

# BUTTERFLY VALVE



## VBG13121H - 363PSI Grooved-End Butterfly Valve

- Approved Gear Operator for both Indoor or Outdoor use
- NSF Certified Epoxy Coated Ductile Iron body for Excellent Protection
- Elastomer Encapsulated Disc with Outstanding Flow Characteristics
- Two NPT (or BSPT) threaded tapping bosses on the up- and downstream sides of the disc for connection on valve trim.  
Tapping bosses size: 2"-3" valve is 3/8"; 4"-10" valve is 1/2".
- Options of Double Internal Supervisory Switches
- FM Approved & UL/ULC Listed

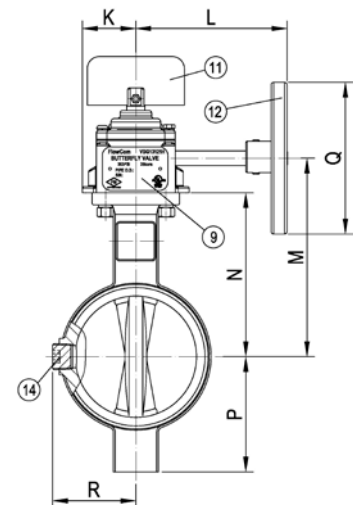
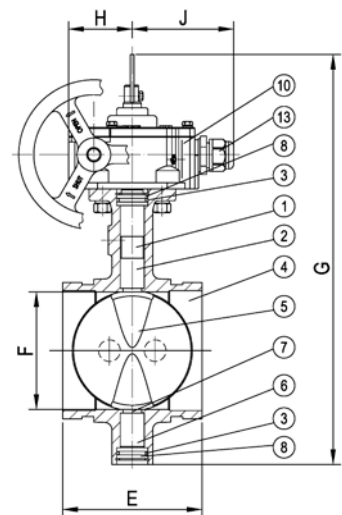


### Material Specifications

| PART               | SPECIFICATION                                   |
|--------------------|---|
| 1. Upper Stem      | Stainless Steel ASTM A 276 Type 420             |
| 2. Upper Bearing   | PTFE Bronze Sintered on Steel                   |
| 3. O-Ring          | EPDM  |
| 4. Body            | Ductile Iron ASTM A 395, Epoxy Coated           |
| 5. Disc            | Ductile Iron ASTM A 395 with EPDM Encapsulation |
| 6. Lower Bearing   | PTFE Bronze Sintered on Steel                   |
| 7. Lower Stem      | Stainless Steel ASTM A 276 Type 420             |
| 8. Seal Gland      | Carbon Steel (Zinc-plated)                      |
| 9. Name Plate      | Stainless Steel                                 |
| 10. Gear Operator  | Cast Iron and Steel                             |
| 11. Indicator Flag | Steel   |
| 12. Handwheel      | Cast Iron                                       |
| 13. Cable gland    | Nylon   |
| 14. Plug           | Carbon Steel (Zinc-plated)                      |

### Dimension

| Part Number    | Size |     | OD    |      | E   |      | F   |       | G   |      | H  |      | J   |  |
|----------------|------|-----|-------|------|-----|------|-----|-------|-----|------|----|------|-----|--|
|                | in.  | mm  | mm    | in.  | mm  | in.  | mm  | in.   | mm  | in.  | mm | in.  | mm  |  |
| VBG13121H-060  | 2    | 50  | 60.3  | 3.85 | 98  | 2.01 | 51  | 9.84  | 250 | 2.09 | 53 | 3.35 | 85  |  |
| VBG13121H-073  | 2½   | 65  | 73.0  | 3.85 | 98  | 2.40 | 61  | 10.87 | 276 | 2.09 | 53 | 3.35 | 85  |  |
| VBG13121H-076  | 3OD  | 65  | 76.1  | 3.85 | 98  | 2.40 | 61  | 10.87 | 276 | 2.09 | 53 | 3.35 | 85  |  |
| VBG13121H-089  | 3    | 80  | 88.9  | 3.85 | 98  | 2.87 | 73  | 11.46 | 291 | 2.09 | 53 | 3.35 | 85  |  |
| VBG13121H-114  | 4    | 100 | 114.3 | 4.56 | 116 | 3.86 | 98  | 13.46 | 342 | 2.09 | 53 | 3.35 | 85  |  |
| VBG13121H-140  | 5½OD | 125 | 139.7 | 5.86 | 149 | 4.80 | 122 | 14.88 | 378 | 2.99 | 76 | 3.35 | 92  |  |
| VBG13121H-141  | 5    | 125 | 141.3 | 5.86 | 149 | 4.80 | 122 | 14.88 | 378 | 2.99 | 76 | 3.62 | 92  |  |
| VBG13121H-1655 | 6½OD | 150 | 165.1 | 5.86 | 149 | 5.75 | 146 | 15.83 | 402 | 2.99 | 76 | 3.62 | 92  |  |
| VBG13121H-168  | 6    | 150 | 168.3 | 5.86 | 149 | 5.75 | 146 | 15.83 | 402 | 2.99 | 76 | 3.62 | 92  |  |
| VBG13121H-219  | 8    | 200 | 219.1 | 5.27 | 134 | 7.72 | 196 | 18.35 | 466 | 2.99 | 76 | 3.62 | 92  |  |
| VBG13121H-273  | 10   | 250 | 273.0 | 6.30 | 160 | 9.57 | 243 | 21.6  | 549 | 3.74 | 95 | 3.94 | 100 |  |



| Size | K    |    | L    |     | M     |     | N    |     | P    |      | Q    |     | R    |      | Wt.  |      |
|------|------|----|------|-----|-------|-----|------|-----|------|------|------|-----|------|------|------|------|
|      | in.  | mm | in.  | mm  | in.   | mm  | in.  | mm  | in.  | mm   | in.  | mm  | in.  | mm   | lbs. | kg.  |
| 2    | 1.73 | 44 | 4.92 | 125 | 4.25  | 108 | 3.15 | 80  | 2.28 | 58   | 4.25 | 108 | 1.57 | 40   | 9.9  | 4.5  |
| 2½   | 1.73 | 44 | 4.92 | 125 | 4.92  | 125 | 3.78 | 96  | 2.68 | 68   | 4.25 | 108 | 1.77 | 45   | 10.1 | 4.6  |
| 3OD  | 1.73 | 44 | 4.92 | 125 | 4.92  | 125 | 3.78 | 96  | 2.89 | 73.5 | 4.25 | 108 | 2.03 | 51.5 | 10.4 | 4.7  |
| 3    | 1.73 | 44 | 4.92 | 125 | 5.28  | 134 | 4.13 | 105 | 2.89 | 73.5 | 4.25 | 108 | 2.03 | 51.5 | 11.2 | 5.1  |
| 4    | 1.73 | 44 | 4.92 | 125 | 6.46  | 164 | 5.31 | 135 | 3.74 | 95   | 4.92 | 125 | 2.48 | 63   | 15.0 | 6.8  |
| 5½OD | 1.85 | 47 | 6.62 | 168 | 7.17  | 182 | 6.02 | 153 | 4.33 | 110  | 5.90 | 150 | 3.11 | 79   | 26.2 | 11.9 |
| 5    | 1.85 | 47 | 6.62 | 168 | 7.17  | 182 | 6.02 | 153 | 4.33 | 110  | 5.90 | 150 | 3.11 | 79   | 26.2 | 11.9 |
| 6½OD | 1.85 | 47 | 6.62 | 168 | 7.83  | 199 | 6.50 | 165 | 4.80 | 122  | 5.90 | 150 | 3.58 | 91   | 31.5 | 14.3 |
| 6    | 1.85 | 47 | 6.62 | 168 | 7.83  | 199 | 6.50 | 165 | 4.80 | 122  | 5.90 | 150 | 3.58 | 91   | 32.4 | 14.7 |
| 8    | 1.85 | 47 | 6.62 | 168 | 9.37  | 238 | 8.03 | 204 | 5.79 | 147  | 5.90 | 150 | 4.65 | 118  | 41.4 | 18.8 |
| 10   | 2.60 | 66 | 9.45 | 240 | 11.18 | 284 | 9.65 | 245 | 7.13 | 181  | 9.84 | 250 | 5.67 | 144  | 78.0 | 35.4 |



# BUTTERFLY VALVE



## Butterfly Valve Performance Data

Formulas for  $C_v$  Values

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:  $Q$  = Flow rate (gallons per minute: GPM)

$\Delta P$  = Pressure drop across valve (PSI)

$C_v$  = Flow coefficient

| Nominal Size |    | Pipe O.D. |     | Cv (Full Open) | Nominal Size |     | Pipe O.D. |      | Cv (Full Open) | Nominal Size |     | Pipe O.D. |      | Cv (Full Open) |
|--------------|----|-----------|-----|----------------|--------------|-----|-----------|------|----------------|--------------|-----|-----------|------|----------------|
| in.          | mm | mm        | mm  |                | in.          | mm  | mm        | mm   |                | in.          | mm  | mm        | mm   |                |
| 2            | 50 | 60.3      | 155 |                | 4            | 100 | 114.3     | 670  |                | 6            | 150 | 168.3     | 1934 |                |
| 2 1/2        | 65 | 73.0      | 221 |                | 5 1/2 OD     | 125 | 139.7     | 1200 |                | 8            | 200 | 219.1     | 3874 |                |
| 3 OD         | 65 | 76.1      | 221 |                | 5            | 125 | 141.3     | 1200 |                | 10           | 250 | 273.0     | 5995 |                |
| 3            | 80 | 88.9      | 324 |                | 6 1/2 OD     | 150 | 165.1     | 1934 |                |              |     |           |      |                |

