KOFLOW

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# FIGURE NUMBER SYSTEM

## Butterfly Valve Figure Number System


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | Size | Xxin; xx, mm | | | | | |
| 2 | Operation type | 1-Bare Stem | 3-Worm Gear Operated | 6 **-Air Operated | 7□-Hydraulic Operated | 9-Electric Operated | Manual Operated (omit) |
| 3 | Valve Type | D-Butterfly Valve $D_H$ Check Butterfly Valve $D_K$ Vacuum Butterfly Valve $D_{TF}$-Aeration Butterfly Valve DS- Expansion Butterfly Valve | | | | | |
| 4 | Pressure | 0a-PN0.25 | 0b-PN0.6 | 0-PN1.0 | 1-PN1.6 class150 | 2-PN2.5 | 3-class300 |
| | | 4-PN4.0 class400 | 6-PN6.4 class600 | 9-class900 | 10-PN10.0 | 1a-class125 | 2a-class250 |
| 5 | Connection Ends | RF-Raised Face | FF-Flat Face | MFM-Male and Female Face | RJ-Ring Joint | BW-Buttweld | WS-Wafe with 4 lugs<br>WL-Wafe with no lug<br>WF- Single Reinforcement Wafer Type<br>WU- Unthreaded Hole Wafer Type<br>LL-Full Lug Screw Wafer Type<br>LU-U-U LU-U-U Screw Wafer Type |
| 6 | Structure Type | 1-Middle eccentric struccture | 2-Single eccentric struccture | 3-Double eccentric structure | 4-Veriable eccentric struccture | 5-eccentric struccture | |
| 7 | Basic Material | C-WCB | C-C5 | C6-WC6 | C9-WC9 | BL-LCB | CL-LCC |
| | | 8-CF8 | 8M-CF8M | 3-CF3 | 3M-CF3M | ML-MONEL | H-IRON |
| 8 | Material of Seat face or Liner | H- Cr13 S.S | E-18-8 S.S | R-Mo2Ti S.S | F- F-PTFE | | |
| | | D-Nitriding Steel | M-Monel Alloy | Y-Hard Face | X- Rubber | | |

**Note:**

1、Use "W" to express seat sealing surface material which is processed directly by valve body.

2、When the materials of sealing surface are different, use low hardness material symbol to express.

3、Special Requirements not shown ,should be indicated in the purchase order

4、The models listed in the sample book have no reference to pressure、sizes and valve material symbols, they are to bedecided by users.

5、**6S Spring Return, 6A Air Operated Control

6、B-Pressure Retaining Type, Q-Full Pressure Type, S-Locked Type

7、PN＜0.25MPa, Omit Pressure

## For example

### 6＂-3D1RF5CH

Butterfly valve, 6＂ ,Worm Gear Operated ,ANSI CLASS150, RF Flange Ends, Triple eccentric stricture, Body& Disc Cast Steel WCB, 13Cr face Seat.

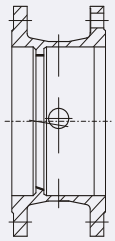
### 150--3D1RF5CH

Butterfly valve, DN150 PN16, Worm Gear Operated, ANSI CLASS150, RF Flange Ends, Triple eccentric stricture, Body& Disc Cast Steel WCB, 13Cr face Seat.

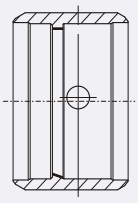
# BUTTERFLY VALVE DESIGN FEATURES

Butterfly valves are used to open and close (seal type) or adjust the medium flow in pipes in the fields of food stuff, drinks, chemical, industrial water treatment, high-rise constructions, water supply and drainage etc.. They are mainly structured as following:

1、Simple structure, small sizes, light weight and low installation dimensions. According to the types of body connection, they are basically classified to wafer type (including lug wafer type), flanged and welded.

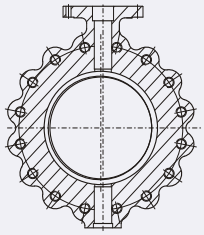


Flanged Connection



Butt-welded Connection

Wafer Connection

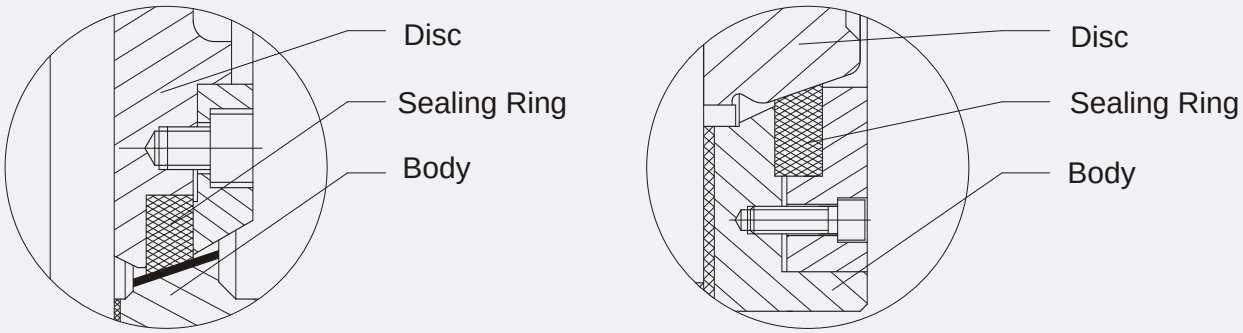


Lug Wafer Connection

2、Sealing materials may be soft or hard, placed on body or disc, to meet different working conditions, and to effect good seal and long life.

1) Soft sealing structure (see fig. a), is applicable for singleand double eccentric butterfly valves, pressure rating CLASS600. Centered sealing structure is applicable for pressure ating ≤CLASS 250. Sealing ring (PTFE) is placed on the valve body to feature the following:

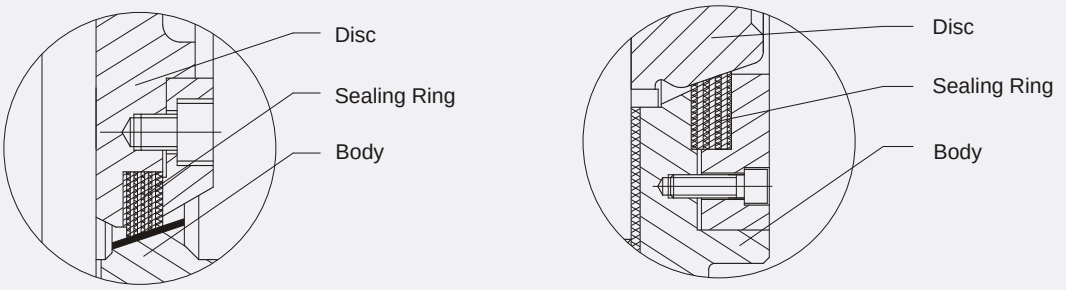
a) To effect dependable seal with no need of accessorial sealingring or metal bracing ring.
b) Bidirectional leakproof seal.
c) Little maintenance and long service life.




Soft Sealing Structure ( fig.a)

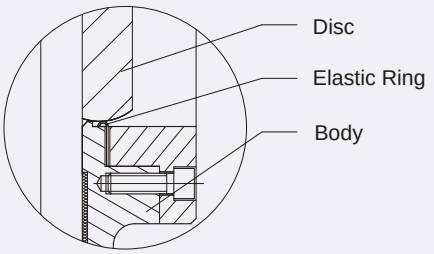
# BUTTERFLY VALVE DESIGN FEATURES

2) Multilayer Hard Seal Structure (See fig. b)
Multilayer hard seal structure is applicable for single, double and triple eccentric butterfly valves, pressure rating ≤CLASS600. And, triple eccentric butterfly valve can maintain two-way leak-tightness. Multilayer sealing ring is composite of stainless steel and nonmetal material. The nonmetal material can be flexible graphite, PTFE or nonasbestos material etc. according to the actual working conditions.



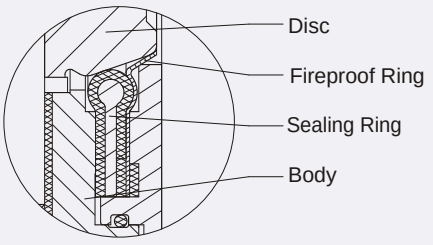

Multilayer Hard Seal Structure ( fig.b)

3) Elastic ring hard seal structure (see fig. c) is of the structure of J-type metal sealing ring. It is applicable for single and double eccentric butterfly valves, pressure rating ≤CLASS 300. Provided with fireproof structure to adapt to conditions with great temperature changes, it is featured by outstanding seal, long service life and easy workmanship.




Elastic Ring Hard Seal Structure ( fig.c)

3、Fireproof butterfly valves (see fig. d) can stop the expansion of fire. Once the sealing seat of butterfly valve is on fire, the stainless Steel sealing ring will act to make butterfly valve immediately sealed.



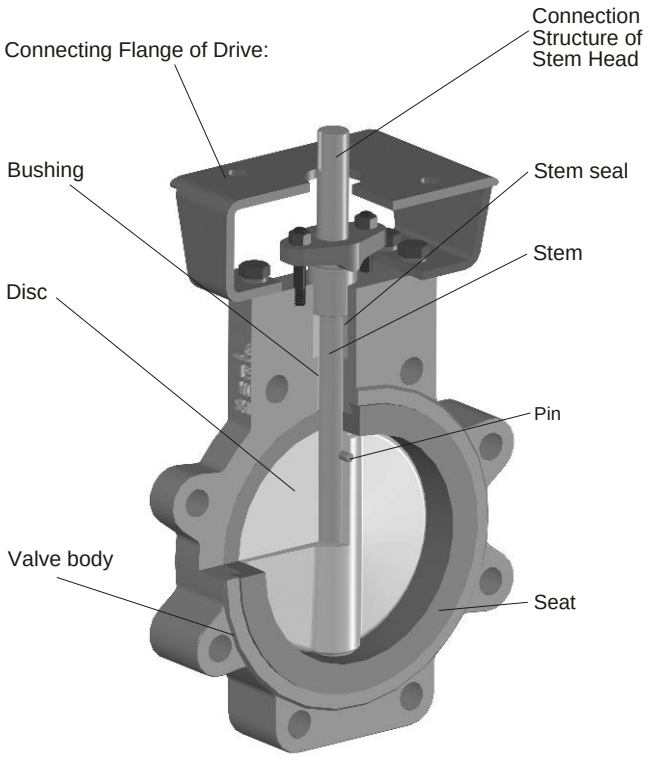

Soft Seal Fireproof Structure ( fig.d)

4、When butterfly valve is fully opened, flow resistance is low.
When partially opened, it may carry out sensitive flow control.

5、Low driving moment, easy and quick operation.

# CENTER LINE SEALING BUTTERFLY

## Design characteristics of resilient seated butterfly




### Connecting Flange of Drive:

Applicable for manual, worm gear, electric and pneumatic connection devices (2"~24" to ISO5211).

### Bushing:

used as valve stem support, positive shaft correction and brake support. There are bushings of low friction coefficient at the two ends of stem to reduce the frictional force of stem and open-close torque of valve.

### Disc:

Streamlined design of disc, the upper and lower stem ends in close contact with the seat to avoid medium leaking from the stem surface. Accurate disc excircle in precise match with the seat to ensure low open-close moment of valve and long service life of seat under the state of sealed. The shape of disc differs from the type of connection to the stem, and the flow coefficient of valve is closely associated with the structural type of disc.

### Valve body, classified to the following according to structural types:

1. WS- four-lug shaftless body, applicable for DN50~DN600. 2. WL- lugless body, applicable for DN50~DN300. 3. WF- single reinforcement body, applicable for DN550~DN1200. 4. WU-Unthreaded body, applicable for DN700~DN1200. 5. LL- lug wafer body, applicable for DN500~DN600. 6. LU-U screw body, applicable for DN700~DN1200. 7. TH- threaded body, applicable for DN50~DN150. 8. GR- clamped body, applicable for DN650~DN300.

### Connection Structure of Stem Head:

According to the difference in driving mechanism, there may be key connected, opposite flat or square (flat or square applicable for 2"~24").

Stem seal: sealing material may be soft graphite, PTFE or rubber (O-ring) according to working conditions and medium.

Stem: for DN ⩽ 24", stem is one-shaft structure; for DN>24", stem is segmental (upper and lower shafts) structure. Stem and disc are connected by pin to guarantee the accurate position of disc switch.

Pin: to guarantee vibration protection, and the connection between shaft and disc, there are three types of connection between stem and disc.
1. Taper pin connection, applicable for DN50~DN1200. 2. Semi-shaft pinless connection, applicable for DN50~DN600. 3. Total-shaft pinless connection, applicable for DN50~DN300.

Seat: nonexpansion, resistance against expansion and breakage. Pressure mould soft sealing material. The dovetail groove on the seat in contact with the body to ensure the seal between the seat and body, and that the connecting gasket to flange can be omitted. For repair, just replace the seat directly, thus to improve the service life of valve.
The structural types of our butterfly valve seat: 1. Dovetail Seat 2. Cylindrical Seat 3. Shoe-type Seat 4. Vulcanized Seat

# CENTER LINE SEALING BUTTERFLY

## Structural Type of Body

WS Four-lug Body

LU-U Screw Body

GR-Clamped Body

LL-Lug Wafer Body

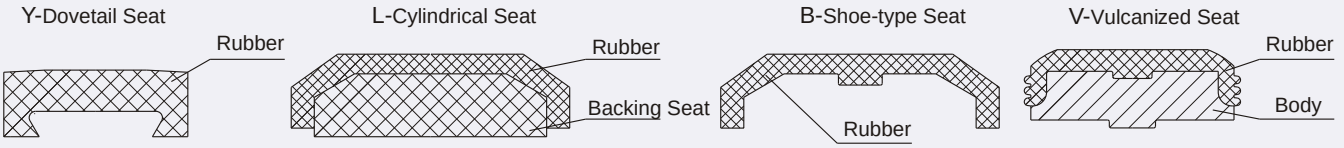
WL-Lugless Body

TH-Threaded Body

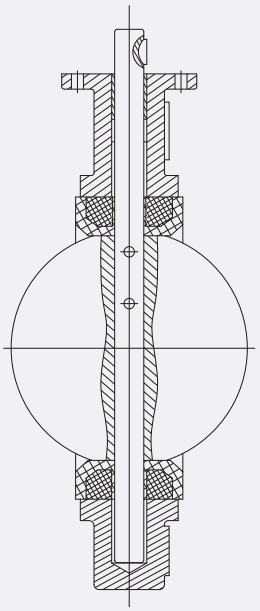
WU-Unthreaded Hole Body

WF-SingleReinforcement Body

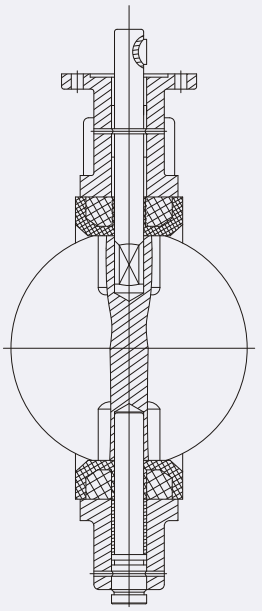
## Structural Type of Valve Seat (Section)



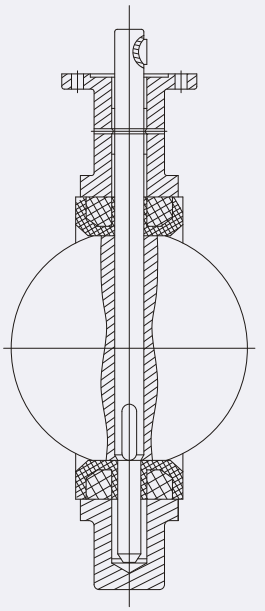

## Connection Structure between Disc and valve shaft



Taper pin connection
applicable for DN50~DN1200.



Semi-shaft pinless connection
applicable for DN50~DN600.



Total-shaft pinless connection
applicable for DN50~DN300.

# CENTER LINE SEALING BUTTERFLY

## Flow Coefficients(Cv Values)

The flow coefficient of valve is closely associated with the structure of disc. We produce the following two types of commonly used disc structure, used for reference to choose the flow coefficient of valve.

1、Semi-shaft disc (Fig. 1)

2、Taper pin connection disc and total-shaft disc (Fig. 2)

Fig. 1

Fig. 2

### Semi-shaft Pinless Butterfly Valves

| Size (mm) | | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|
| DN | NPS | | | | | | | | | |
| 50 | 2" | 0.2 | 5 | 9 | 17 | 27 | 53 | 70 | 115 | 145 |
| 65 | 2-1/2" | 0.4 | 8 | 15 | 26 | 42 | 83 | 105 | 175 | 225 |
| 80 | 3" | 0.6 | 12 | 22 | 38 | 63 | 125 | 160 | 260 | 325 |
| 100 | 4" | 0.8 | 17 | 42 | 73 | 120 | 235 | 305 | 510 | 590 |
| 125 | 5" | 2 | 45 | 88 | 155 | 250 | 490 | 625 | 1000 | 1125 |
| 150 | 6" | 3 | 89 | 145 | 250 | 410 | 800 | 1030 | 1650 | 1950 |
| 200 | 8" | 4 | 148 | 250 | 420 | 700 | 1300 | 1750 | 2725 | 3250 |
| 250 | 10" | 5 | 232 | 390 | 670 | 1150 | 2150 | 2750 | 4300 | 5000 |
| 300 | 12" | 6 | 342 | 550 | 1000 | 1600 | 3100 | 4050 | 5000 | 7500 |

### Table of Flow Coefficient of Taper Pin Connection Disc and Total-shaft Pinless Butterfly Valves

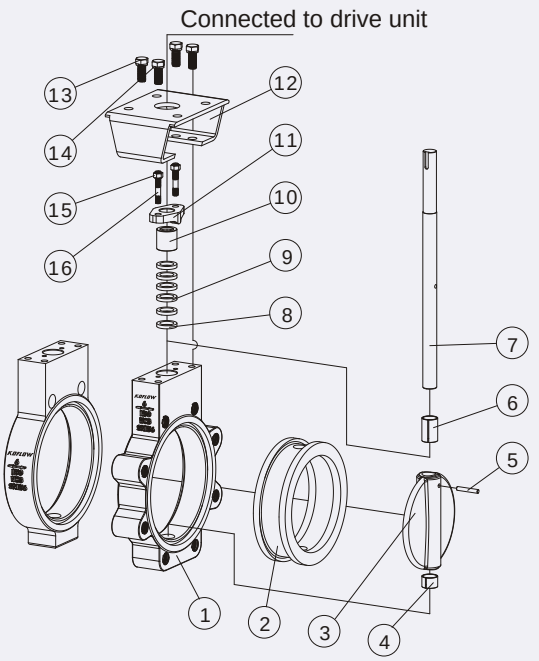
| Size (mm) | | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|---|---|---|---|---|---|---|---|---|---|---|
| DN | NPS | | | | | | | | | |
| 50 | 2" | 0.06 | 3 | 7 | 15 | 27 | 44 | 70 | 105 | 115 |
| 65 | 2-1/2" | 0.10 | 6 | 12 | 25 | 45 | 75 | 119 | 178 | 196 |
| 80 | 3" | 0.20 | 9 | 18 | 39 | 70 | 116 | 183 | 275 | 302 |
| 100 | 4" | 0.30 | 17 | 36 | 78 | 139 | 230 | 364 | 546 | 600 |
| 125 | 5" | 0.50 | 29 | 61 | 133 | 237 | 392 | 620 | 930 | 1022 |
| 150 | 6" | 0.80 | 34 | 95 | 153 | 257 | 422 | 706 | 1154 | 1579 |
| 200 | 8" | 2 | 56 | 154 | 251 | 422 | 693 | 1158 | 1892 | 2165 |
| 250 | 10" | 3 | 87 | 238 | 385 | 654 | 1073 | 1794 | 2931 | 3353 |
| 300 | 12" | 4 | 153 | 417 | 681 | 1145 | 1879 | 3142 | 5132 | 5827 |
| 350 | 14" | 6 | 183 | 500 | 816 | 1372 | 2252 | 3765 | 6150 | 7037 |
| 400 | 16" | 8 | 271 | 740 | 1208 | 2031 | 3333 | 5573 | 9104 | 10416 |
| 450 | 18" | 11 | 318 | 867 | 1417 | 2382 | 3909 | 6535 | 10676 | 12215 |
| 500 | 20" | 14 | 415 | 1133 | 1851 | 3112 | 5107 | 8538 | 13948 | 15959 |
| 600 | 24" | 22 | 541 | 1482 | 2421 | 4069 | 6678 | 11165 | 18240 | 20869 |
| 700 | 28" | 36 | 1813 | 3639 | 6636 | 10000 | 19449 | 22768 | 34898 | 49500 |
| 750 | 30" | 37 | 2080 | 4406 | 9546 | 17010 | 28147 | 44545 | 66818 | 73426 |
| 800 | 32" | 45 | 2387 | 4791 | 8736 | 13788 | 20613 | 31395 | 48117 | 38250 |
| 900 | 36" | 260 | 3050 | 6730 | 12740 | 20220 | 32500 | 52500 | 79600 | 87500 |
| 1000 | 40" | 284 | 4183 | 8395 | 15307 | 24159 | 36166 | 55084 | 84425 | 119750 |
| 1050 | 42" | 350 | 4095 | 9040 | 17108 | 27150 | 43640 | 70500 | 106890 | 117500 |
| 1200 | 48" | 455 | 5365 | 11840 | 22400 | 30600 | 51200 | 92300 | 140000 | 154000 |

# CENTER LINE SEALING BUTTERFLY

## Sealing Principle of Centered Seal Butterfly Valve

With the disc seal center of butterfly valve and rotation center of stem overlapped, sealing load will be produced between the sealing faces of seat and disc under certain magnitude of interference, thus to ensure effective seal of valve. Lined with rubber on body, this structure is applicable for medium and small-bore butterfly valves. Due to the deformation under extrusion, during the process of opening and closing, disc is always under extrusion. So, the upper and lower valve shafts are seriously extruded, which can be bad to the service life of valve. And, the open-close moment of valve is relatively high.The defect is that disc and seat are always under extrusion, scratch, high resistance and serious abrasion. To overcome extrusion and scratch and to ensure good seal, seat basically uses rubber or PTFE, or other elastic materials. However, temperature can be a problem. This is why butterfly valves are, conventionally, not resistant to high temperature.

## Structural Diagram of Centered Seal Butterfly Valve




## Materials list

| No. | Part Name | Materials | Opptional Materials |
|---|---|---|---|
| 1 | Body | Cast Iron | Ductile Iron |
| 2 | seat | NBR or EPDM | Neoprene、VITON、PTFE |
| 3 | Disc | Ductile Iron | Aluminum Bronze、SS、Monel |
| 4 | Bushing | PTFE | Luberized Bronze |
| 5 | Pin | - | Monel |
| 6 | Bushing | PTFE | Luberized Bronze |
| 7 | Stem | - | 316、Monel |
| 8 | Packing Seat | - | - |
| 9 | Packing | Graphite | |
| 10 | Packing Bushing | - | SS |
| 11 | Gland | Carbon Steel | SS |
| 12 | Yoke | Carbon Steel | - |
| 13 | bolts | - | SS |
| 14 | Gasket | Carbon Steel | SS |
| 15 | Stud | - | SS |
| 16 | Nut | - | SS |

## Technical Specification

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Design Standard | | GB/T12238 | | | API609,MSS SP-67 | | |
| Pressure-Temperature Rating | | GB/T12224 | | | API609 | | |
| Face-Face | | GB/T12221 | | | API609 | | |
| Flange Ends | | GB/T9113 、JB/T79 | | | ASME B16.1\B16.5\B16.47\BS4504 | | |
| Inspection &Test | | JB/T9092 、GB/T13927 | | | API598 | | |
| NorminalPressure(MPa) | | 1.0 | 1.6 | 2.0 | CLASS125 | CLASS150 | CLASS250 |
| Test Pressure | Shell Test | 1.5 | 2.4 | 3.0 | 1.55 | 2.94 | 3.11 |
| | High Pressure Seal Test | 1.1 | 1.76 | 2.2 | 1.13 | 2.16 | 2.28 |
| | Low Pressure Seal Test | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Applicable Temperature | | Different raw material for different work temperature | | | | | |
| Applicable Medium | | Water、oil、gas and other causticity medium(Different raw material for different medium) | | | | | |

# CENTER LINE SEALING BUTTERFLY

## Resilent Seated Butterfly Torques (NM)

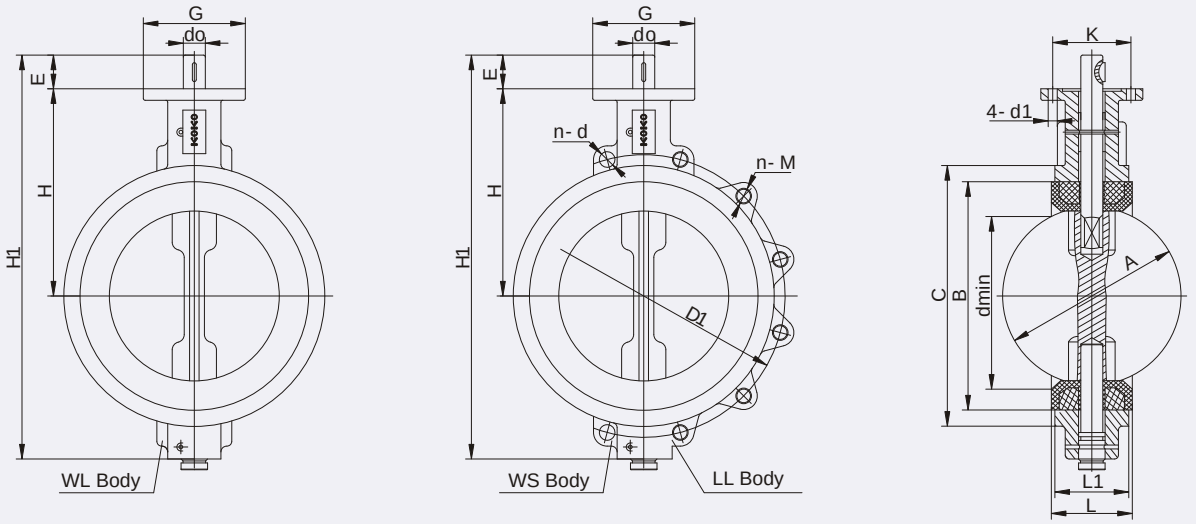
| Size (mm) | | Pressure | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DN | NPS | PN1.0MPa | PN1.6MPa | PN2.0MPa | 50PSI | 100PSI | 150PSI | 200PSI | 285PSI |
| 50 | 2" | 12 | 13 | 18 | 16 | 17 | 18 | 19 | 20 |
| 65 | 2-1/2" | 15 | 17 | 21 | 22 | 24 | 25 | 26 | 28 |
| 80 | 3" | 22 | 23 | 28 | 30 | 31 | 33 | 35 | 37 |
| 100 | 4" | 37 | 40 | 50 | 42 | 45 | 49 | 52 | 58 |
| 125 | 5" | 58 | 62 | 88 | 65 | 71 | 76 | 82 | 91 |
| 150 | 6" | 94 | 102 | 136 | 99 | 107 | 115 | 123 | 136 |
| 200 | 8" | 173 | 192 | 211 | 167 | 176 | 186 | 195 | 211 |
| 250 | 10" | 286 | 323 | 363 | 277 | 295 | 313 | 331 | 363 |
| 300 | 12" | 429 | 490 | 553 | 440 | 464 | 488 | 512 | 553 |
| 350 | 14" | 550 | 625 | 734 | 586 | 618 | 649 | 680 | 734 |
| 400 | 16" | 755 | 846 | 1551 | 1241 | 1307 | 1373 | 1439 | 1551 |
| 450 | 18" | 1012 | 1131 | 1969 | 1576 | 1660 | 1744 | 1827 | 1970 |
| 500 | 20" | 1350 | 1431 | 2077 | 1660 | 1749 | 1837 | 1926 | 2076 |
| 600 | 24" | 2111 | 2300 | 4200 | 3360 | 3539 | 3718 | 3896 | 4200 |
| 700 | 28" | 3272 | - | - | 3752 | 4213 | 4581 | - | - |
| 750 | 30" | 3766 | - | - | 4488 | 4903 | 5317 | - | - |
| 800 | 32" | 4307 | - | - | 5128 | 5548 | 6031 | - | - |
| 900 | 36" | 5257 | - | - | 6426 | 6878 | 7360 | - | - |
| 1000 | 40" | 8925 | - | - | 7787 | 8366 | 8925 | - | - |
| 1050 | 42" | 9023 | - | - | 7880 | 8432 | 9023 | - | - |
| 1200 | 48" | 12553 | - | - | 10801 | 11732 | 12554 | - | - |

## Resilent Seated Butterfly Product Line

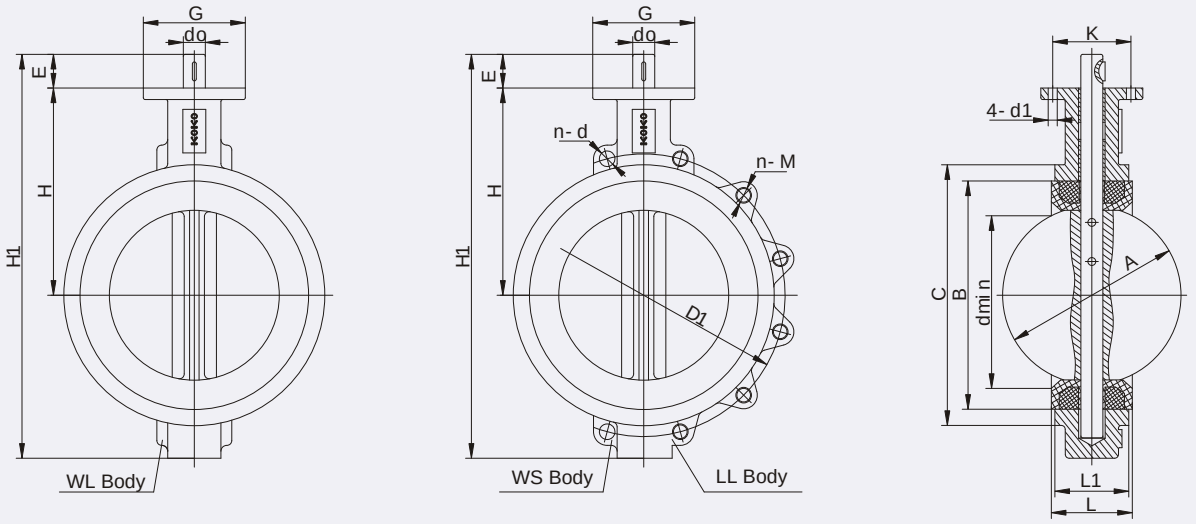
| Size (mm) | | Pressure | | | | | |
|---|---|---|---|---|---|---|---|
| DN | NPS | PN1.0MPa | PN1.6MPa | PN2.0MPa | CLASS125 | CLASS150 | CLASS250 |
| 50 | 2" | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ |
| 65 | 2-1/2" | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ |
| 80 | 3" | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ |
| 100 | 4" | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ |
| 125 | 5" | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ |
| 150 | 6" | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ | ●/△/★/☆ |
| 200 | 8" | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ |
| 250 | 10" | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ |
| 300 | 12" | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ |
| 350 | 14" | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ |
| 400 | 16" | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ |
| 450 | 18" | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ |
| 500 | 20" | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ |
| 600 | 24" | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ | △/★/☆ |
| 700 | 28" | △/★/☆ | / | / | △/★/☆ | / | / |
| 750 | 30" | △/★/☆ | / | / | △/★/☆ | / | / |
| 800 | 32" | △/★/☆ | / | / | △/★/☆ | / | / |
| 900 | 36" | △/★/☆ | / | / | △/★/☆ | / | / |
| 1000 | 40" | △/★/☆ | / | / | △/★/☆ | / | / |
| 1050 | 42" | △/★/☆ | / | / | △/★/☆ | / | / |
| 1200 | 48" | △/★/☆ | / | / | △/★/☆ | / | / |

Note: ● stands for hand le operated valves; ☆stands for gearb ox operated valves;
△ stands for air operated valves; ★stands for electrically operated valves;
/ standsfor no option of this.
Those not covered in the table can be custom made to users' requirements.

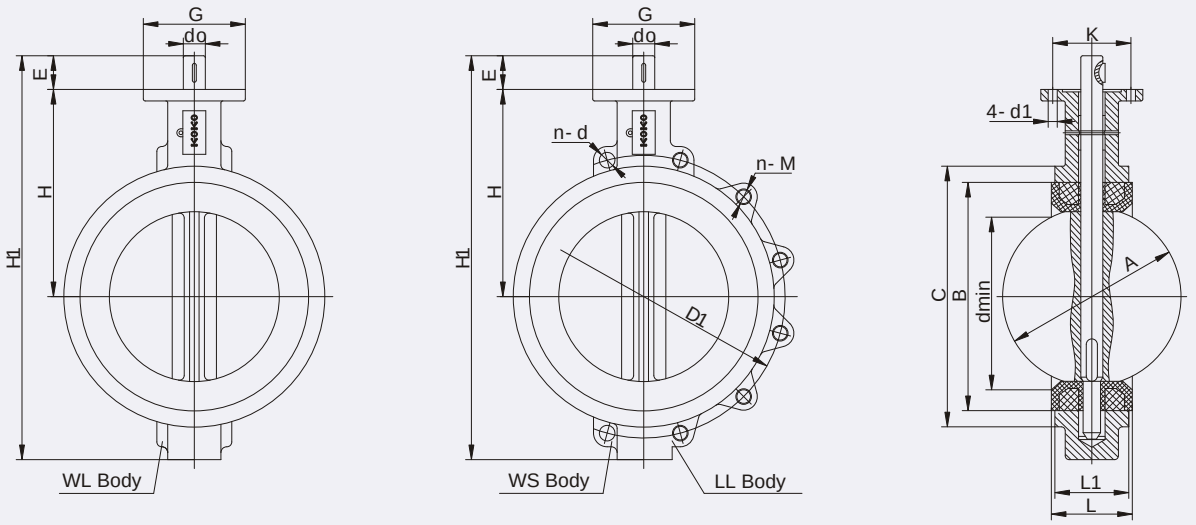
# CENTER LINE SEALING BUTTERFLY




Structure of Semi-shaft Pinless Connection Butterfly Valve(DN50~DN300)




Structure of Taper Pin Connection Butterfly Valve(DN50~DN300)




Structure of Total-shaft Pinless Connection Butterfly Valve(DN50~DN300)

# CENTER LINE SEALING BUTTERFLY

## Main Outline Dimensions

mm

| Size | NPS | 2 | 2 1/2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| | DN | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 |
| L1 | | 43 | 46 | 46 | 52 | 56 | 56 | 60 | 68 | 78 |
| L | | 47 | 50 | 50 | 56 | 60 | 60 | 64 | 72 | 82 |
| A | | 53 | 64.5 | 78.8 | 104 | 123.3 | 156 | 202.5 | 250.5 | 301.6 |
| B | | 76 | 89 | 104 | 135 | 159 | 189 | 238 | 292 | 345 |
| C | | 89 | 108 | 120 | 150 | 181 | 208 | 260 | 320 | 375 |
| dmin | | 32.3 | 46.1 | 64.4 | 86.3 | 110.6 | 134.8 | 192.4 | 241.7 | 291.8 |
| D1 | PN1.0 | 125 | 145 | 160 | 180 | 210 | 240 | 295 | 350 | 400 |
| | PN1.6 | 125 | 145 | 160 | 180 | 210 | 240 | 295 | 355 | 410 |
| | PN2.0 | 120.5 | 139.5 | 152.5 | 190.5 | 216 | 241.5 | 298.5 | 362 | 432 |
| | CLASS125 | 120.5 | 139.5 | 152.5 | 190.5 | 216 | 241.5 | 298.5 | 362 | 432 |
| | CLASS250 | 106.5 | 125.5 | 144.5 | 176.5 | 211.5 | 246.5 | 303.5 | 357.5 | 418 |
| n-d | PN1.0 | 4-18 | 4-18 | 8-18 | 8-18 | 8-18 | 8-22 | 8-22 | 12-22 | 12-22 |
| | PN1.6 | 4-18 | 4-18 | 8-18 | 8-18 | 8-18 | 8-22 | 12-22 | 12-26 | 12-26 |
| | PN2.0 | 4-19 | 4-19 | 4-19 | 8-19 | 8-22 | 8-22 | 8-22 | 12-25 | 12-25 |
| | CLASS125 | 4-19 | 4-19 | 4-19 | 8-19 | 8-22 | 8-22 | 8-22 | 12-25 | 12-25 |
| | CLASS250 | 8-19 | 8-22 | 8-22 | 8-22 | 8-22 | 12-22 | 12-25 | 16-29 | 16-32 |
| n-M | PN1.0 | 4-M16 | 4-M16 | 8-M16 | 8-M16 | 8-M16 | 8-M20 | 8-M20 | 12-M20 | 12-M20 |
| | PN1.6 | 4-M16 | 4-M16 | 8-M16 | 8-M16 | 8-M16 | 8-M20 | 12-M20 | 12-M24 | 12-M24 |
| | PN2.0 | 4-5/8 | 4-5/8 | 4-5/8 | 8-5/8 | 8-3/4 | 8-3/4 | 8-3/4 | 12-7/8 | 12-7/8 |
| | CLASS125 | 4-5/8 | 4-5/8 | 4-5/8 | 8-5/8 | 8-3/4 | 8-3/4 | 8-3/4 | 12-7/8 | 12-7/8 |
| | CLASS250 | 8-5/8 | 8-3/4 | 8-3/4 | 8-3/4 | 8-3/4 | 12-3/4 | 12-7/8 | 16-1 | 16-1 1/8 |
| E | | 32 | 32 | 32 | 32 | 32 | 32 | 45 | 45 | 45 |
| H | | 161 | 175 | 181 | 200 | 213 | 226 | 260 | 292 | 337 |
| | | 100 | 113 | 124 | 152 | 152 | 165 | 205 | 253 | 277 |
| H1 | | 273 | 296 | 308 | 346 | 372 | 397 | 480 | 540 | 624 |
| | | 212 | 234 | 251 | 298 | 311 | 336 | 425 | 495 | 564 |
| do | | 12.7 | 12.7 | 12.7 | 15.9 | 19.0 | 19.0 | 22.2 | 28.6 | 31.7 |
| K | | 50 | 50 | 50 | 70 | 70 | 70 | 102 | 102 | 102 |
| G | | 78 | 78 | 78 | 92 | 92 | 92 | 125 | 125 | 140 |
| Weight (kg) PN1.0 PN1.6 | WL | 2.3 | 3.0 | 3.4 | 4.7 | 6.8 | 7.7 | 13.2 | 20.6 | 28.2 |
| | WL | 2.0 | 2.6 | 2.8 | 4.5 | 6.5 | 7.4 | 13.0 | 19.5 | 24.9 |
| | WS | 2.5 | 3.2 | 3.6 | 4.9 | 7.0 | 7.8 | 13.2 | 21.0 | 32.5 |
| | WS | 2.2 | 3.0 | 3.4 | 4.6 | 7.3 | 7.6 | 13.1 | 19.0 | 29.2 |
| | LL | 3.8 | 4.2 | 4.7 | 8.5 | 10.9 | 14.2 | 19.5 | 32.0 | 40.0 |
| | LL | 3.2 | 4.0 | 4.2 | 7.2 | 9.7 | 12.4 | 18.8 | 29.0 | 36.7 |
| Weight (kg) PN2.0 | WL | 2.3 | 3.0 | 3.4 | 4.7 | 6.8 | 9.7 | 16.3 | 26.1 | 34.9 |
| | WL | 2.0 | 2.6 | 2.8 | 4.5 | 6.5 | 9.4 | 16.1 | 25.0 | 31.6 |
| | WS | 2.5 | 3.2 | 3.6 | 4.9 | 7.0 | 9.8 | 16.3 | 26.5 | 39.2 |
| | WS | 2.2 | 3.0 | 3.4 | 4.6 | 7.3 | 9.6 | 16.2 | 24.5 | 35.9 |
| | LL | 3.8 | 4.2 | 4.7 | 8.5 | 10.9 | 16.2 | 22.6 | 37.5 | 46.7 |
| | LI | 3.2 | 4.0 | 4.2 | 7.2 | 9.7 | 11.4 | 21.9 | 34.5 | 43.4 |

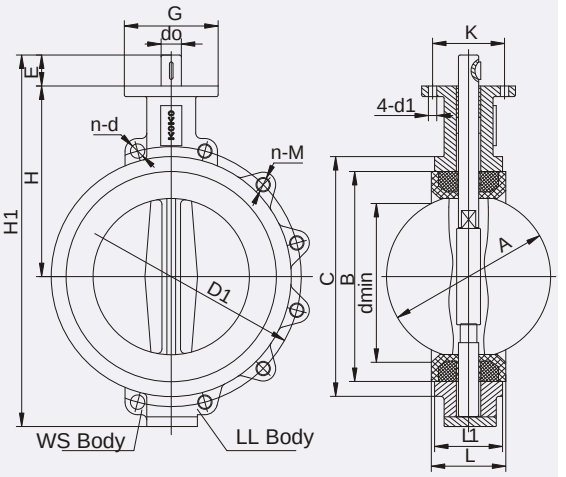
Note:Dimensions for mounting flange above mentioned conform BS4504 ,and top mounting conform to ISO5211.When requied, standards form other countries or any special requirements to are also available.

# CENTER LINE SEALING BUTTERFLY

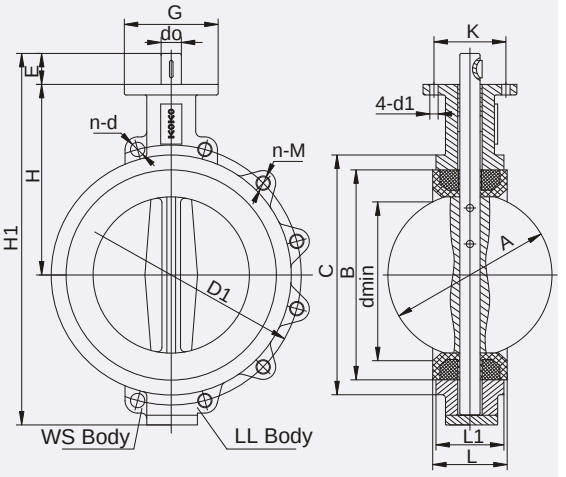
## Main Outline Dimensions

mm

| Size | NPS | 14 | 16 | 18 | 20 | 24 |
|---|---|---|---|---|---|---|
| | DN | 350 | 400 | 450 | 500 | 600 |
| L1 | | 76.5 | 85.7 | 104.6 | 130.3 | 151.4 |
| L | | 80 | 90 | 109 | 135 | 156 |
| A | | 333.3 | 389.6 | 440.5 | 491.6 | 592.5 |
| B | | 375.1 | 439.5 | 490.5 | 535.4 | 654 |
| C | | 405 | 470 | 521 | 565 | 693 |
| dmin | | 322 | 379.1 | 426.8 | 472.7 | 571.6 |
| D1 | PN1.0 | 460 | 515 | 565 | 620 | 725 |
| | PN1.6 | 470 | 525 | 585 | 650 | 770 |
| | PN2.0 | 476 | 540 | 578 | 635 | 749.5 |
| | CLASS125 | 476 | 540 | 578 | 635 | 749.5 |
| | CLASS250 | 481.5 | 535 | 592.5 | 649.5 | 768.5 |
| n-d | PN1.0 | 16-22 | 16-26 | 20-26 | 20-26 | 20-30 |
| | PN1.6 | 16-26 | 16-30 | 20-30 | 20-33 | 20-36 |
| | PN2.0 | 12-29 | 16-29 | 16-32 | 20-32 | 20-35 |
| | CLASS125 | 12-29 | 16-29 | 16-32 | 20-32 | 20-35 |
| | CLASS250 | 20-32 | 20-35 | 24-35 | 24-35 | 24-41 |
| n-M | PN1.0 | 16-M20 | 16-M24 | 20-M24 | 20-M24 | 20-M27 |
| | PN1.6 | 16-M24 | 16-M27 | 20-M27 | 20-M30 | 20-M33 |
| | PN2.0 | 12-1 | 16-1 | 16-1 1/8 | 20-1 1/8 | 20-1 1/4 |
| | CLASS125 | 12-1 | 16-1 | 16-1 1/8 | 20-1 1/8 | 20-1 1/4 |
| | CLASS250 | 20-1 1/8 | 20-1 1/4 | 24-1 1/4 | 24-1 1/4 | 24-1 1/2 |
| E | PN1.0 | 45 | 51 | 51 | 64 | 70 |
| | PN1.6 | 45 | 72 | 72 | 82 | 82 |
| | PN2.0 | 45 | 72 | 72 | 82 | 82 |
| | CLASS125 | 45 | 72 | 72 | 82 | 82 |
| | CLASS250 | 45 | 72 | 72 | 82 | 82 |
| | | 368 | 400 | 422 | 480 | 562 |
| H1 | PN1.0 | 680 | 760 | 801 | 898 | 1091 |
| | PN1.6 | 680 | 781 | 822 | 916 | 1103 |
| | PN2.0 | 680 | 781 | 822 | 916 | 1103 |
| | CLASS125 | 680 | 781 | 822 | 916 | 1103 |
| | CLASS250 | 680 | 781 | 822 | 916 | 1103 |
| Do | PN1.0 | 31.6 | 33.2 | 38 | 41.1 | 50.6 |
| | PN1.6 | 31.6 | 38 | 42.9 | 45.7 | 54 |
| | PN2.0 | 42.9 | 50.6 | 54 | 63.4 | 75 |
| | CLASS125 | 42.9 | 50.6 | 54 | 63.4 | 75 |
| | CLASS250 | 42.9 | 50.6 | 54 | 63.4 | 75 |
| K | | 102 | 140 | 140 | 140 | 165 |
| G | | 140 | 197 | 197 | 197 | 276 |
| Weight (kg) | PN1.0 WS | 41.3 | 61.3 | 78.9 | 128.1 | 188.1 |
| | PN1.0 LL | 56 | 96 | 122.0 | 202 | 270 |
| | PN1.6 WS | 41.5 | 63 | 80.7 | 130 | 192 |
| | PN1.6 LL | 56 | 97.7 | 123.8 | 204 | 273.5 |
| | PN2.0 WS | 53.9 | 76.7 | 96 | 147 | 223 |
| | PN2.0 LL | 68.6 | 111.4 | 139 | 221 | 305 |




Structure of Semi-shaft Pinless
Connection Butterfly Valve(DN350~DN600)

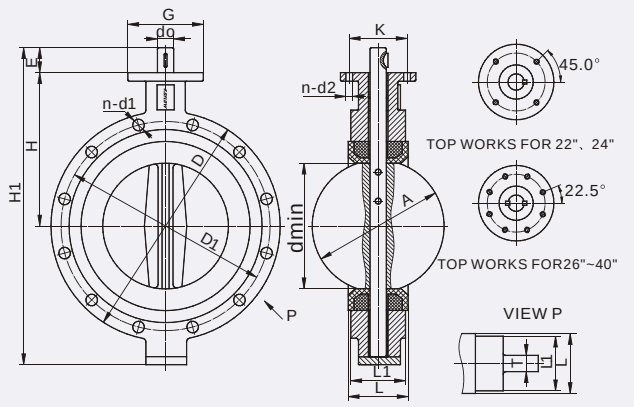



Structure of Taper Pin
Connection Butterfly Valve(DN350~DN600)

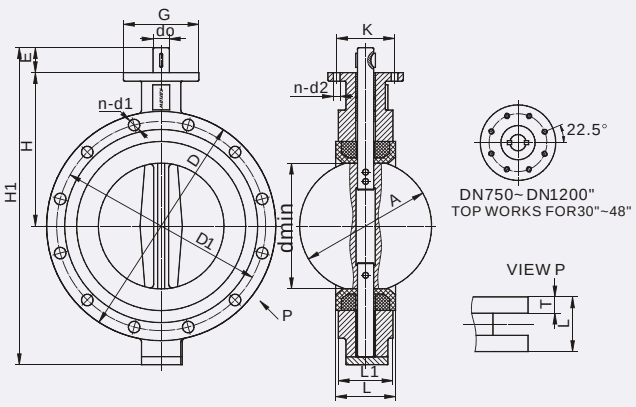
Note:Dimensions for mounting flange above mentioned conform to Bs4504, and top mounting conform to ISO5211.When requied,standards form other countries or any special requirements are also available.

# CENTER LINE SEALING BUTTERFLY

## Main Outline Dimensions




Structure of Single Flange Butterfly Valve(DN550~DN1000)




Structure of U-type Butterfly Valve(DN750~DN1200)

### Single Flange Butterfly Valve

mm

| Valve size | | L | L1 | D | D1 | dmin | n-d | G | K | n-d1 | do | T | H | H1 | E | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | | | | | | | | | | | | | | | |
| 22 | 550 | 156 | 151.4 | 745 | 680 | 529.9 | 20-33 | 276 | 165 | 4-22 | 51 | 30 | 537 | 972 | 66 | 175 |
| 24 | 600 | 156 | 151.4 | 824 | 725 | 571.6 | 20-31 | 276 | 165 | 4-22 | 51 | 30 | 562 | 1021 | 66 | 188 |
| 26 | 650 | 171 | 165 | 845 | 780 | 625.9 | 24-33 | 300 | 254 | 8-18 | 64 | 30 | 591 | 1063 | 66 | 271 |
| 28 | 700 | 169 | 163 | 895 | 840 | 675.6 | 24-31 | 300 | 254 | 8-18 | 64 | 30 | 624 | 1144 | 66 | 284 |
| 32 | 800 | 195 | 188 | 1015 | 950 | 772.1 | 24-34 | 300 | 254 | 8-18 | 64 | 30 | 672 | 1263 | 66 | 368 |
| 34 | 850 | 211 | 203 | 1070 | 1000 | 796.2 | 28-33 | 300 | 254 | 8-18 | 75 | 47 | 695 | 1294 | 118 | 685 |
| 40 | 1000 | 224 | 216 | 1230 | 1160 | 940.5 | 28-37 | 300 | 254 | 8-18 | 85 | 50 | 800 | 1521 | 141 | 864 |

Note:Dimensions for mounting flange above mentioned conform to Bs4504 PN10,and top mounting conform to ISO5211.When requied, standards form other countries or any special requirements are also available.

### U-Section Butterfly Valve

mm

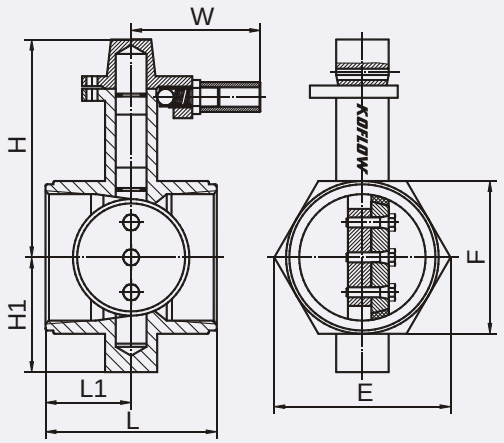
| Valve size | | L | L1 | D | D1 | dmin | n-d1 | G | K | n-d2 | do | T | H | H1 | E | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | | | | | | | | | | | | | | | |
| 30 | 750 | 173 | 167 | 984 | 914.4 | 725.5 | 28-1 1/4 UNC | 300 | 200 | 8-18 | 64 | 54 | 54 | 1286 | 66 | 367 |
| 36 | 900 | 211 | 203 | 1168 | 1085.8 | 840.5 | 32-1 1/2 UNC | 300 | 200 | 8-18 | 75 | 61 | 61 | 1494 | 118 | 591 |
| 42 | 1050 | 261 | 251 | 1346 | 1257.3 | 999 | 36-1 1/2 UNC | 300 | 200 | 8-18 | 95 | 67 | 67 | 1785 | 150 | 811 |
| 48 | 1200 | 266 | 276 | 1511 | 1422.4 | 1126.6 | 44-1 1/2 UNC | 350 | 200 | 8-22 | 105 | 70 | 70 | 1955 | 150 | 1823 |

Note:Dimensions for mounting flange above mentioned conform to ANSI B16.1 CLASS 125,and top mounting conform to ISO5211. When requied,standards form other countries or any special requirements are also available.

# CENTER LINE SEALING BUTTERFLY

## Thread End Butterfly Valve

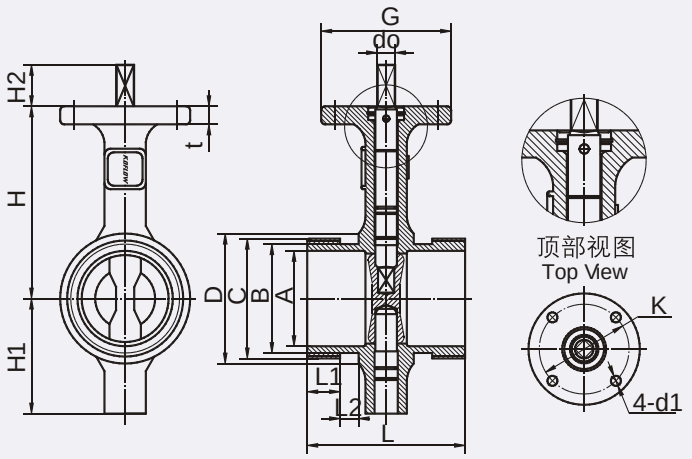
mm




Screwed Butterfly Valve

| Valve size | | L | L1 | H | H1 | W | E | F | Weight kg |
|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | | | | | | | | |
| 2 | 50 | 108 | 54 | 105 | 57 | 203 | 87.88 | 76.20 | 4.8 |
| 3 | 80 | 124 | 62 | 153 | 70 | 203 | 119.13 | 103.12 | 7.1 |
| 4 | 100 | 130 | 65 | 161 | 94 | 203 | 155.70 | 134.87 | 10.1 |
| 6 | 150 | 178 | 89 | 231 | 121 | 330 | 277.33 | 196.85 | 21.8 |

Note: Connected screw can be manufactured according to customer's requirements。




Clamped Butterfly Valve

## Groove End Butterfly Valve

mm

| Valve size | | L | L1 | L2 | H | H1 | H2 | A | B | C | D | Do | G | K | 4-d1 | T | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | DN | | | | | | | | | | | | | | | | |
| 2 1/2 | 65 | 97 | 16 | 9.5 | 126 | 74 | 32 | 62.5 | 72.3 | 76.1 | 87 | 10 | 90 | 70 | 4-9 | 12 | 3.4 |
| 3 | 80 | 97 | 16 | 9.5 | 131 | 80 | 32 | 76 | 84.9 | 88.9 | 99 | 10 | 90 | 70 | 4-9 | 12 | 3.9 |
| 4 | 100 | 116 | 16 | 9.5 | 149 | 94 | 32 | 101 | 110.1 | 114.3 | 126 | 12 | 90 | 70 | 4-9 | 12 | 5.4 |
| 5 | 125 | 134 | 16 | 9.5 | 172 | 107 | 32 | 127 | 135.5 | 139.7 | 159 | 12 | 90 | 70 | 4-9 | 12 | 10.5 |
| 6 | 150 | 134 | 16 | 9.5 | 183 | 123 | 32 | 150 | 160.9 | 165.1 | 178 | 16 | 90 | 70 | 4-9 | 14 | 11.8 |
| 8 | 200 | 148 | 19 | 11.0 | 205 | 149 | 32 | 202 | 214.4 | 219.1 | 231 | 26 | 90 | 70 | 4-9 | 14 | 16.0 |
| 10 | 250 | 160 | 19 | 12.7 | 260 | 186 | 45 | 253 | 268.3 | 273 | 283 | 24 | 125 | 102 | 4-11 | 18 | 32.6 |
| 12 | 300 | 166 | 19 | 12.7 | 285 | 213 | 45 | 303 | 318.3 | 324 | 334 | 24 | 125 | 102 | 4-11 | 18 | 41.5 |

Note：The Grove Dimensions above mentioned conform to ANSI/AWWA C606.Top mounting conform ISO5211.The groove dimensions can also meet standards from other countries。