop of 1 psig at room temperature.



TORQUE CONSTANTS

Double Offset High Performance Butterfly Valves

Soft Seat – Torque Rating (In-Lbs)

| SIZE | PSIG | CLASS 150 | | | | CLASS 300 | | | | | CLASS 600 | | | | | |
|------|--------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| | | $\Delta P=100$ | $\Delta P=150$ | $\Delta P=200$ | $\Delta P=285$ | $\Delta P=100$ | $\Delta P=150$ | $\Delta P=200$ | $\Delta P=285$ | $\Delta P=740$ | $\Delta P=150$ | $\Delta P=500$ | $\Delta P=800$ | $\Delta P=1000$ | $\Delta P=1200$ | $\Delta P=1480$ |
| 2" | in-lbs | 204 | 230 | 266 | 332 | 248 | 332 | 381 | 425 | 531 | – | – | – | – | – | – |
| 2.5" | in-lbs | 239 | 283 | 319 | 398 | 301 | 398 | 443 | 478 | 575 | – | – | – | – | – | – |
| 3" | in-lbs | 257 | 301 | 345 | 434 | 327 | 434 | 487 | 540 | 664 | 407 | 513 | 841 | 974 | 1,106 | 1,283 |
| 4" | in-lbs | 398 | 469 | 531 | 664 | 469 | 664 | 761 | 867 | 1,106 | 620 | 841 | 1,540 | 1,823 | 2,106 | 2,487 |
| 5" | in-lbs | 558 | 655 | 743 | 929 | 620 | 885 | 1,062 | 1,239 | 1,664 | – | – | – | – | – | – |
| 6" | in-lbs | 726 | 850 | 974 | 1,212 | 858 | 1,221 | 1,505 | 1,779 | 2,460 | 1,912 | 2,673 | 5,080 | 6,045 | 7,009 | 8,319 |
| 8" | in-lbs | 1,328 | 1,549 | 1,770 | 2,213 | 1,646 | 2,354 | 2,921 | 3,487 | 4,868 | 3,177 | 4,437 | 8,434 | 10,036 | 11,638 | 13,806 |
| 10" | in-lbs | 2,213 | 2,575 | 2,947 | 3,682 | 2,575 | 3,682 | 4,691 | 5,699 | 8,142 | 4,788 | 6,682 | 12,709 | 15,116 | 17,523 | 20,798 |
| 12" | in-lbs | 2,867 | 3,345 | 3,823 | 4,779 | 3,629 | 5,177 | 6,522 | 7,877 | 11,151 | – | – | – | – | – | – |
| 14" | in-lbs | 4,938 | 5,761 | 6,584 | 8,231 | 6,053 | 8,646 | 11,186 | 13,735 | 19,913 | – | – | – | – | – | – |
| 16" | in-lbs | 6,903 | 8,054 | 9,204 | 11,505 | 8,461 | 12,080 | 14,788 | 17,496 | 24,072 | – | – | – | – | – | – |
| 18" | in-lbs | 9,717 | 11,337 | 12,956 | 16,196 | 11,903 | 17,010 | 20,461 | 23,913 | 32,303 | – | – | – | – | – | – |
| 20" | in-lbs | 12,930 | 15,089 | 17,240 | 21,550 | 15,842 | 22,629 | 26,816 | 30,993 | 41,153 | – | – | – | – | – | – |
| 24" | in-lbs | 19,859 | 23,169 | 26,479 | 33,099 | 24,329 | 34,754 | 40,595 | 46,436 | 60,623 | – | – | – | – | – | – |

Fire Safe Seat – Torque Rating (In-Lbs)

| SIZE | PSIG | CLASS 150 | | | | CLASS 300 | | | | | CLASS 600 | | | | | |
|------|--------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| | | $\Delta P=100$ | $\Delta P=150$ | $\Delta P=200$ | $\Delta P=285$ | $\Delta P=100$ | $\Delta P=150$ | $\Delta P=200$ | $\Delta P=285$ | $\Delta P=740$ | $\Delta P=150$ | $\Delta P=500$ | $\Delta P=800$ | $\Delta P=1000$ | $\Delta P=1200$ | $\Delta P=1480$ |
| 2" | in-lbs | 434 | 504 | 584 | 726 | 504 | 726 | 770 | 814 | 929 | – | – | – | – | – | – |
| 2.5" | in-lbs | 460 | 540 | 620 | 770 | 540 | 770 | 823 | 885 | 1,018 | – | – | – | – | – | – |
| 3" | in-lbs | 584 | 681 | 779 | 974 | 681 | 974 | 1,035 | 1,097 | 1,257 | 866 | 1,208 | 1,549 | 1,788 | 2,027 | 2,354 |
| 4" | in-lbs | 708 | 832 | 947 | 1,186 | 832 | 1,186 | 1,248 | 1,319 | 1,478 | 1,402 | 1,887 | 2,372 | 2,797 | 3,230 | 3,814 |
| 5" | in-lbs | 965 | 1,124 | 1,283 | 1,602 | 1,133 | 1,620 | 1,894 | 2,177 | 2,850 | – | – | – | – | – | – |
| 6" | in-lbs | 1,345 | 1,566 | 1,788 | 2,239 | 1,584 | 2,257 | 2,531 | 2,805 | 3,478 | 7,077 | 8,455 | 9,832 | 11,691 | 13,558 | 16,089 |
| 8" | in-lbs | 2,089 | 2,443 | 2,788 | 3,487 | 2,513 | 3,584 | 4,160 | 4,735 | 6,133 | 11,400 | 13,616 | 15,833 | 18,833 | 21,833 | 25,913 |
| 10" | in-lbs | 3,283 | 3,832 | 4,381 | 5,478 | 4,027 | 5,753 | 6,673 | 7,602 | 9,841 | 17,542 | 20,949 | 24,355 | 28,975 | 33,595 | 39,869 |
| 12" | in-lbs | 5,168 | 6,036 | 6,894 | 8,620 | 6,230 | 8,894 | 10,470 | 12,045 | 15,877 | – | – | – | – | – | – |
| 14" | in-lbs | 6,912 | 8,062 | 9,213 | 11,514 | 8,363 | 11,948 | 14,426 | 16,904 | 22,913 | – | – | – | – | – | – |
| 16" | in-lbs | 8,770 | 10,231 | 11,700 | 14,620 | 10,655 | 15,222 | 18,682 | 22,152 | 30,559 | – | – | – | – | – | – |
| 18" | in-lbs | 12,567 | 14,664 | 16,762 | 20,948 | 15,178 | 21,683 | 27,541 | 33,409 | 47,640 | – | – | – | – | – | – |
| 20" | in-lbs | 16,859 | 19,674 | 22,479 | 28,099 | 20,196 | 28,851 | 37,993 | 47,126 | 69,322 | – | – | – | – | – | – |
| 24" | in-lbs | 25,072 | 29,249 | 33,426 | 41,781 | 30,046 | 42,923 | 56,622 | 70,331 | 103,607 | – | – | – | – | – | – |

Under certain conditions, hydrodynamic torque can meet or exceed seating and unseating torques. When designing valve systems, hydrodynamic torque must be considered to help ensure correct selection of actuation.

WEIGHTS

Double Offset High Performance Butterfly Valves

Soft Seat

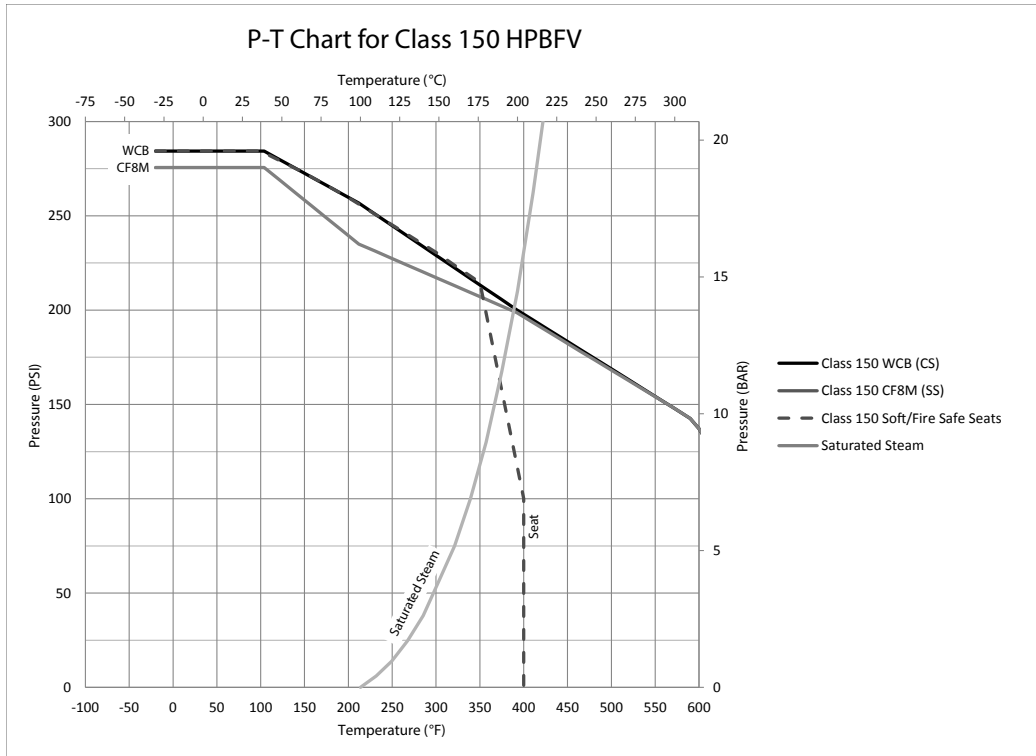
| Valve Size | | Class 150 | | Class 300 | | Class 600 | |
|------------|-----|-----------------|-----------------|-----------------|-------------------|-----------------|-----------------|
| Inches | DN | Wafer Lbs (kg) | Lug Lbs (kg) | Wafer Lbs (kg) | Lug Lbs (kg) | Wafer Lbs (kg) | Lug Lbs (kg) |
| 2" | 50 | 9.22 (4.18) | 10.92 (4.95) | 9.22 (4.18) | 12.17 (5.52) | — | — |
| 2.5" | 65 | 11.72 (5.31) | 12.97 (5.88) | 11.72 (5.31) | 15.42 (6.99) | — | — |
| 3" | 80 | 12.38 (5.61) | 14.19 (6.44) | 12.38 (5.61) | 17.73 (8.04) | 18.17 (8.24) | 22.46 (10.19) |
| 4" | 100 | 17.94 (8.14) | 23.48 (10.65) | 18.03 (8.18) | 25.66 (11.64) | 31.54 (14.31) | 41.10 (18.64) |
| 5" | 125 | 23.96 (10.87) | 31.02 (14.07) | 25.32 (11.48) | 34.90 (15.83) | — | — |
| 6" | 150 | 30.63 (13.89) | 37.97 (17.22) | 32.43 (14.71) | 46.69 (21.18) | 71.37 (32.37) | 90.63 (41.11) |
| 8" | 200 | 46.73 (21.20) | 56.31 (25.54) | 60.04 (27.23) | 82.75 (37.53) | 136.63 (61.98) | 167.13 (75.81) |
| 10" | 250 | 68.46 (31.05) | 86.38 (39.18) | 96.80 (43.91) | 129.50 (58.74) | 200.19 (90.80) | 279.76 (126.90) |
| 12" | 300 | 104.23 (47.28) | 132.98 (60.32) | 143.35 (65.02) | 189.02 (85.74) | 325.04 (147.43) | 452.34 (205.18) |
| 14" | 350 | 138.74 (62.93) | 183.25 (83.12) | 217.99 (98.88) | 324.95 (147.39) | — | — |
| 16" | 400 | 206.87 (93.83) | 273.63 (124.12) | 309.05 (140.18) | 443.93 (201.37) | — | — |
| 18" | 450 | 278.85 (126.48) | 340.61 (154.50) | 438.71 (199.00) | 634.68 (287.89) | — | — |
| 20" | 500 | 357.19 (162.02) | 440.75 (199.92) | 574.96 (260.80) | 782.73 (355.04) | — | — |
| 24" | 600 | 574.27 (260.49) | 709.38 (321.77) | 840.18 (381.10) | 1,201.91 (545.18) | — | — |

Fire Safe Seat

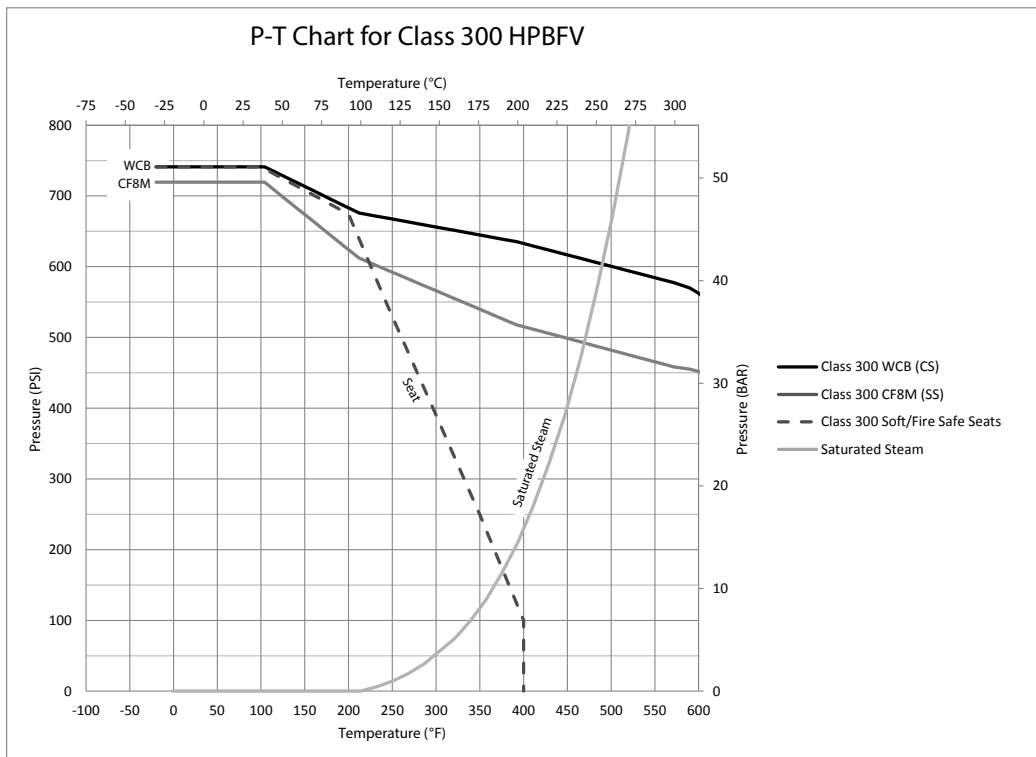
| Valve Size | | Class 150 | | Class 300 | | Class 600 | |
|------------|-----|-----------------|-----------------|-----------------|-------------------|-----------------|-----------------|
| Inches | DN | Wafer Lbs (kg) | Lug Lbs (kg) | Wafer Lbs (kg) | Lug Lbs (kg) | Wafer Lbs (kg) | Lug Lbs (kg) |
| 2" | 50 | 9.27 (4.20) | 10.98 (4.98) | 9.27 (4.20) | 12.22 (5.54) | — | — |
| 2.5" | 65 | 11.78 (5.34) | 13.03 (5.91) | 11.78 (5.34) | 15.48 (7.02) | — | — |
| 3" | 80 | 12.44 (5.64) | 14.26 (6.47) | 12.44 (5.64) | 17.81 (8.08) | 18.26 (8.28) | 22.57 (10.24) |
| 4" | 100 | 18.03 (8.18) | 23.60 (10.70) | 18.10 (8.21) | 25.76 (11.69) | 31.70 (14.38) | 41.31 (18.74) |
| 5" | 125 | 24.08 (10.92) | 31.17 (14.14) | 25.42 (11.53) | 35.04 (15.89) | — | — |
| 6" | 150 | 30.79 (13.96) | 38.16 (17.31) | 32.56 (14.77) | 46.87 (21.26) | 71.73 (32.53) | 91.08 (41.31) |
| 8" | 200 | 46.97 (21.30) | 56.60 (25.67) | 60.28 (27.34) | 83.08 (37.68) | 137.31 (62.28) | 167.96 (76.19) |
| 10" | 250 | 68.81 (31.21) | 86.81 (39.38) | 97.19 (44.08) | 130.02 (58.98) | 201.19 (91.26) | 281.16 (127.53) |
| 12" | 300 | 104.75 (47.51) | 133.64 (60.62) | 143.93 (65.28) | 189.77 (86.08) | 326.66 (148.17) | 454.60 (206.20) |
| 14" | 350 | 139.44 (63.25) | 184.17 (83.54) | 218.86 (99.28) | 326.25 (147.98) | — | — |
| 16" | 400 | 207.90 (94.30) | 274.99 (124.74) | 310.29 (140.74) | 445.71 (202.17) | — | — |
| 18" | 450 | 280.24 (127.12) | 342.32 (155.27) | 440.47 (199.79) | 637.22 (289.04) | — | — |
| 20" | 500 | 358.98 (162.83) | 442.96 (200.92) | 577.26 (261.84) | 785.86 (356.46) | — | — |
| 24" | 600 | 577.15 (261.79) | 712.93 (323.38) | 843.54 (382.62) | 1,206.72 (547.36) | — | — |

PRESSURE TEMPERATURE RATINGS

Class 150 – Double Offset High Performance Butterfly Valves

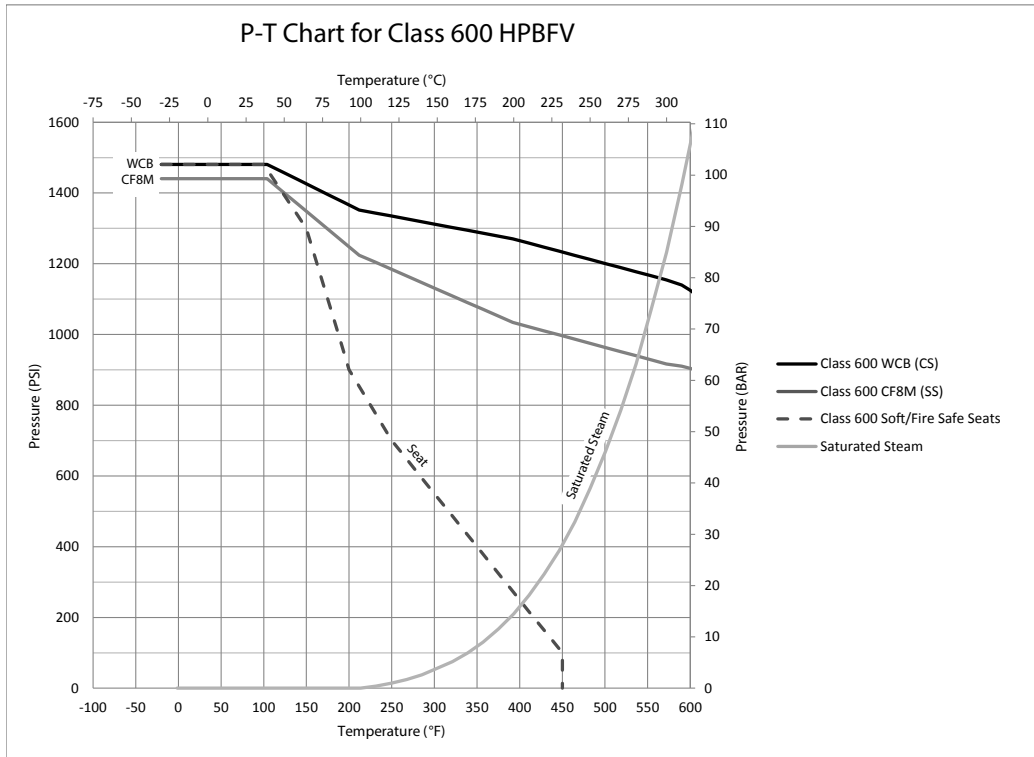


Class 300 – Double Offset High Performance Butterfly Valves



PRESSURE TEMPERATURE RATINGS

Class 600 – Double Offset High Performance Butterfly Valves



DOUBLE OFFSET HIGH PERFORMANCE BUTTERFLY VALVES

How To Specify

| 2 | 15 | L | 06 | C | S | P | 8T | A | 0 |
|-------------------|-----------------------------------|----------------------|---|--------------------------------|---------------|----------------|--|---------------------|--|
| VALVE TYPE | CLASS | VALVE STYLE | SIZE | BODY MATERIAL | DISC MATERIAL | STEM MATERIAL | SEAT MATERIAL | SPECIAL SERVICE | OPERATOR |
| 2 - Double Offset | 15 (150) 30 (300) 60 (600)* | L - Lug W - Wafer | 02 (2") 25 (2.5") 03 (3") 04 (4") 05 (5") 06 (6") 08 (8") 10 (10") 12 (12") 14 (14") 16 (16") 18 (18") 20 (20") 24 (24") | C - Carbon Steel S - 316 SS | S - 316 SS | P - 17-4 PH SS | 8T - TFM 1700 w/Glass (Soft Seated) 2F - TFM/Inconel, Graphite Seals (Fire Safe) 2M - Duplex 2205 (Metal Seated) | A - Standard Apollo | 0 - Bare Stem 1 - Lever Operator** 2 - Gear Operator |

* Class 600 valves available in sizes 3" through 12" (excluding 5" size).

** Lever operator not available in Class 600.

Example:

215L06CSP8TA0: 6" Class 150 Lug, Carbon Steel Body, SS Disc, 17-4 PH Stem, TFM 1700 Seats, Standard Service, Bare Stem

Warranty and Limitations of Liability

Conbraco Industries, Inc. warrants, to its initial purchaser only, that its products which are delivered to the initial purchaser will be of the kind described in the order or pricelist and will be free of defects in workmanship or material for a period of TWO years from the date of delivery to you, our initial purchaser.

Should any failure to conform to this warranty appear within two years after the date of the initial delivery to our initial purchaser, Conbraco will, upon written notification thereof and substantiation that the goods have been stored, installed, maintained and operated in accordance with Conbraco's recommendations and standard industry practice, correct such defects by suitable repair or replacement at Conbraco's own expense.

THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY WHETHER EXPRESSED OR IMPLIED, EXCEPT THE WARRANTY OF TITLE AND AGAINST PATENT INFRINGEMENT. Correction of non-conformities, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of Conbraco to our initial purchaser, with respect to the goods, whether based on contract, negligence, strict tort or otherwise. It is the intention of Conbraco Industries, Inc. that no warranty of any kind, whether express or implied, shall pass through our initial purchaser to any other person or corporation.

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