



# Bray®

**SERIES 30H/31H Wafer/Lug**  
 50mm - 500mm (2" - 20")  
 16 bar

## 50mm-500mm (2"-20")

Bray Valve & Controls is proud to offer a line of superior quality, high pressure butterfly valves that meet today's industrial requirements. The Series 30H wafer type and Series 31H lug version are rated for 16 bar

### FEATURES

- Wafer valve has flange location holes that meet ANSI Class 125/150, BS 10 Tables D and E, BS 4504 NP 10/16, DIN ND 10/16, AS 2129 and JIS 10. PN 16/ANSI is the standard wafer drilling.
- Bi-directional and tested in accordance with BS 5155.
- The unique close tolerance, double "D" connection drives the valve disc. This design eliminates exposure of stem retention components, such as disc screws and taper pins, to the line media which commonly results in leak paths, corrosion, and vibration failures. Due to wear and corrosion, disc screws and taper pins often require difficult machining for disassembly. Disassembly of the Bray stem is just a matter of pulling the stem out of the disc.
- Disc casting is spherically machined and hand polished to provide a bubble tight shut-off, with minimum torque and an extended seat cycle life.
- Patented "Spirolox®" retaining ring and stem retaining C-rings provide blow-out proof stem.
- Unique "tongue and groove" seat design features lower torque and improved seat to body retention. The seat is specifically

designed to seal with slip-on or weld-neck flanges. Seat totally encases the valve interior to isolate the line media from the body.

- Molded seat O-ring eliminates the use of flange gaskets for installation.
- Primary and secondary seals are interference fits between seat and disc hub, and stem and seat stem hole respectively.
- Non corrosive, heavy duty acetal bushing absorbs actuator side thrusts.
- Double "U" cup seal design is self-adjusting and gives positive sealing in both directions.
- Actuator mounting flange meets ISO 5211 and allows direct mounting of Bray power actuators and manual operators.

### NYLON 11 DISC COATING

Nylon 11 coating is a thermoplastic produced from a vegetable base rather than a petroleum base. Nylon 11 offers excellent corrosion resistance to salt solutions and marine atmospheres. The material has been salt spray tested in excess of 2,000 hours and seawater immersion tested for over 10 years without corrosion to metal substrates. In summary, nylon coated ductile iron discs are an economical and superior alternative to aluminum bronze material for water applications and are superior even to 316SS for seawater applications. It has excellent abrasion resistance, impact resistance, and resistance to ultraviolet radiation. The low coefficient of friction of Nylon 11 increases valve cycle life and reduces seating/unseating torque. Nylon 11 is *USDA Approved*, inert to fungus growth and has high stain resistance.

# HVAC BUTTERFLY VALVES

**HP** The High Performance Company

**INSTALLATION AND MAINTENANCE** Please refer to Bray Technical Bulletin 1071.

**PRESSURE RATINGS**  
When valve is placed between the flanges for bi-directional bubble-tight shut off, disc in closed position:  
50mm-500mm (2"-20") 16 bar

**TEMPERATURE RANGE OF SEAT EPDM**  
Maximum: 120°C (+250°F)  
Minimum: -40°C (-40°F)

**VELOCITY LIMITS**  
For On/Off Services:  
Fluids - 9m/sec (30 ft/sec)  
Gases - 54m/sec (175 ft/sec)

**MATERIALS SELECTION**

**BODY:** Cast Iron, Ductile Iron  
**DISC:** Ductile Iron, Nylon 11 coated Ductile Iron, Aluminum Bronze  
**STEM:** 416 Stainless Steel  
**SEAT:** EPDM

**K<sub>v</sub> VALUES - VALVE SIZING COEFFICIENT**

| Valve Size |     | Disc Position (degrees) |       |       |      |      |      |      |     |      |
|------------|-----|-------------------------|-------|-------|------|------|------|------|-----|------|
| mm         | ins | 90°                     | 80°   | 70°   | 60°  | 50°  | 40°  | 30°  | 20° | 10°  |
| 50         | 2   | 124                     | 98    | 72    | 53   | 37   | 23   | 14   | 6   | .9   |
| 65         | 2½  | 243                     | 192   | 140   | 92   | 58   | 37   | 21   | 10  | 1.3  |
| 80         | 3   | 397                     | 313   | 230   | 132  | 83   | 53   | 30   | 13  | 1.7  |
| 100        | 4   | 723                     | 603   | 427   | 236  | 147  | 94   | 53   | 23  | 2.6  |
| 125        | 5   | 1183                    | 986   | 667   | 368  | 231  | 146  | 84   | 37  | 4.3  |
| 150        | 6   | 1591                    | 1326  | 882   | 488  | 304  | 194  | 111  | 48  | 5.2  |
| 200        | 8   | 2852                    | 2444  | 1601  | 876  | 585  | 362  | 207  | 88  | 10.3 |
| 250        | 10  | 4670                    | 3892  | 2535  | 1471 | 925  | 574  | 329  | 139 | 16.3 |
| 300        | 12  | 6946                    | 5789  | 3778  | 2204 | 1371 | 864  | 477  | 202 | 23.2 |
| 350        | 14  | 9063                    | 7632  | 5108  | 2910 | 1848 | 1135 | 650  | 257 | 29.2 |
| 400        | 16  | 12011                   | 10115 | 6766  | 3855 | 2448 | 1504 | 861  | 341 | 38.7 |
| 450        | 18  | 14804                   | 12467 | 8656  | 4933 | 3133 | 1924 | 1102 | 436 | 49.9 |
| 500        | 20  | 19212                   | 16178 | 10780 | 6144 | 3901 | 2326 | 1372 | 544 | 61.9 |

**EXPECTED SEATING/UNSEATING TORQUES (Nm)**

| Full-Rated Pressure Valves ΔP (Bar) |      |      |      |      |
|-------------------------------------|------|------|------|------|
| 3.5                                 | 7    | 10   | 12   | 17   |
| 14                                  | 15   | 15   | 16   | 17   |
| 22                                  | 23   | 24   | 25   | 26   |
| 29                                  | 31   | 33   | 34   | 36   |
| 45                                  | 48   | 51   | 53   | 56   |
| 69                                  | 76   | 82   | 85   | 92   |
| 91                                  | 103  | 113  | 118  | 129  |
| 167                                 | 186  | 206  | 216  | 236  |
| 253                                 | 285  | 316  | 332  | 364  |
| 386                                 | 437  | 488  | 514  | 565  |
| 559                                 | 644  | 729  | 814  | 899  |
| 723                                 | 870  | 1017 | 1164 | 1311 |
| 893                                 | 1119 | 1345 | 1571 | 1797 |
| 1164                                | 1458 | 1752 | 2046 | 2340 |

C<sub>v</sub> is defined as the volume of water in U.S.G.P.M. that will flow through a given restriction or valve opening with a pressure drop of one (1) p.s.i. at room temperature. Recommended control angles are between 25°-70° open. Preferred angle for control valve sizing is 60°-65° open.

**DIMENSIONS Series 30H Wafer**

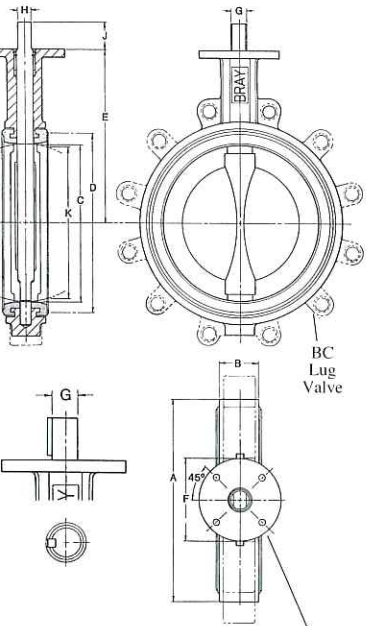
| Valve Size |     | A   | B  | C   | D   | E   | F   | Mounting Flange Drig. |           |           | G  | H  | J  | K   |
|------------|-----|-----|----|-----|-----|-----|-----|-----------------------|-----------|-----------|----|----|----|-----|
| mm         | ins |     |    |     |     |     |     | BC                    | No. Holes | Hole Dia. |    |    |    |     |
| 50         | 2   | 94  | 43 | 51  | 72  | 140 | 90  | 70                    | 4         | 9.5       | 14 | 10 | 32 | 33  |
| 65         | 2½  | 106 | 46 | 64  | 85  | 152 | 90  | 70                    | 4         | 9.5       | 14 | 10 | 32 | 49  |
| 80         | 3   | 124 | 46 | 76  | 102 | 159 | 90  | 70                    | 4         | 9.5       | 14 | 10 | 32 | 65  |
| 100        | 4   | 154 | 52 | 102 | 131 | 178 | 90  | 70                    | 4         | 9.5       | 16 | 11 | 32 | 91  |
| 125        | 5   | 181 | 56 | 127 | 156 | 190 | 90  | 70                    | 4         | 9.5       | 19 | 13 | 32 | 118 |
| 150        | 6   | 206 | 56 | 146 | 178 | 203 | 90  | 70                    | 4         | 9.5       | 19 | 13 | 32 | 138 |
| 200        | 8   | 267 | 60 | 197 | 241 | 241 | 150 | 125                   | 4         | 14        | 22 | 16 | 32 | 189 |
| 250        | 10  | 324 | 68 | 248 | 291 | 273 | 150 | 125                   | 4         | 14        | 30 | 22 | 50 | 242 |
| 300        | 12  | 378 | 78 | 298 | 342 | 311 | 150 | 125                   | 4         | 14        | 30 | 22 | 50 | 291 |

**Series 31H Lug**

| Lug Bolting Data |           |                    |
|------------------|-----------|--------------------|
| PCD              | No. Holes | ISO Coarse Threads |
| 125              | 4         | M16                |
| 145              | 4         | M16                |
| 160              | 8         | M16                |
| 180              | 8         | M16                |
| 210              | 8         | M16                |
| 240              | 8         | M20                |
| 295              | 8         | M20                |
| 350              | 12        | M20                |
| 400              | 12        | M20                |

| Valve Size |     | A   | B   | C   | D   | E   | F   | Mounting Flange Drig. |           |           | G  | J  | KEY SIZE | K   |
|------------|-----|-----|-----|-----|-----|-----|-----|-----------------------|-----------|-----------|----|----|----------|-----|
| mm         | ins |     |     |     |     |     |     | BC                    | No. Holes | Hole Dia. |    |    |          |     |
| 350        | 14  | 430 | 78  | 337 | 388 | 346 | 150 | 125                   | 4         | 14        | 35 | 51 | 10x10    | 331 |
| 400        | 16  | 484 | 102 | 387 | 442 | 375 | 150 | 125                   | 4         | 14        | 35 | 51 | 10x10    | 377 |
| 450        | 18  | 537 | 108 | 438 | 495 | 406 | 210 | 165                   | 4         | 21        | 50 | 64 | 10x12    | 428 |
| 500        | 20  | 591 | 127 | 489 | 548 | 438 | 210 | 165                   | 4         | 21        | 50 | 64 | 10x12    | 475 |

| Lug Bolting Data |           |                    |
|------------------|-----------|--------------------|
| PCD              | No. Holes | ISO Coarse Threads |
| 460              | 16        | M20                |
| 515              | 16        | M24                |
| 565              | 20        | M24                |
| 620              | 20        | M24                |



See chart for Actuator Mounting Flange Drilling.

**Bray CONTROLS**

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