fivalco®

# Wafer Butterfly Valve

**Fig. V1116 (PN16)**

# WAFER BUTTERFLY VALVE

PN16 V1116

## FEATURES & SPECIFICATIONS

- Higher strength for disc with pinned single shaft ensure optimal alignment
- Centrally mounted disc and hydrodynamic design minimize pressure loss
- Can be installed at horizontal or vertical pipe line
- Phenolic backed rubber seat is non-collapsible, stretch resistant and easily replaceable
- Excellent flow characteristic with flow in either direction
- Design conforms to BS EN 593 / BS 5155 / MSS SP-67 / API 609
- Precision machining of disc for low operating torque

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Size | DN40 ... DN1200 |
| Body Design | Wafer |
| Working Pressure | 16bar |
| Shell Test Pressure (x1.5) | 24bar |
| Seat Test Pressure (x1.1) | 17.6bar |
| Working Temperature | -20°C ... 110°C (EPDM Seat)<br>-10°C ... 80°C (NBR Seat)<br>5°C ... 120°C (PTFE Seat)<br>-10°C ... 135°C (FPM Seat) |
| Applicable Medium | Water, Oil, Gas |
| Operator | Lever, Wormgear, Electric Actuator |
| Connection | BS 4504 PN10 / PN16<br>EN1092-2 PN10 / PN16<br>JIS B2239 10K / 16K<br>ANSI Class 125 / 150 |
| Optional Accessories | Chain Wheel, Limit Switch |

## MATERIAL SPECIFICATIONS

| Part | Material |
|---|---|
| Body | Ductile Iron<br>Stainless Steel 304<br>Stainless Steel 316 |
| Disc | Ductile Iron<br>Aluminium Bronze<br>Stainless Steel 304<br>Stainless Steel 316 |
| Seat | EPDM<br>NBR<br>PTFE (Teflon)<br>FPM (Viton) |

| Part | Material |
|---|---|
| Stem | Stainless Steel 410<br>Stainless Steel 431<br>Stainless Steel 316 |
| Taper Pin | Stainless Steel 316<br>Stainless Steel 410 |
| O-Ring | NBR |
| Bushing | PTFE (DN40 ... DN600)<br>Luberized Bronze (DN700 & above) |

# WAFER BUTTERFLY VALVE

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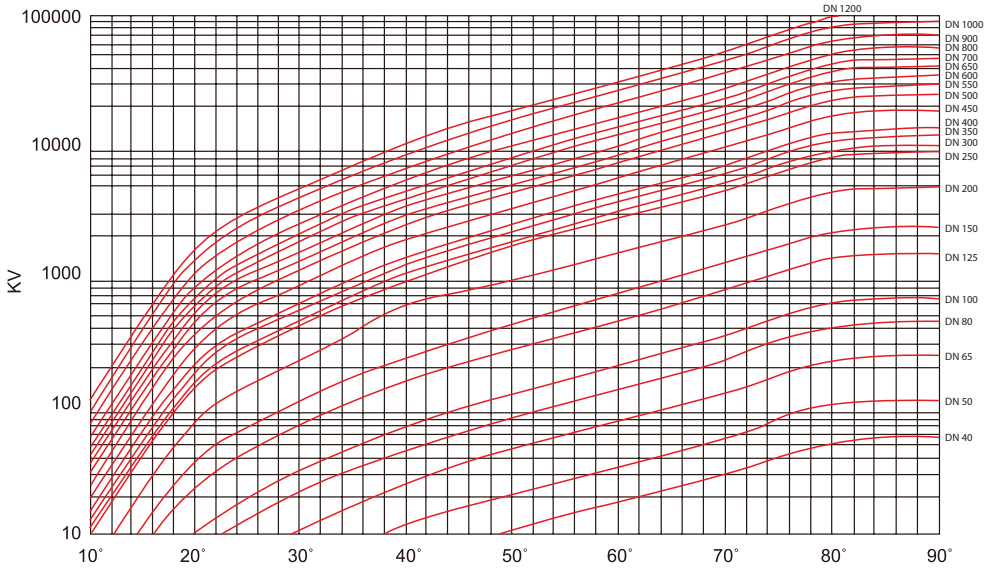
## VALVE COEFFICIENT (FULL OPEN)

| DN | (mm) | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (inch) | 1½ | 2 | 2½ | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 |
| | Cv | 69 | 135 | 220 | 302 | 600 | 1022 | 1579 | 3136 | 5340 | 8250 | 11917 |

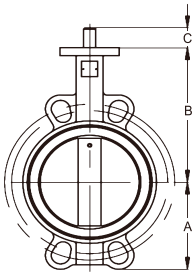
| DN | (mm) | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 800 | 900 | 1000 | 1200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (inch) | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 32 | 36 | 40 | 48 |
| | Cv | 16388 | 21705 | 27908 | 35170 | 43116 | 45620 | 49500 | 68250 | 86375 | 119750 | 154000 |

Cv = 1.17Kv

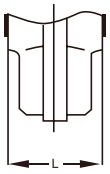



## DIMENSIONS - VALVE BODY

(mm)




| DN | (mm) | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (inch) | 1½ | 2 | 2½ | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 |
| | A | 66 | 68.6 | 76 | 99 | 119 | 129 | 142 | 176 | 209 | 248.5 | 272 | 333 |
| | B | 130 | 141.2 | 150.4 | 156.5 | 168 | 186.5 | 205.7 | 230.6 | 269.9 | 327.8 | 368 | 400 |
| | C | 22 | 22 | 22 | 22 | 25 | 25 | 25 | 25 | 27 | 27 | 40 | 52 |
| | L | 33 | 42 | 45 | 45 | 51 | 55 | 55 | 60 | 67 | 76 | 76 | 102 |




| DN | (mm) | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 900 | 1000 | 1100 | 1200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (inch) | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 36 | 40 | 44 | 48 |
| | A | 364 | 389 | 433 | 453 | 484 | 530 | 565 | 602 | 661 | 724 | 804 | 869 |
| | B | 422 | 480 | 533 | 562 | 540 | 626 | 660 | 666 | 722 | 806 | 820 | 938 |
| | C | 52 | 64 | 70 | 70 | 70 | 95 | 95 | 95 | 130 | 130 | 150 | 150 |
| | L | 114 | 127 | 151 | 151 | 172 | 165 | 167 | 188 | 203 | 216 | 252.5 | 276 |

Note : Mono Flange for DN250 ... DN1200

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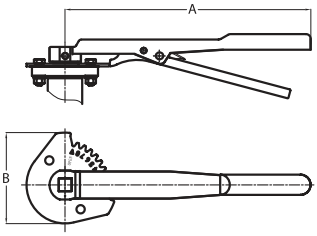
## DIMENSIONS - VALVE OPERATOR

**Malleable Iron / Stainless Steel Lever**
**Stainless Steel SUS304 Top Indicator Plate**

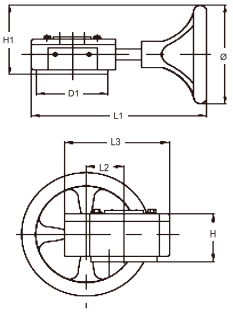
(mm)

| DN (mm) (inch) | 40-80 1.5-3 | 100-125 4-5 | 150 6 | 200-250 8-10 | 300 12 |
|---|---|---|---|---|---|
| A | 195 | 266 | 328 | 386 | 391 |
| B | 95 | 109 | 109 | 164 | 164 |



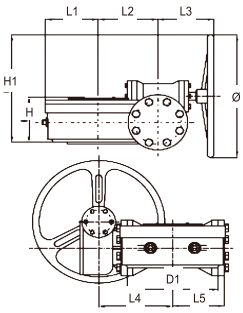

**Cast Iron 1-Stage Worm Gear and Handwheel**
**Carbon Steel Gear Box Shaft**

| VALVE DIAMETER | D1 | ø | H | H1 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|
| DN40 - DN80 | 65 | 150 | 33 | 70 | 216 | 45 | 127 |
| DN100 - DN150 | 90 | 150 | 33 | 70 | 216 | 45 | 127 |
| DN200 - DN250 | 125 | 285 | 36 | 76 | 303 | 63.5 | 170 |
| DN300 - DN350 | 125 | 285 | 40 | 79 | 300 | 80 | 190 |
| DN400 | 175 | 385 | 79 | 232.5 | 300 | 80 | 190 |
| DN450 - DN550 | 175 | 390 | 108 | 251 | 397/427 | 120 | 279 |




**Cast Iron 2-Stage Worm Gear and Handwheel**
**Carbon Steel Gear Box Shaft**

| VALVE DIAMETER | D1 | ø | H | H1 | L1 | L2 | L3 | L4 | L5 |
|---|---|---|---|---|---|---|---|---|---|
| DN600 - DN650 | 210 | 285 | 125 | 271 | 107 | 100 | 156 | 168 | 107 |
| DN700 - DN800 | 300 | 425 | 149 | 378 | 146 | 140 | 197 | 230 | 146 |
| DN900 - DN1000 | 300 | 425 | 185 | 409 | 201 | 196 | 203 | 279 | 201 |
| DN1100 | 350 | 425 | 185 | 409 | 201 | 196 | 203 | 279 | 201 |
| DN1200 | 350 | 425 | 216 | 423 | 185 | 240 | 203 | 311 | 255 |




## INSTALLATION & OPERATION GUIDE

1. Ensure sufficient space for valves for easy installation, operation, maintenance and replacement.
2. Verify the valves are suitable for the operating condition such as medium, operating pressure / temperature, etc.
3. Check the I.D. of the flange and pipe to ensure free disc movement.
4. Valves shall be mounted on flanges only after the counter flanges have been welded to pipe and cooled down to the atmospheric temperature. Welding heat may damage the rubber seat of the valves. Never weld the flanges with valves installed. No gasket is required for installation of rubber seated butterfly valves.
5. Position the valves carefully between flanges. Accurate centering between flanges is essential to prevent any damages and problems during operation.
6. Valves should be installed by placing bolts through the hole and tightening carefully, ensuring even contact between the flange and seat. Too tight of space may cause damages to the seat and should be avoided.
7. Cross tighten all the bolts diagonally to distribute the loads evenly over the valves.
8. Turning the valves to ensure sufficient disc clearance.
9. Valves equipped with manual operators must be operated manually. Excessive external force on the operation of valve may damage the valve and / or operator.
10. Blind flange with short pipe should be used for dead end installation.



Exclusive Distributor :
**ENVALCO SDN. BHD.** (1039097-M)
No. 30, Jalan PJU 3/46, Sunway Damansara Technology Park, 47810 Petaling Jaya, Selangor Darul Ehsan, Malaysia
T: 603 - 7883 0018 | F : 603 - 7883 0012 | E : enquiry@envalco.com.my | W : www.envalco.com.my