



## BYB Series Industrial Butterfly Valves Lever Operated Only



2" to 8" • Bodies - PVC, CPVC, PPL, and PVDF • Disks - CPVC, PPL, and PVDF



### **A Better Butterfly Valve**

Hayward's BYB Series Industrial Butterfly Valves 2" through 8" are rated at a full 150 PSI. Unlike other plastic butterfly valves, these valves are constructed from a one piece body that incorporates slot designed bolt holes to accommodate ANSI and DIN pipe flanges. Their heavy duty construction stands up to the most demanding applications.

### **Extra Features, No Extra Cost**

BYB Series Butterfly Valves feature a stainless steel stem and a lever handle with a built in lockout feature.

### **Better Sealing**

Other plastic butterfly valves have only a thin o-ring on the disk to seal the valve, but Hayward valves feature a full body double liner seal and a liner retention slot. This means that the process media never contacts the valve body. And you can count on the full liner seal to perform reliably, year after year.

### **No Metal, No Corrosion**

These valves have no metal in contact with the process media. They cannot corrode or rust – nor will they contaminate sensitive fluids flowing through them.

### **Features**

- Rated at 150 PSI
- Stainless Steel Stem
- Fully Supported Flange Bolt Holes
- FPM or EPDM Liners
- Wafer Body Design
- Slot Design for ANSI, DIN

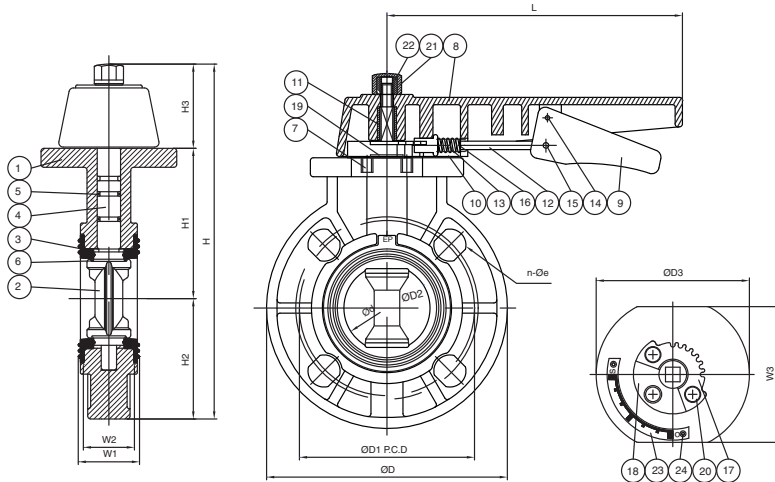
### **Options**

- Gear Operators
- Actuation Available
- Type 316 SS or 304 SS Stems



## Technical Information

### Lever Handle Operator



### Parts List Lever Handle Operator Butterfly Valves

- |                     |                       |
|---------------------|-----------------------|
| 1. Body             | 13. Spring            |
| 2. Disc             | 14. Spring Pin        |
| 3. Seat Seal        | 15. Spring Pin        |
| 4. Stem             | 16. Washer            |
| 5. Stem O-Ring      | 17. Locking Plate     |
| 6. Disc O-Ring      | 18. Gear Seat         |
| 7. Insert Nut 2"-6" | 19. Stem Washer 2"-5" |
| 8. Large Handle     | 20. Bolt              |
| 9. Small Handle     | 21. Nut               |
| 10. Spring Lock     | 22. Insert Nut        |
| 11. Handle Insert   | 23. Level             |
| 12. Handle Lever    | 24. Rivet             |

### Dimensions - Inches / Millimeters (Lever Handle Operator)

| Size       | D1          | n-Øe | D           | D2           | D3         | L           | H             | H1           | H2           | H3        | W1          | W2        | W3         |
|------------|-------------|------|-------------|--------------|------------|-------------|---------------|--------------|--------------|-----------|-------------|-----------|------------|
| 2 / 50     | 4.76 / 121  | 4-19 | 6.50 / 165  | 2.22 / 56.5  | 4.13 / 105 | 7.83 / 199  | 9.78 / 248.5  | 4.06 / 103   | 3.25 / 82.5  | 2.48 / 63 | 1.69 / 43   | 1.38 / 35 | 3.70 / 94  |
| 2-1/2 / 65 | 5.51 / 140  | 4-19 | 7.28 / 185  | 2.74 / 69.5  | 4.72 / 120 | 7.83 / 199  | 10.53 / 267.5 | 4.45 / 113   | 3.64 / 92.5  | 2.44 / 62 | 1.81 / 46   | 1.42 / 36 | 3.70 / 94  |
| 3 / 80     | 5.98 / 152  | 4-19 | 7.87 / 200  | 3.13 / 79.5  | 4.84 / 123 | 7.83 / 199  | 10.91 / 277   | 4.53 / 115   | 3.94 / 100   | 2.44 / 62 | 1.81 / 46   | 1.42 / 36 | 3.70 / 94  |
| 4 / 100    | 9.25 / 191  | 8-19 | 9.02 / 229  | 4.04 / 102.5 | 5.31 / 135 | 9.92 / 252  | 12.44 / 316   | 5.33 / 135.5 | 4.51 / 114.5 | 2.60 / 66 | 2.20 / 56   | 1.85 / 47 | 3.94 / 100 |
| 5 / 125    | 8.50 / 216  | 8-22 | 10.12 / 257 | 5.12 / 130   | 6.46 / 164 | 11.69 / 297 | 14.70 / 373.5 | 6.50 / 165   | 5.06 / 128.5 | 3.15 / 80 | 2.72 / 69   | 2.24 / 57 | 4.33 / 110 |
| 6 / 150    | 9.49 / 241  | 8-22 | 11.22 / 285 | 6.02 / 153   | 6.65 / 169 | 11.69 / 297 | 15.93 / 404.5 | 6.97 / 177   | 5.61 / 142.5 | 3.27 / 83 | 2.78 / 70.5 | 2.44 / 62 | 3.94 / 100 |
| 8 / 200    | 11.73 / 298 | 8-22 | 13.50 / 343 | 7.99 / 203   | 7.91 / 201 | 11.69 / 297 | 18.29 / 464.5 | 8.27 / 210   | 6.75 / 171.5 | 3.27 / 83 | 3.35 / 85   | 2.99 / 76 | 4.80 / 122 |

### Selection Chart

| Size     | Body Material          | Disc Material     | Stem Material* | Liner       | Operator | Pressure Rating          |
|----------|------------------------|-------------------|----------------|-------------|----------|--------------------------|
| 2" to 8" | PVC, CPVC, PPL, & PVDF | CPVC, PPL, & PVDF | 410 SSSL       | FPM or EPDM | Lever    | 150 PSI @ 70°F Non-Shock |

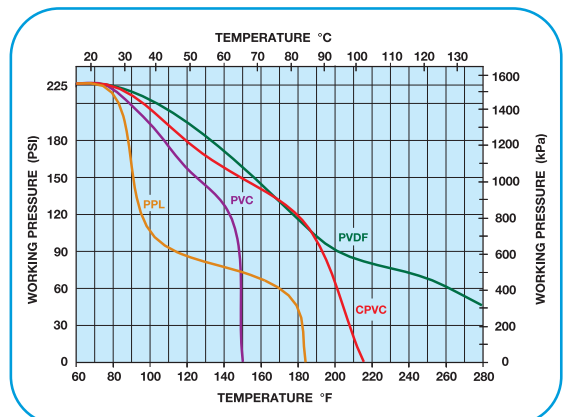
\*Type 316 SS or 304 SS stems available. Consult factory.

#### Pressure Loss Calculation Formula

$$\Delta P = \left[ \frac{Q}{Cv} \right]^2$$

ΔP = Pressure Drop  
Q = Flow in GPM  
Cv = Flow Coefficient

### Operating Temperature/Pressure





## BYB Series Industrial Butterfly Valves

### Gear Operated Only



**2" to 24" Bodies - PVC, CPVC, PPL, and PVDF**  
**Disks - CPVC, PPL, and PVDF**



### **Designed for Performance and Flexibility**

Industrial Series Butterfly Valves from Hayward are specially designed to take into account application parameters encountered in larger size piping systems. The rugged, one piece body stands up to high flow rates and elevated stress conditions. The valve features a full face liner that eliminates the need for expensive flange gaskets. The valve itself is fully lined and the Type 410 stainless steel stem is completely isolated from the process media.

The valve's molded design makes for exceptional application flexibility. Because both the body and the disc can be molded in a variety of materials, it is easy and cost effective to assemble a valve that conforms to the requirements of special, demanding applications.

### **Easy Installation, Easy Operation**

Because these valves are significantly lighter than metal equivalents, installation is relatively easy and can often be accomplished by one person. Positive manual valve operation is ensured by the heavy duty, high torque output gear box. Removal of the gear box allows a variety of pneumatic and electric actuators to be installed on the large mounting pad. If a particular actuator does not mount directly to the valve stem, a variety of adapters and mounting accessories are available so that most actuators can be installed.

### **Replacement for Metal Valves**

All plastic construction means the valves will never stick, fail, or jam due to rust or corrosion – making them an excellent alternative to metal valves in many applications.

### **Features**

- Stainless Steel Stem
- Choice of FPM or EPDM Liners
- High Torque Gear Box
- Easily Modified for Unique Applications
- Replaces Metal Valves

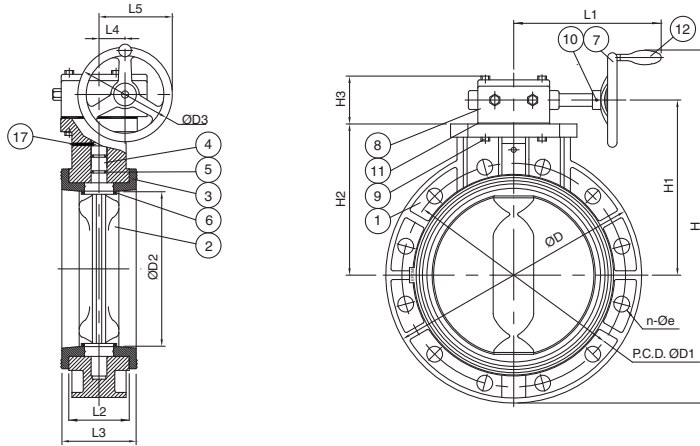
### **Options**

- Actuation Available
- Type 316 SS and 304 SS Stems



## Technical Information

### Gear Box Operator



### Parts List Gear Box Operator Butterfly Valves

- |                  |                  |
|------------------|------------------|
| 1. Body          | 10. Spring Pin   |
| 2. Disc          | 11. Packing      |
| 3. Seat Seal     | 12. Small Handle |
| 4. Stem          | 13. Key          |
| 5. Stem O-Ring   | 14. Seal         |
| 6. Disc O-Ring   | 15. Metal Stat   |
| 7. Handwheel     | 16. Insert Nut   |
| 8. Gear Box      | 17. Pin          |
| 9. Bolt & Washer |                  |

### Dimensions - Inches / Millimeters

| Size       | D1          | n-Oe  | D           | D2            | D3          | H             | H1          | H2           | H3          | L1            | L2           | L3          | L4          | L5          |
|------------|-------------|-------|-------------|---------------|-------------|---------------|-------------|--------------|-------------|---------------|--------------|-------------|-------------|-------------|
| 2 / 50     | 4.76 / 121  | 4-19  | 6.50 / 165  | 2.22 / 56.5   | 6.26 / 159  | 11.30 / 287   | 4.92 / 125  | 4.06 / 103   | 2.09 / 53   | 5.51 / 140    | 1.36 / 34.5  | 1.69 / 43   | 1.63 / 41.5 | 4.76 / 121  |
| 2-1/2 / 65 | 5.51 / 140  | 4-19  | 7.28 / 185  | 2.74 / 69.5   | 6.26 / 159  | 12.09 / 307   | 5.31 / 135  | 4.45 / 113   | 2.09 / 53   | 5.51 / 140    | 1.46 / 37    | 1.81 / 46   | 1.63 / 41.5 | 4.76 / 121  |
| 3 / 80     | 5.98 / 152  | 4-19  | 7.87 / 200  | 3.13 / 79.5   | 6.26 / 159  | 12.17 / 309   | 5.39 / 137  | 4.53 / 115   | 2.09 / 53   | 5.51 / 140    | 1.46 / 37    | 1.81 / 46   | 1.63 / 41.5 | 4.76 / 121  |
| 4 / 100    | 7.52 / 191  | 8-19  | 9.02 / 229  | 4.04 / 102.5  | 6.26 / 159  | 13.84 / 351.5 | 5.79 / 147  | 5.33 / 135.5 | 2.09 / 53   | 5.51 / 140    | 1.85 / 47    | 2.20 / 56   | 1.63 / 41.5 | 4.76 / 121  |
| 6 / 150    | 9.49 / 241  | 8-22  | 11.22 / 285 | 6.02 / 153    | 7.95 / 202  | 18.23 / 463   | 8.70 / 221  | 6.97 / 177   | 3.05 / 77.5 | 11.20 / 284.5 | 2.44 / 62    | 2.78 / 70.5 | 2.36 / 60   | 6.34 / 161  |
| 8 / 200    | 11.73 / 298 | 8-22  | 13.50 / 343 | 7.99 / 203    | 7.95 / 202  | 20.67 / 525   | 10.00 / 254 | 8.27 / 210   | 3.05 / 77.5 | 11.20 / 284.5 | 2.99 / 76    | 3.35 / 85   | 2.36 / 60   | 6.34 / 161  |
| 10 / 250   | 14.25 / 362 | 12-25 | 16.18 / 411 | 10.04 / 255   | 7.95 / 202  | 23.27 / 591   | 11.26 / 286 | 9.53 / 242   | 3.05 / 77.5 | 11.20 / 284.5 | 3.76 / 95.5  | 4.29 / 109  | 2.36 / 60   | 6.34 / 161  |
| 12 / 300   | 17.01 / 432 | 12-25 | 19.29 / 490 | 12.19 / 309.5 | 9.84 / 250  | 27.80 / 706   | 13.54 / 344 | 11.89 / 302  | 2.99 / 76   | 12.99 / 330   | 4.59 / 116.5 | 5.24 / 133  | 2.36 / 60   | 7.28 / 185  |
| 14 / 350   | 18.74 / 476 | 12-29 | 20.87 / 530 | 14.17 / 360   | 9.84 / 250  | 28.82 / 732   | 13.46 / 342 | 11.81 / 300  | 3.07 / 78   | 12.99 / 330   | 4.45 / 113   | 5.00 / 127  | 2.36 / 60   | 7.28 / 185  |
| 16 / 400   | 21.26 / 540 | 16-29 | 23.62 / 600 | 15.65 / 397.5 | 11.81 / 300 | 34.21 / 869   | 16.73 / 425 | 13.78 / 350  | 4.72 / 120  | 13.90 / 353   | 6.00 / 152.5 | 6.57 / 167  | 3.19 / 81   | 9.09 / 231  |
| 18 / 450   | 22.76 / 578 | 16-32 | 24.80 / 630 | 17.81 / 452.5 | 11.81 / 300 | 35.83 / 910   | 17.52 / 445 | 14.57 / 370  | 4.61 / 117  | 13.90 / 353   | 6.44 / 163.5 | 7.05 / 179  | 3.19 / 81   | 9.09 / 231  |
| 20 / 500   | 25.00 / 635 | 20-32 | 27.40 / 696 | 19.76 / 502   | 15.98 / 406 | 40.83 / 1037  | 19.13 / 486 | 16.14 / 410  | 5.63 / 143  | 15.35 / 390   | 6.69 / 170   | 7.44 / 189  | 4.72 / 120  | 12.72 / 323 |
| 24 / 600   | 29.8 / 750  | 20-35 | 32.01 / 813 | 23.74 / 603   | 15.98 / 406 | 44.00 / 1120  | 20.20 / 513 | 18.31 / 465  | 5.24 / 133  | 13.78 / 350   | 7.52 / 191   | 8.27 / 210  | 5.31 / 135  | 13.18 / 335 |

### Selection Chart

| Size    | Body Material           | Disc Material     | Seals       | Operators | Pressure Rating          |
|---------|-------------------------|-------------------|-------------|-----------|--------------------------|
| 2"-10"  | PVC, CPVC, PPL and PVDF | CPVC, PPL or PVDF | EPDM or FPM | Gearbox   | 150 PSI @ 70°F Non-Shock |
| 12"     | PVC, CPVC, PPL and PVDF | CPVC, PPL or PVDF | EPDM or FPM | Gearbox   | 100 PSI @ 70°F Non-Shock |
| 14"-16" | PVC, CPVC, PPL and PVDF | CPVC, PPL or PVDF | EPDM or FPM | Gearbox   | 86 PSI @ 70°F Non-Shock  |
| 18"     | PVC, CPVC, PPL and PVDF | CPVC, PPL or PVDF | EPDM or FPM | Gearbox   | 72 PSI @ 70°F Non-Shock  |
| 20"-24" | PVC, CPVC, PPL and PVDF | CPVC, PPL or PVDF | EPDM or FPM | Gearbox   | 51 PSI @ 70°F Non-Shock  |

### Operating Temperature/Pressure

