# Butterfly Valve CBF02-TA(L)03

## Introduction of the valve

The valve body shall be one-piece wafer or lug design with extended neck and a concentric disc and seat configuration to allow for 2”-48” of piping insulation,have flange hole drilling per international flange standards and be provided with a non-corrosive bushing and self-adjusting stem seal. Flange locating holes shall be provided on wafer bodies to allow for quick and precise alignment during valve installation. The valve disc edge and hub on metal discs shall be spherically machined and hand polished for minimum torque and maximum sealing capability. The disc-to-stem connection shall be an internal Square design with no possible leak paths in the disc-to-stem connection. External disc-to-stem connections such as screws or pins are not allowed. The valve stem shall be one-piece design and be mechanically retained in the body neck and no part of the stem shall be exposed to the line media. The valve seat shall be a tongue-and groove design with a primary hub seal and a molded flange O-ring suitable for weld-neck and slip-on flanges. The seat shall totally encapsulate the body isolating the body from the line media and no flange gaskets shall be required. The wafer or lug valve shall be rated for bubble-tight shut-off for bidirectional service to 16 Bar)on sizes 2”-12” (50mm-300mm) and to 10 Bar on sizes 14”-48” (350mm-1200mm). The lug valve shall be rated for bubble-tight shut-off for dead end service to 16 Bar on sizes 2”-12” (50mm-300mm) and to 10 Bar on sizes 14”-48”(350mm-1200mm). The valve shall be tested for tight shut-off to 110% of the rated pressure.The Valve shall have the following approvals and certifications: CE/PED Certification, NSF/ANSI 61-2008 (Potable Water) Certification, SIL, ABS, Bureau Veritas, DNV

The products are used in a wide range of industries worldwide including:

- Chemical
- Beverage
- Brewing/Wine Making
- Pharmaceutical
- Food Processing
- Petroleum Refining & Oilfield
- Transportation
- Ultrapure Water
- Marine
- Pulp & Paper
- Mining
- Power/FGD
- Nuclear Power
- Irrigation
- Water & Wastewater Treatment
- Textile
- Desalination
- Steel Production

## Introduction of the valve

Valve Type:

CBF02-TA03

Body:

Shall be one-piece wafer or lug design with Extended neck to allow for 2”-48“ of piping insulation.

Flange locating holes shall be provided on wafer bodies to allow for quick and precise alignment during valve installation.

Flange hole drilling per international flange standard as specified.

A non-corrosive bushing and a self-adjusting stem seal shall be provided. No field adjustment shall be necessary to maintain optimum field performance.

Disc:

Disc edge and hub on metal discs shall be spherically machined and hand polished for torque and maximum sealing capability

Stem:

Shall be one-piece design.

Disc to stem connection shall be square shaft design with no possible leak paths in the disc-to-stem connection. External disc to stem connections such as disc screws or pins are not allowed.

Stem shall be mechanically retained in the body neck and no part of the stem shall be exposed to the line media.

Seat:

Shall be tongue-and-groove seat with a primary hub seal and a molded flange O-ring for weld neck and slip-on flanges.

The seat shall totally encapsulate the body isolating it from the line media and no flange gaskets shall be required.

Features

1.Small in size and light in weight. Easy installation and maintenance. It can be mounted wherever needed.

2.Simple and compact construction, quick 90degrees on-off operation.

3.Minimized operating torque, energy saving.

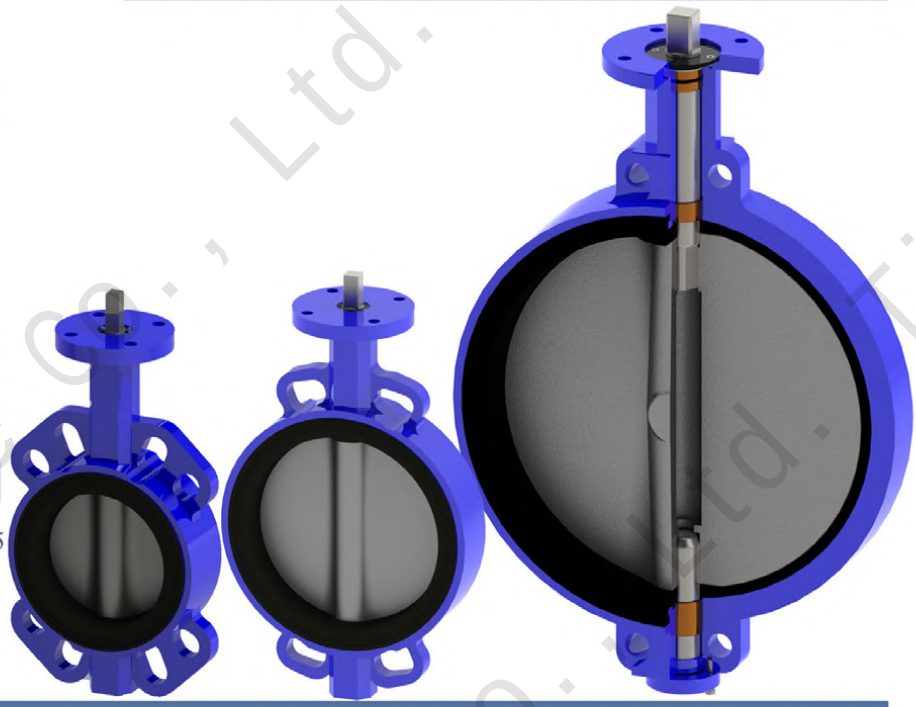
4.Bubbles-tight sealing with no leakage under the pressure test

5.Wide selection of materials, applicable for various medium.

6.Long service life. Standing the test of tens of thousands opening/closing operations.

7.Flow curve tending to straight line. Excellent regulation performance.

# Butterfly Valve CBF02-TA(L)03



## Max working pressure

DN50-DN300 16Bar

Flange PN6/10/16 /150LB/5K/10K/ “D”/”E”

DN350-DN1200 10Bar

Flange PN6/10/16 /150LB/5K/10K/ “D”/”E”

## Design

EN593 API 609 BS5155 EN1092 ISO5211

## Face to Face

DIN558-1 API609 DIN3202 ISO5752 BS5155

## Testing

EN 12266-1 ISO5208 API598

## Body

| Material | Referencesstandard | Coating |
|---|---|---|
| Cast iron | GG20 GG25 A126 | Epoxy Ral 5005 |
| Ductile iron | GGG40 GGG45 GGG50 A536 A395 | Epoxy Ral 5005 |
| Carbon steel | WCB WCC LCC LCB | Epoxy Ral 7011 |
| Stainless steel | CF8 CF8M CF3 CF3M SAF2507 SAF2205 | |
| Aluminuim-bronze | C95400 C95500 C95800 | |

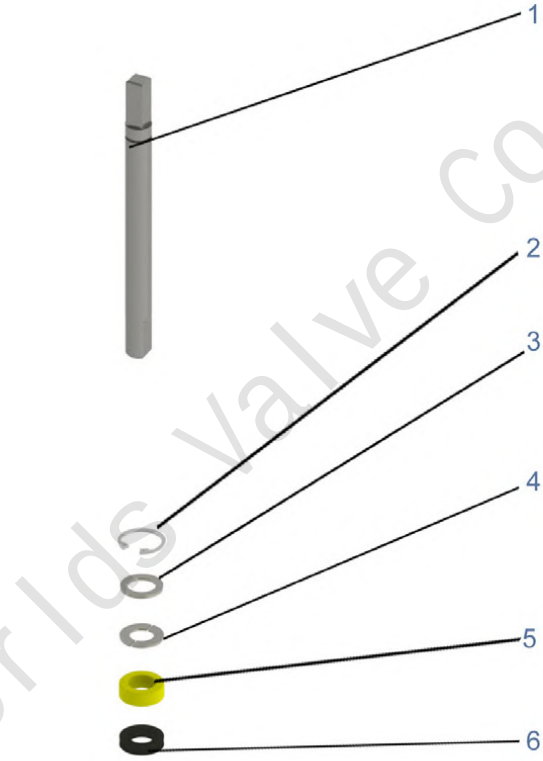
## Disc

| Material | References | Standard coating |
|---|---|---|
| Ductile iron | GGG40 GGG45 GGG50 A536 | Nickel Brass-Nikle |
| Carbon steel | WCB WCC LCC LCB | Nickel Brass-Nikle |
| Stainless steel | CF8 CF8M CF3 CF3M SAF2507 SAF2205 | |
| Aluminuim-bronze | C95400 C95500 C95800 | |

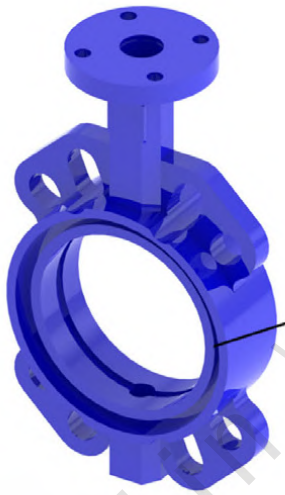
## Body Rubber Seat

| References | Desigation | Trade Name | Working temp | Applications |
|---|---|---|---|---|
| NBR | Nitrile Rubber | BUNA-N | -25/+100 | Oils ,Hydrocarbons ,Gas, Air ,Water |
| EPDM | Copolymer | EPDM | -35/+130 | Water ,Sea Water,Steam,Diluted Acids |
| FKM | Fluoroelastomer | VITON | -20/+200 | Oils, Hydrocarbons, Acids |
| CR | Polychloroprene | NEOPRENE | -20/+100 | Alkail, Bases,Water |
| NR | Natural Rubber | NR | -40/+80 | Glycols,Abrasive media |
| MVQ | Sillicon Rubber | SR | -60/+190 | Water,food,Drinks |
| CSM | Chlorosulfonate Polychloroprene | HYPALON | -20/+125 | Acids,mineral bases,Alcohols,Hydrocarbons |

## Main Spare Part Material Quality（DN50-DN80）



| | | | |
|---|---|---|---|
| 1 | Shaft | SS410 SS304 SS431 SS316<br>MONEL K500 17-4PH<br>C63000 C92200<br>2507 2205 |
| 2 | Retaining Ring | Sk7 |
| 3 | Thrust Washer | Stainless Steel<br>Carbon Steel |
| 4 | Shaft Retainer | Stainless Steel<br>Carbon Steel |
| 5 | Bushing | FRP |
| 6 | “O” Ring | NBR VITON |

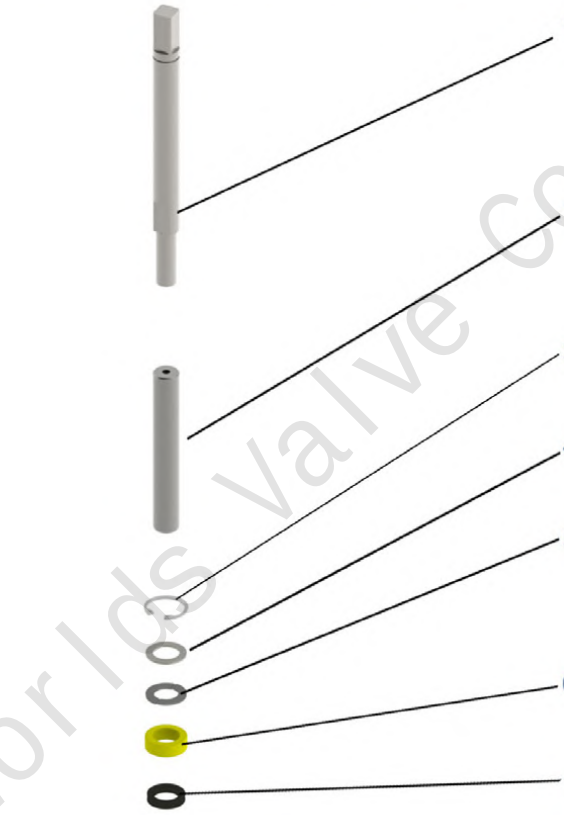


| | | |
|---|---|---|
| 7 | Body | GG20 GG25<br>GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |

| | | |
|---|---|---|
| 8 | Body seat | NBR(BUNA-N)<br>EPDM<br>HEPDM<br>FKM(VITON)<br>Polychloroprene<br>Natural Rubber<br>Sillicon Rubb |

| | | |
|---|---|---|
| 9 | Disc | GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |

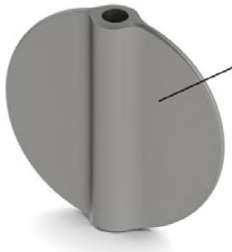
## Main Spare Part Material Quality（DN100-DN350）



| | | | |
|---|---|---|---|
| 1 | Up Shaft | SS410 SS304 SS431 SS316 |
| | | MONEL K500 17-4PH |
| | | C63000 C92200 |
| | | 2507 2205 |
| 2 | Down Shaft | MONEL K500 17-4PH |
| | | C63000 C92200 |
| | | 2507 2205 |
| 3 | Retaining Ring | Sk7 |
| 4 | Thrust Washer | Stainless Steel |
| | | Carbon Steel |
| 5 | Shaft Retainer | Stainless Steel |
| | | Carbon Steel |
| 6 | Bushing | FRP |
| 7 | "O"Ring | NBR VITON |

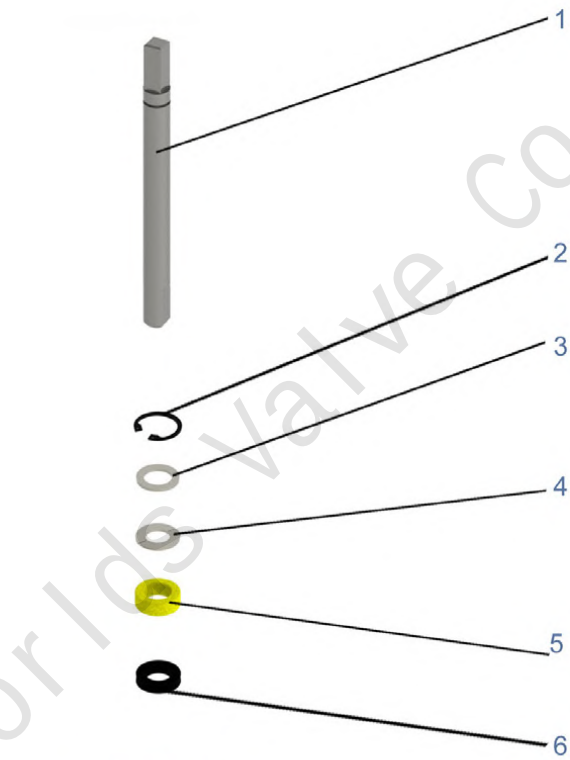
| | | |
|---|---|---|
| 8 | Body | GG20 GG25 |
| | | GGG40 GGG45 GGG50 |
| | | WCB WCC LCC LCB |
| | | CF8 CF8M CF3 CF3M |
| | | C95800 C95400 C95500 |

| | | |
|---|---|---|
| 9 | Body seat | NBR(BUNA-N) |
| | | EPDM |
| | | HEPDM |
| | | FKM(VITON) |
| | | Polychloroprene |
| | | Natural Rubber |
| | | Sillicon Rubb |

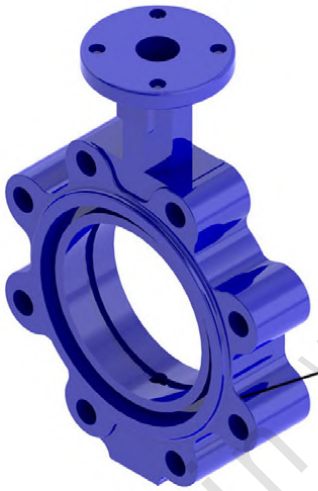


| | | |
|---|---|---|
| 10 | Disc | GGG40 GGG45 GGG50 |
| | | WCB WCC LCC LCB |
| | | CF8 CF8M CF3 CF3M |
| | | C95800 C95400 C95500 |

## Main Spare Part Material Quality（DN50-DN80）

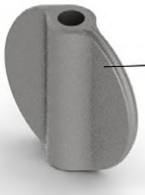


| | | | |
|---|---|---|---|
| 1 | Shaft | SS410 SS304 SS431 SS316<br>MONEL K500 17-4PH<br>C63000 C92200<br>2507 2205 |
| 2 | Retaining Ring | Sk7 |
| 3 | Thrust Washer | Stainless Steel<br>Carbon Steel |
| 4 | Shaft Retainer | Stainless Steel<br>Carbon Steel |
| 5 | "O"Ring | NBR VITON |
| 6 | Bushing | FRP |



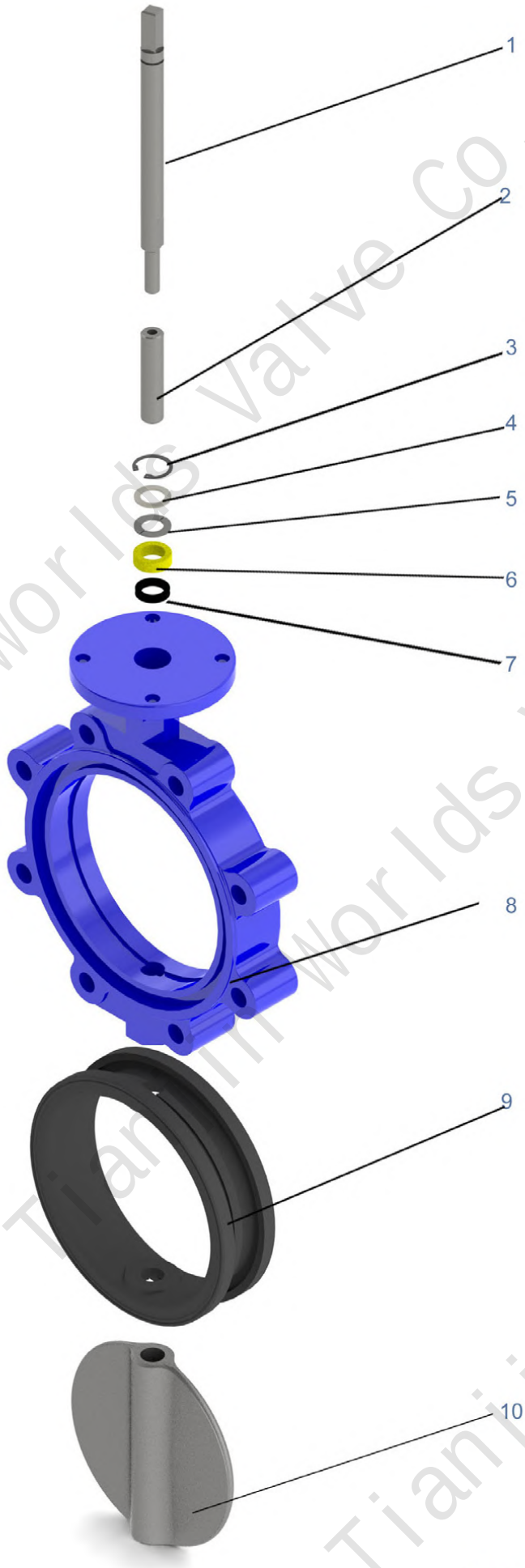
| | | |
|---|---|---|
| 7 | Body | GG20 GG25<br>GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |

| | | |
|---|---|---|
| 8 | Body seat | NBR(BUNA-N)<br>EPDM<br>HEPDM<br>FKM(VITON)<br>Polychloroprene<br>Natural Rubber<br>Sillicon Rubber |



| | | |
|---|---|---|
| 9 | Disc | GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |

## Main Spare Part Material Quality（DN100-DN350）



| | | | |
|---|---|---|---|
| 1 | Up Shaft | SS410 SS304 SS431 SS316<br>MONEL K500 17-4PH<br>C63000 C92200<br>2507 2205 |
| 2 | Up Shaft | SS410 SS304 SS431 SS316<br>MONEL K500 17-4PH<br>C63000 C92200<br>2507 2205 |
| 3 | Retaining Ring | Sk7 |
| 4 | Thrust Washer | Stainless Steel<br>Carbon Steel |
| 5 | Shaft Retainer | Stainless Steel<br>Carbon Steel |
| 6 | Bushing | FRP |
| 7 | "O"Ring | NBR VITON |
| 8 | Body | GG20 GG25<br>GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |
| 9 | Body seat | NBR(BUNA-N)<br>EPDM<br>HEPDM<br>FKM(VITON)<br>Polychloroprene<br>Natural Rubber<br>Sillicon Rubber |
| 10 | Disc | GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |

## Main Spare Part Material Quality（CBF02-TA03-DN400-DN600）


| | | |
|---|---|---|
| 1 | Screw | Stainless Steel |
| 2 | Half Ring | Q235 |
| 3 | Packing Gasket | Q235 |
| 4 | Packing | NBR / EPDM |
| 5 | Bushing | Bronze |
| 6 | Up shaft | SS410 SS304 SS431 SS316<br>C63000 Monel |
| 7 | Bushing | Bronze |
| 8 | Body | GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |
| 9 | Body Seat | NBR(BUNA-N)<br>EPDM<br>FKM(VITON)<br>Polychloroprene<br>Natural Rubber<br>Sillicon Rubber |
| 10 | Disc | GGG40 GGG45 GGG50<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500<br>WCB WCC LCC LCB |
| 11 | Stop Ring | Carbon Steel |
| 12 | Down Shaft | SS410 SS304 SS316 SS431<br>C63000 Monel |
| 13 | Bushing | Bronze |
| 14 | “O” Ring | NBR |
| 15 | End Cover | GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |
| 16 | Gasket | Stainless Steel |
| 17 | Spring Washer | Stainless Steel |
| 18 | Screw | Stainless Steel |

## Main Spare Part Material Quality（CBF02-TL03-DN400-DN600）


| | | |
|---|---|---|
| 1 | Screw | Stainless Steel |
| 2 | Half Ring | Q235 |
| 3 | Packing Gasket | Q235 |
| 4 | Packing | NBR / EPDM |
| 5 | Bushing | Bronze |
| 6 | Up shaft | SS410 SS304 SS431 SS316<br>C63000 Monel |
| 7 | Bushing | Bronze |
| 8 | Body | GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |
| 9 | Body Seat | NBR(BUNA-N)<br>EPDM<br>FKM(VITON)<br>Polychloroprene<br>Natural Rubber<br>Sillicon Rubber |
| 10 | Disc | GGG40 GGG45 GGG50<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500<br>WCB WCC LCC LCB |
| 11 | Stop Ring | Carbon Steel |
| 12 | Down Shaft | SS410 SS304 SS316 SS431<br>C63000 Monel |
| 13 | Bushing | Bronze |
| 14 | “O” Ring | NBR |
| 15 | End Cover | GGG40 GGG45 GGG50<br>WCB WCC LCC LCB<br>CF8 CF8M CF3 CF3M<br>C95800 C95400 C95500 |
| 16 | Gasket | Stainless Steel |
| 17 | Spring Washer | Stainless Steel |
| 18 | Screw | Stainless Steel |

## Main Spare Part Material Quality（CBF02-TA03-DN700-DN1200）

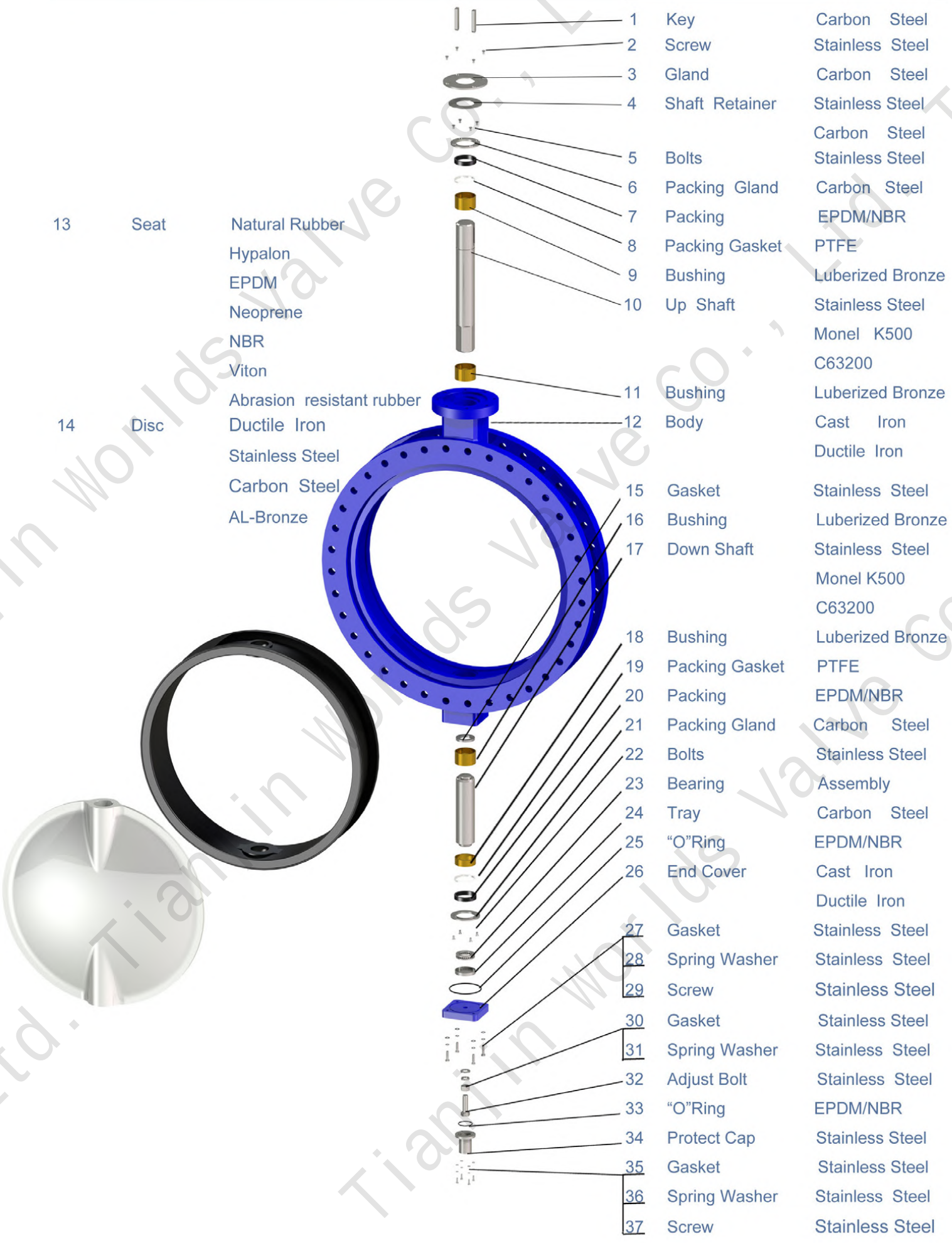
| | | |
|---|---|---|
| 1 | Key | Carbon Steel |
| 2 | Screw | Stainless Steel |
| 3 | Gland | Carbon Steel |
| 4 | Shaft Retainer | Stainless Steel |
| | | Carbon Steel |
| 5 | Bolts | Stainless Steel |
| 6 | Packing Gland | Carbon Steel |
| 7 | Packing | EPDM/NBR |
| 8 | Packing Gasket | PTFE |
| 9 | Bushing | Luberized Bronze |
| 10 | Up Shaft | Stainless Steel |
| | | Monel K500 |
| | | C63200 |
| 11 | Bushing | Luberized Bronze |
| 12 | Body | Cast Iron |
| | | Ductile Iron |
| 15 | Gasket | Stainless Steel |
| 16 | Bushing | Luberized Bronze |
| 17 | Down Shaft | Stainless Steel |
| | | Monel K500 |
| | | C63200 |
| 18 | Bushing | Luberized Bronze |
| 19 | Packing Gasket | PTFE |
| 20 | Packing | EPDM/NBR |
| 21 | Packing Gland | Carbon Steel |
| 22 | Bolts | Stainless Steel |
| 23 | Bearing | Assembly |
| 24 | Tray | Carbon Steel |
| 25 | “O”Ring | EPDM/NBR |
| 26 | End Cover | Cast Iron |
| | | Ductile Iron |
| 27 | Gasket | Stainless Steel |
| 28 | Spring Washer | Stainless Steel |
| 29 | Screw | Stainless Steel |
| 30 | Gasket | Stainless Steel |
| 31 | Spring Washer | Stainless Steel |
| 32 | Adjust Bolt | Stainless Steel |
| 33 | “O”Ring | EPDM/NBR |
| 34 | Protect Cap | Stainless Steel |
| 35 | Gasket | Stainless Steel |
| 36 | Spring Washer | Stainless Steel |
| 37 | Screw | Stainless Steel |

| | | |
|---|---|---|
| 13 | Seat | Natural Rubber |
| | | Hypalon |
| | | EPDM |
| | | Neoprene |
| | | NBR |
| | | Viton |
| | | Abrasion resistant rubber |
| 14 | Disc | Ductile Iron |
| | | Stainless Steel |
| | | Carbon Steel |
| | | AL-Bronze |

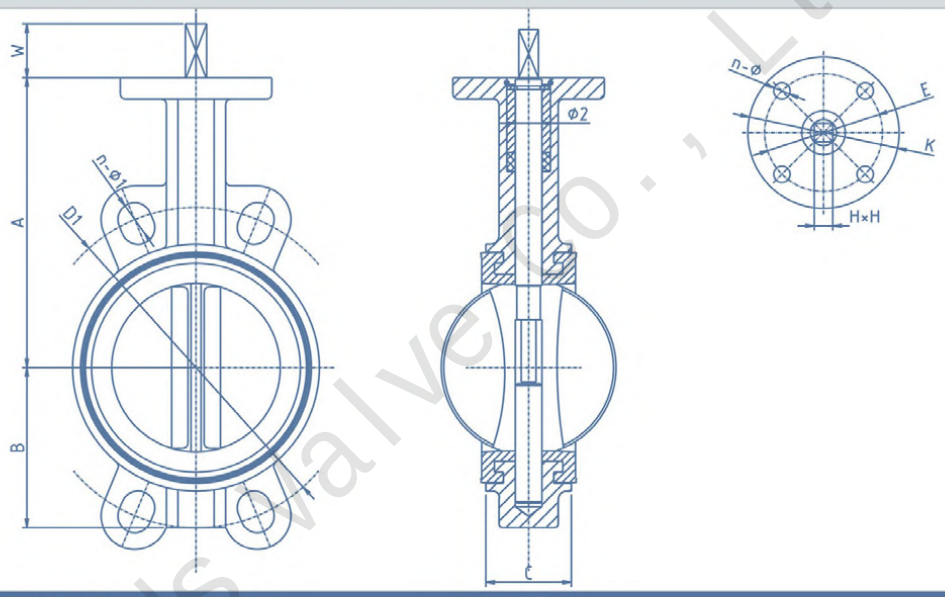
# Butterfly Valve CBF02-TA(L)03

## Main Spare Part Material Quality（CBF02-TL03-DN700-DN1200）

| | | | | | |
|---|---|---|---|---|---|
| | | | 1 | Key | Carbon Steel |
| | | | 2 | Screw | Stainless Steel |
| | | | 3 | Gland | Carbon Steel |
| | | | 4 | Shaft Retainer | Stainless Steel |
| | | | | | Carbon Steel |
| | | | 5 | Bolts | Stainless Steel |
| | | | 6 | Packing Gland | Carbon Steel |
| | | | 7 | Packing | EPDM/NBR |
| 13 | Seat | Natural Rubber | 8 | Packing Gasket | PTFE |
| | | Hypalon | 9 | Bushing | Luberized Bronze |
| | | EPDM | 10 | Up Shaft | Stainless Steel |
| | | Neoprene | | | Monel K500 |
| | | NBR | | | C63200 |
| | | Viton | 11 | Bushing | Luberized Bronze |
| | | Abrasion resistant rubber | 12 | Body | Cast Iron |
| 14 | Disc | Ductile Iron | | | Ductile Iron |
| | | Stainless Steel | 15 | Gasket | Stainless Steel |
| | | Carbon Steel | 16 | Bushing | Luberized Bronze |
| | | AL-Bronze | 17 | Down Shaft | Stainless Steel |
| | | | | | Monel K500 |
| | | | | | C63200 |
| | | | 18 | Bushing | Luberized Bronze |
| | | | 19 | Packing Gasket | PTFE |
| | | | 20 | Packing | EPDM/NBR |
| | | | 21 | Packing Gland | Carbon Steel |
| | | | 22 | Bolts | Stainless Steel |
| | | | 23 | Bearing | Assembly |
| | | | 24 | Tray | Carbon Steel |
| | | | 25 | “O”Ring | EPDM/NBR |
| | | | 26 | End Cover | Cast Iron |
| | | | | | Ductile Iron |
| | | | 27 | Gasket | Stainless Steel |
| | | | 28 | Spring Washer | Stainless Steel |
| | | | 29 | Screw | Stainless Steel |
| | | | 30 | Gasket | Stainless Steel |
| | | | 31 | Spring Washer | Stainless Steel |
| | | | 32 | Adjust Bolt | Stainless Steel |
| | | | 33 | “O”Ring | EPDM/NBR |
| | | | 34 | Protect Cap | Stainless Steel |
| | | | 35 | Gasket | Stainless Steel |
| | | | 36 | Spring Washer | Stainless Steel |
| | | | 37 | Screw | Stainless Steel |



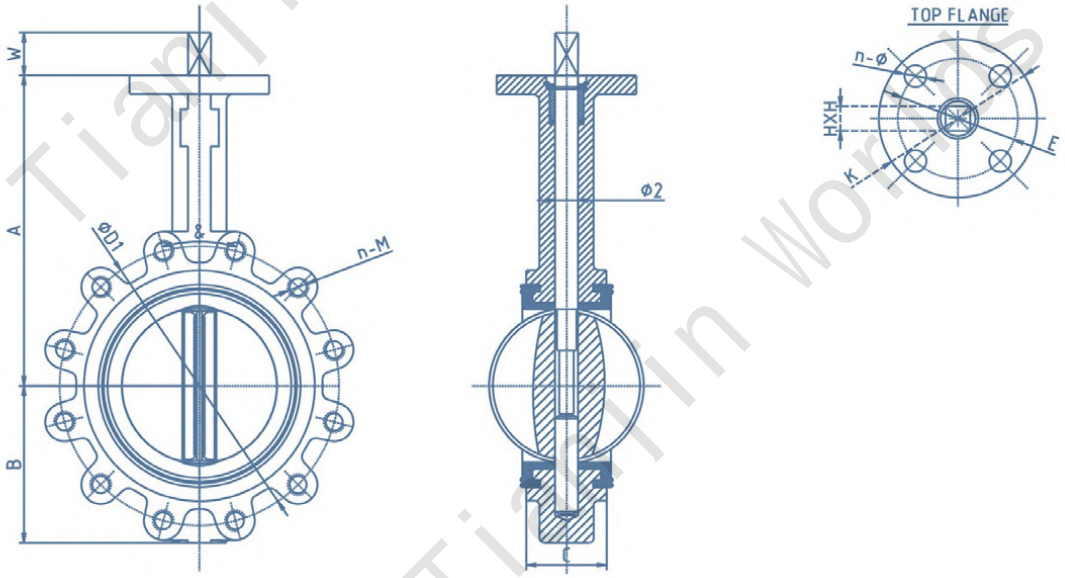
## Drawing (CBF02-TA03-DN50-DN350)




## Outline Dimensions

| SIZE | A | B | C | Ø2 | ISO5211 | K | E | n-Ø | HXH | W |
|---|---|---|---|---|---|---|---|---|---|---|
| DN50 | 140 | 70 | 43 | 12.6 | F07 | 90 | 70 | 4-10 | 11X11 | 14 |
| DN65 | 150 | 80 | 46 | 12.6 | F07 | 90 | 70 | 4-10 | 11X11 | 14 |
| DN80 | 158 | 100 | 46 | 12.6 | F07 | 90 | 70 | 4-10 | 11X11 | 14 |
| DN100 | 176 | 108 | 52 | 15.77 | F07 | 90 | 70 | 4-10 | 11X11 | 14 |
| DN125 | 190 | 135 | 56 | 18.92 | F07 | 90 | 70 | 4-10 | 14X14 | 17 |
| DN150 | 212 | 147 | 56 | 18.92 | F07 | 90 | 70 | 4-10 | 14X14 | 17 |
| DN200 | 236 | 179 | 60 | 22.10 | F10 | 125 | 102 | 4-12 | 17X17 | 22 |
| DN250 | 265 | 208 | 68 | 28.45 | F10 | 125 | 102 | 4-12 | 22X22 | 22 |
| DN300 | 305 | 242 | 78 | 31.60 | F10 | 125 | 102 | 4-12 | 22X22 | 22 |
| DN350 | 368 | 270 | 78 | 31.60 | F10 | 125 | 102 | 4-12 | 22X22 | 22 |

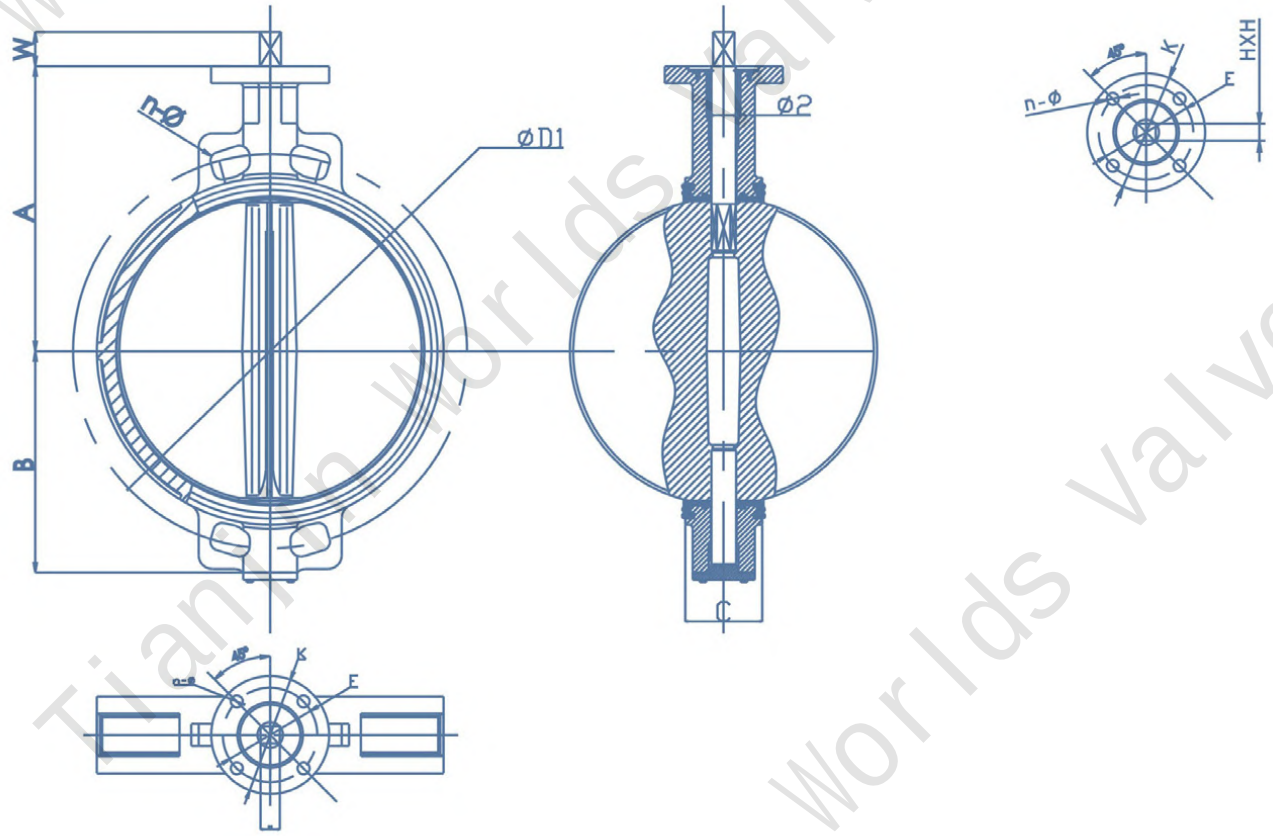
## Drawing (CBF02-TL03-DN50-DN350)



## Outline Dimensions

| SIZE | A | B | C | Φ2 | ISO5211 | K | E | n-Φ | HXH | W |
|---|---|---|---|---|---|---|---|---|---|---|
| DN50 | 140 | 80 | 43 | 12.6 | F07 | 90 | 70 | 4-10 | 11X11 | 14 |
| DN65 | 150 | 89 | 46 | 12.6 | F07 | 90 | 70 | 4-10 | 11X11 | 14 |
| DN80 | 158 | 95 | 46 | 12.6 | F07 | 90 | 70 | 4-10 | 11X11 | 14 |
| DN100 | 176 | 114 | 52 | 15.77 | F07 | 90 | 70 | 4-10 | 11X11 | 14 |
| DN125 | 190 | 127 | 56 | 18.92 | F07 | 90 | 70 | 4-10 | 14X14 | 17 |
| DN150 | 212 | 139 | 56 | 18.92 | F07 | 90 | 70 | 4-10 | 14X14 | 17 |
| DN200 | 235 | 175 | 60 | 22.10 | F10 | 125 | 102 | 4-12 | 17X17 | 22 |
| DN250 | 265 | 203 | 68 | 28.45 | F10 | 125 | 102 | 4-12 | 22X22 | 22 |
| DN300 | 305 | 242 | 78 | 31.60 | F10 | 125 | 102 | 4-12 | 22X22 | 22 |
| DN350 | 368 | 267 | 78 | 31.60 | F10 | 125 | 102 | 4-12 | 22X22 | 22 |

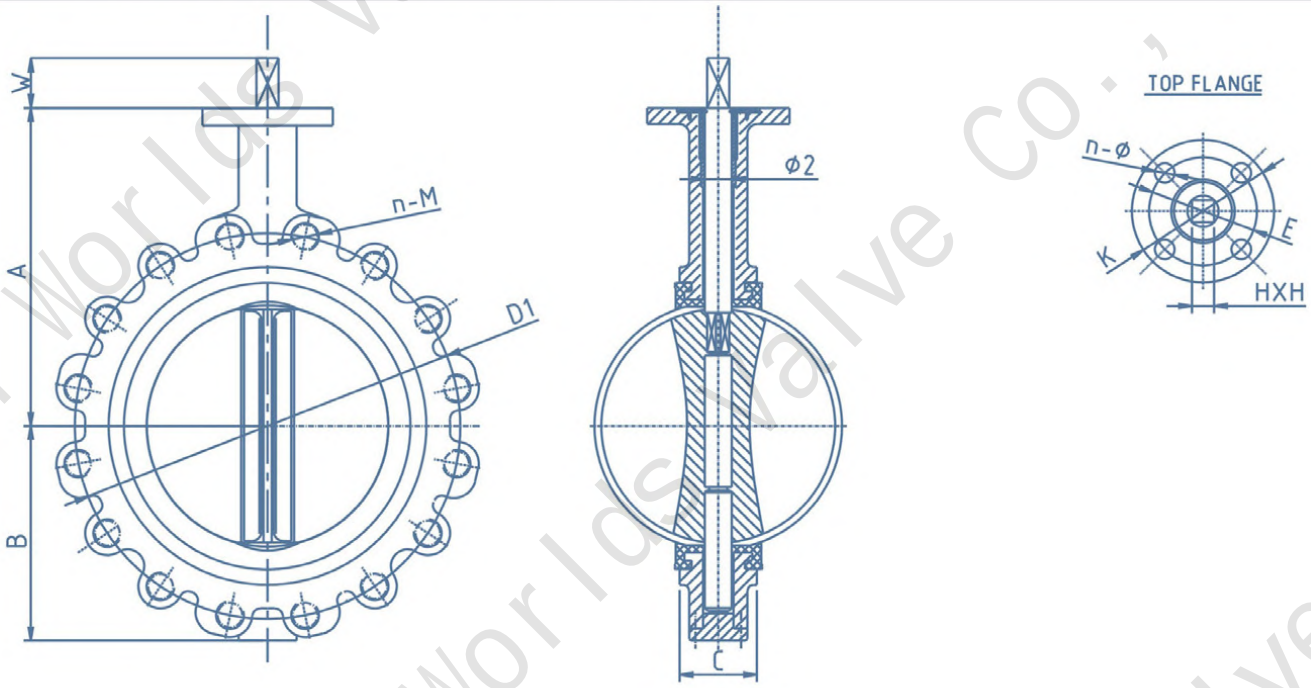
## Drawing (CBF02-TA03-DN400-DN600)



## Outline Dimensions

| SIZE | A | B | C | ϕ2 | ISO5211 | K | E | n-ϕ | HXH | W |
|---|---|---|---|---|---|---|---|---|---|---|
| DN400 | 400 | 310 | 102 | 37.95 | F14 | 175 | 140 | 4-18 | 27X27 | 36 |
| DN450 | 422 | 340 | 114 | 37.95 | F14 | 175 | 140 | 4-18 | 27X27 | 36 |
| DN500 | 442 | 365 | 127 | 45.72 | F14 | 175 | 140 | 4-18 | 36X36 | 36 |
| DN600 | 565 | 452 | 154 | 50.62 | F16 | 210 | 165 | 4-22 | 36X36 | 46 |

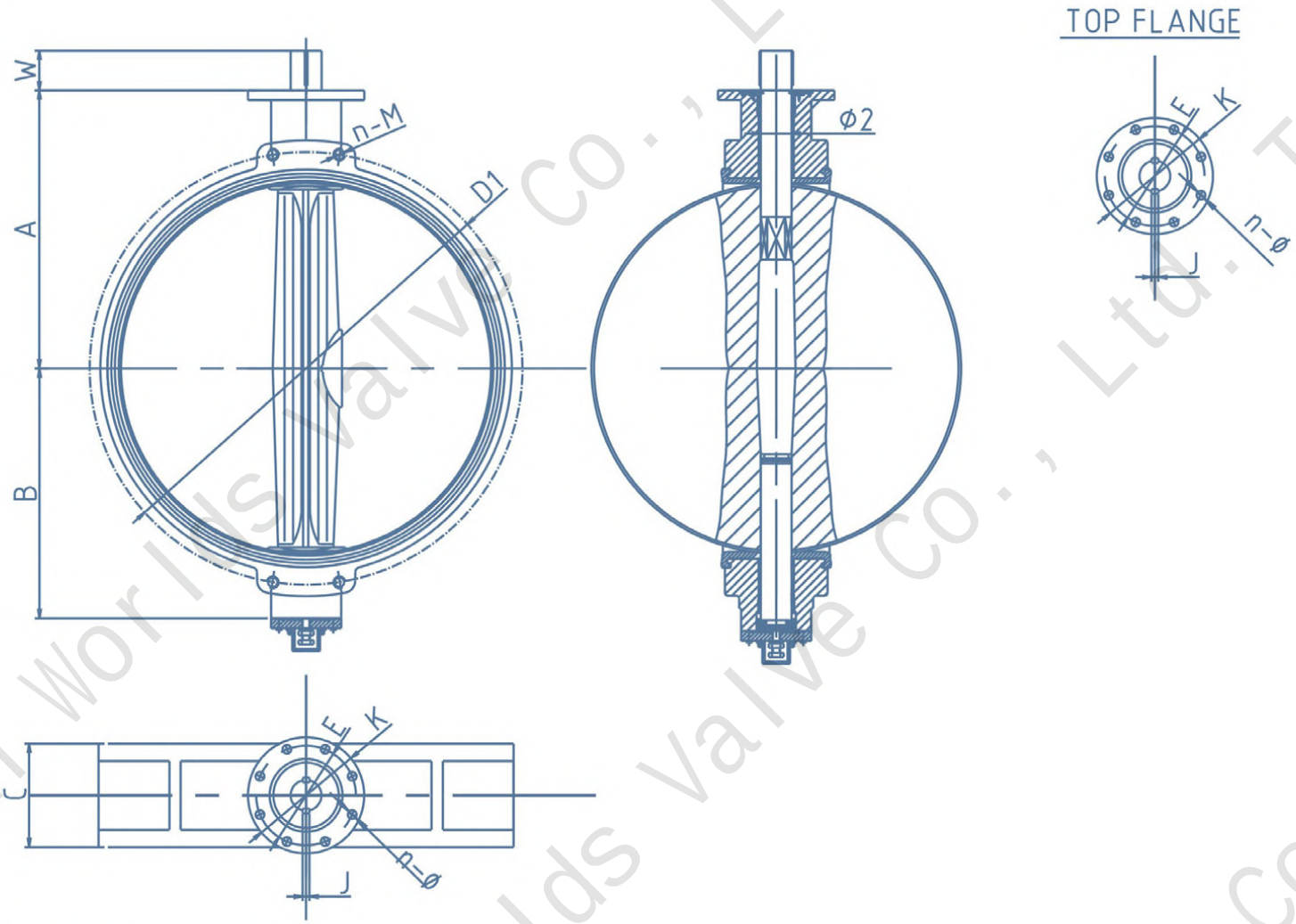
## Drawing (CBF02-TL03-DN400-DN600)




## Outline Dimensions

| SIZE | A | B | C | ϕ2 | ISO5211 | K | E | n-ϕ | HXH | W |
|---|---|---|---|---|---|---|---|---|---|---|
| DN400 | 400 | 309 | 102 | 37.95 | F14 | 175 | 140 | 4-18 | 27X27 | 36 |
| DN450 | 422 | 340 | 114 | 37.95 | F14 | 175 | 140 | 4-18 | 27X27 | 36 |
| DN500 | 455 | 365 | 127 | 45.72 | F14 | 175 | 140 | 4-18 | 36X36 | 36 |
| DN600 | 565 | 452 | 154 | 50.62 | F16 | 210 | 165 | 4-22 | 36X36 | 46 |

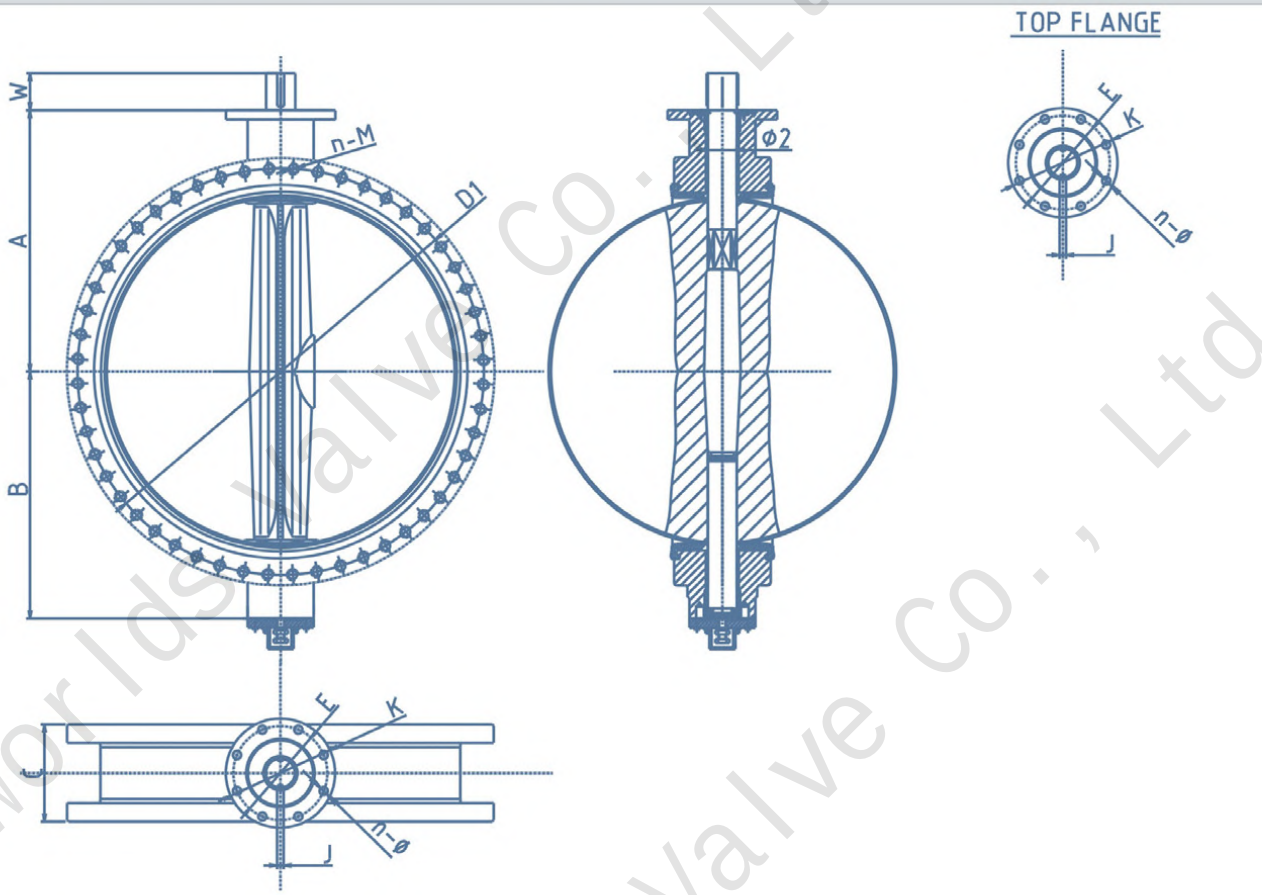
## Drawing (CBF02-TA03-DN700-DN1200)




## Outline Dimensions

| SIZE (mm) | A | B | C | ϕ2 | ISO5211 | K | E | n-ϕ | J | W |
|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 624 | 520 | 165 | 63.35 | F25 | 300 | 254 | 8-18 | 18 | 110 |
| 800 | 672 | 570 | 190 | 63.35 | F25 | 300 | 254 | 8-18 | 18 | 110 |
| 900 | 720 | 636 | 203 | 75 | F25 | 300 | 254 | 8-18 | 20 | 110 |
| 1000 | 805 | 710 | 216 | 85 | F25 | 300 | 254 | 8-18 | 22 | 110 |
| 1200 | 957 | 843 | 276 | 105 | F30 | 350 | 298 | 8-22 | 28 | 130 |

## Drawing (CBF02-TL03-DN700-DN1200)




## Outline Dimensions

| SIZE (mm) | A | B | C | ø2 | ISO5211 | K | E | n-ø | J | W |
|---|---|---|---|---|---|---|---|---|---|---|
| 700 | 624 | 520 | 165 | 63.35 | F25 | 300 | 254 | 8-18 | 18 | 110 |
| 800 | 672 | 591 | 190 | 63.35 | F25 | 300 | 254 | 8-18 | 18 | 110 |
| 900 | 720 | 636 | 200/203 | 75 | F25 | 300 | 254 | 8-18 | 20 | 110 |
| 1000 | 805 | 710 | 216 | 85 | F25 | 300 | 254 | 8-18 | 22 | 110 |
| 1200 | 957 | 842 | 254/276 | 105 | F30 | 350 | 298 | 8-22 | 28 | 130 |

## Connection Dimensisns (CBF02-TA03-DN40-DN1200)

| | Outer Diameter Of Flange | | | | Diameter Of Center Circle | | | | Number And Diameter Of Bolt Holes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | 150LB | PN10 | PN16 | JIS10K | 150LB | PN10 | PN16 | JIS10K | 150LB | PN10 | PN16 | JIS10K |
| 40 | 125 | 150 | 150 | 140 | 98.4 | 110 | 110 | 105 | 4-16 | 4-19 | 4-19 | 4-19 |
| 50 | 150 | 165 | 165 | 155 | 120.7 | 125 | 125 | 120 | 4-19 | 4-19 | 4-19 | 4-19 |
| 65 | 180 | 185 | 185 | 175 | 139.7 | 145 | 145 | 140 | 4-19 | 4-19 | 4-19 | 4-19 |
| 80 | 190 | 200 | 200 | 185 | 152.4 | 160 | 160 | 150 | 4-19 | 8-19 | 8-19 | 8-19 |
| 100 | 230 | 220 | 220 | 210 | 190.5 | 180 | 180 | 175 | 8-19 | 8-19 | 8-19 | 8-19 |
| 125 | 255 | 250 | 250 | 250 | 215.9 | 210 | 210 | 210 | 8-22 | 8-19 | 8-19 | 8-23 |
| 150 | 280 | 285 | 285 | 280 | 241.3 | 240 | 240 | 240 | 8-22 | 8-23 | 8-23 | 8-23 |
| 200 | 345 | 340 | 340 | 330 | 298.5 | 295 | 295 | 290 | 8-22 | 8-23 | 12-23 | 12-23 |
| 250 | 405 | 395 | 405 | 400 | 362 | 350 | 355 | 355 | 12-26 | 12-23 | 12-28 | 12-25 |
| 300 | 485 | 445 | 460 | 445 | 431.8 | 400 | 410 | 400 | 12-26 | 12-23 | 12-28 | 16-25 |
| 350 | 535 | 505 | 520 | 490 | 476.3 | 460 | 470 | 445 | 12-29 | 16-23 | 16-28 | 16-25 |
| 400 | 595 | 565 | 580 | 560 | 539.8 | 515 | 525 | 510 | 16-29 | 16-28 | 16-31 | 16-27 |
| 450 | 635 | 615 | 640 | 620 | 577.9 | 565 | 585 | 565 | 16-32 | 20-28 | 20-31 | 20-27 |
| 500 | 700 | 670 | 715 | 675 | 635 | 620 | 650 | 620 | 20-32 | 20-28 | 20-34 | 20-27 |
| 600 | 815 | 780 | 840 | 795 | 749.3 | 725 | 770 | 730 | 20-35 | 20-31 | 20-37 | 24-33 |
| 700 | 927 | 895 | 910 | 905 | 863.6 | 840 | 840 | 840 | 28-35 | 24-31 | 24-37 | 24-33 |
| 800 | 1060 | 1015 | 1025 | 1020 | 977.9 | 950 | 950 | 950 | 28-42 | 24-34 | 24-41 | 28-33 |
| 900 | 1168 | 1115 | 1125 | 1120 | 1085.85 | 1050 | 1050 | 1050 | 32-42 | 28-34 | 28-41 | 28-33 |
| 1000 | 1289 | 1230 | 1255 | 1235 | 1200.15 | 1160 | 1170 | 1160 | 36-42 | 28-37 | 28-44 | 28-39 |
| 1200 | 1511 | 1455 | 1485 | 1465 | 1422.4 | 1380 | 1390 | 1380 | 44-42 | 32-41 | 32-50 | 32-39 |

## Connection Dimensisns (CBF02-TL03-DN40-DN1200)

| | Outer Diameter Of Flange | | | | Diameter Of Center Circle | | | | Number And Diameter Of Bolt | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | 150LB | PN10 | PN16 | JIS10K | 150LB | PN10 | PN16 | JIS10K | 150LB | PN10 | PN16 | JIS10K |
| 40 | 125 | 150 | 150 | 140 | 98.4 | 110 | 110 | 105 | 4-$\frac{1}{2}$"-13UNC | 4-M16 | 4-M16 | 4-M16 |
| 50 | 150 | 165 | 165 | 155 | 120.7 | 125 | 125 | 120 | 4-$\frac{5}{8}$"-11UNC | 4-M16 | 4-M16 | 4-M16 |
| 65 | 180 | 185 | 185 | 175 | 139.7 | 145 | 145 | 140 | 4-$\frac{5}{8}$"-11UNC | 4-M16 | 4-M16 | 4-M16 |
| 80 | 190 | 200 | 200 | 185 | 152.4 | 160 | 160 | 150 | 4-$\frac{5}{8}$"-11UNC | 8-M16 | 8-M16 | 8-M16 |
| 100 | 230 | 220 | 220 | 210 | 190.5 | 180 | 180 | 175 | 8-$\frac{5}{8}$"-11UNC | 8-M16 | 8-M16 | 8-M16 |
| 125 | 255 | 250 | 250 | 250 | 215.9 | 210 | 210 | 210 | 8-$\frac{3}{4}$"-10UNC | 8-M16 | 8-M16 | 8-M20 |
| 150 | 280 | 285 | 285 | 280 | 241.3 | 240 | 240 | 240 | 8-$\frac{3}{4}$"-10UNC | 8-M20 | 8-M20 | 8-M20 |
| 200 | 345 | 340 | 340 | 330 | 298.5 | 295 | 295 | 290 | 8-$\frac{3}{4}$"-10UNC | 8-M20 | 12-M20 | 12-M20 |
| 250 | 405 | 395 | 405 | 400 | 362 | 350 | 355 | 355 | 12-$\frac{7}{8}$"-9UNC | 12-M20 | 12-M24 | 12-M22 |
| 300 | 485 | 445 | 460 | 445 | 431.8 | 400 | 410 | 400 | 12-$\frac{7}{8}$"-9UNC | 12-M20 | 12-M24 | 16-M22 |
| 350 | 535 | 505 | 520 | 490 | 476.3 | 460 | 470 | 445 | 12-1"-8UNC | 16-M20 | 16-M24 | 16-M22 |
| 400 | 595 | 565 | 580 | 560 | 539.8 | 515 | 525 | 510 | 16-1"-8UNC | 16-M24 | 16-M27 | 16-M24 |
| 450 | 635 | 615 | 640 | 620 | 577.9 | 565 | 585 | 565 | 16-1$\frac{1}{8}$"-8UN | 20-M24 | 20-M27 | 20-M24 |
| 500 | 700 | 670 | 715 | 675 | 635 | 620 | 650 | 620 | 20-1$\frac{1}{8}$"-8UN | 20-M24 | 20-M30 | 20-M24 |
| 600 | 815 | 780 | 840 | 795 | 749.3 | 725 | 770 | 730 | 20-1$\frac{1}{4}$"-8UN | 20-M27 | 20-M33 | 24-M30 |
| 700 | 927 | 895 | 910 | 905 | 863.6 | 840 | 840 | 840 | 28-1$\frac{1}{4}$"-8UN | 24-M27 | 24-M33 | 24-M30 |
| 800 | 1060 | 1015 | 1025 | 1020 | 977.9 | 950 | 950 | 950 | 28-1$\frac{1}{2}$"-8UN | 24-M30 | 24-M36 | 28-M30 |
| 900 | 1168 | 1115 | 1125 | 1120 | 1085.85 | 1050 | 1050 | 1050 | 32-1$\frac{1}{2}$"-8UN | 28-M30 | 28-M36 | 28-M30 |
| 1000 | 1289 | 1230 | 1255 | 1235 | 1200.15 | 1160 | 1170 | 1160 | 36-1$\frac{1}{2}$"-8UN | 28-M33 | 28-M39 | 28-M36 |
| 1200 | 1511 | 1455 | 1485 | 1465 | 1422.4 | 1380 | 1390 | 1380 | 44-1$\frac{1}{2}$"-8UN | 32-M36 | 32-M45 | 32-M36 |

## Torque values-Nm

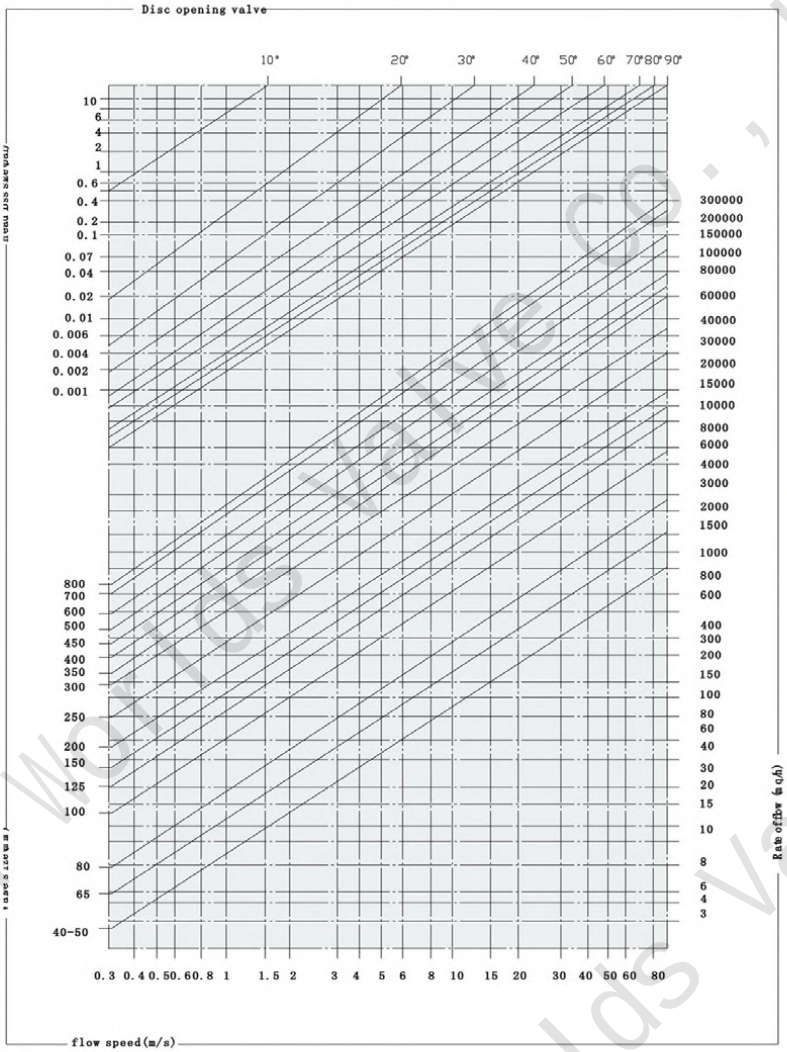
| APPLICATION IN WATER | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| EPDM | | | | | VITON / NBR / PTFE | | | | |
| SIZE | | 6 Bar | 10 Bar | 16 Bar | SIZE | | 6 Bar | 10 Bar | 16 Bar |
| mm | inch | wet (N .m) | wet (N .m) | wet (N .m) | mm | inch | wet (N .m) | wet (N .m) | wet (N .m) |
| DN40 | 1.5" | 7 | 9 | 9 | DN40 | 1.5" | 9 | 12 | 12 |
| DN50 | 2" | 8 | 9 | 10 | DN50 | 2" | 10 | 12 | 13 |
| DN65 | 2.5" | 13 | 15 | 17 | DN65 | 2.5" | 17 | 20 | 22 |
| DN80 | 3" | 19 | 21 | 26 | DN80 | 3" | 25 | 27 | 34 |
| DN100 | 4" | 33 | 37 | 43 | DN100 | 4" | 43 | 48 | 56 |
| DN125 | 5" | 51 | 57 | 65 | DN125 | 5" | 66 | 74 | 85 |
| DN150 | 6" | 80 | 94 | 103 | DN150 | 6" | 104 | 122 | 134 |
| DN200 | 8" | 140 | 171 | 206 | DN200 | 8" | 182 | 222 | 268 |
| DN250 | 10" | 215 | 264 | 299 | DN250 | 10" | 280 | 343 | 389 |
| DN300 | 12" | 299 | 402 | 417 | DN300 | 12" | 389 | 523 | 542 |
| DN350 | 14" | | 519 | 782 | DN350 | 14" | | 675 | 1017 |
| DN400 | 16" | | 757 | 1224 | DN400 | 16" | | 984 | 1591 |
| DN450 | 18" | | 1054 | 1513 | DN450 | 18" | | 1370 | 1967 |
| DN500 | 20" | | 1420 | 1879 | DN500 | 20" | | 1846 | 2443 |
| DN600 | 24" | | 2176 | 3383 | DN600 | 24" | | 2829 | 4398 |
| DN700 | 28" | | 3162 | 4182 | DN700 | 28" | | 4111 | 5437 |
| DN800 | 32" | | 4794 | 6664 | DN800 | 32" | | 6232 | 8663 |
| DN900 | 36" | | 6503 | 8296 | DN900 | 36" | | 8454 | 10785 |
| DN1000 | 40" | | 8330 | 11526 | DN1000 | 40" | | 10829 | 14984 |
| DN1200 | 48" | | 14280 | 18020 | DN1200 | 48" | | 18564 | 23426 |

NOTICE：

The above torque data based on 25 C purified water , not include safety factor .

## Head losses

Notes:Values indicated in this page is only for information




## Formulae for calculation of rate flow

Liquids: $Q = \frac{KV}{\sqrt{\frac{PS}{\Delta P}}}$

Q rate of flow (m3/h)

PS specific gravity (water=1)

ΔP pressure drop (bar)

Gas: $Q = 28.5 \frac{KV}{\sqrt{\frac{PS}{P_2 \cdot \Delta P}}}$

Q rate of flow (m3/h)

PS specific gravity (air=1)

ΔP pressure drop (bar)
(less than 1/2 inlet pressure)

P2 outlet pressure

Steam: $Q = 22.5 \cdot KV \cdot \sqrt{P_2 \cdot \Delta P}$

Q rate of flow (Kg/h)

ΔP pressure drop (bar)
(less than 1/2 inlet pressure)

P2 outlet pressure

Calculation of the rate of flow equivalent to H2O:

For different liquid, gas or steam head losses are determined by equivalent water of flow, as follosw:

Qe equivalent water flow
(mc/l o l/s)

Q fluid flow
(mc/l o l/s)

d fluid specific gravity
(Kg/mc)

## Values CV（CV=1.16KV）

| Size | Flow in Gpm@1 PSI P@ Various Disc Angles | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (mm) | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
| 50 | 0.1 | 5 | 12 | 24 | 45 | 64 | 90 | 125 | 135 |
| 65 | 0.2 | 8 | 20 | 37 | 65 | 98 | 144 | 204 | 220 |
| 80 | 0.3 | 12 | 22 | 39 | 70 | 116 | 183 | 275 | 302 |
| 100 | 0.5 | 17 | 36 | 78 | 139 | 230 | 364 | 546 | 600 |
| 125 | 0.8 | 29 | 61 | 133 | 237 | 392 | 620 | 930 | 1022 |
| 150 | 2 | 45 | 95 | 205 | 366 | 605 | 958 | 1437 | 1579 |
| 200 | 3 | 89 | 188 | 408 | 727 | 1202 | 1903 | 2854 | 3136 |
| 250 | 4 | 151 | 320 | 694 | 1237 | 2047 | 3240 | 4859 | 5340 |
| 300 | 5 | 234 | 495 | 1072 | 1911 | 3162 | 5005 | 7507 | 8250 |
| 350 | 6 | 338 | 715 | 1549 | 2761 | 4568 | 7230 | 10844 | 11917 |
| 400 | 8 | 464 | 983 | 2130 | 3797 | 6282 | 9942 | 14913 | 16388 |
| 450 | 11 | 615 | 1302 | 2822 | 5028 | 8320 | 13168 | 19752 | 21705 |
| 500 | 14 | 971 | 1674 | 3628 | 6465 | 10698 | 16931 | 25396 | 27908 |
| 600 | 22 | 1222 | 2587 | 5605 | 9989 | 16528 | 26157 | 39236 | 43116 |
| 700 | 30 | 1633 | 3522 | 7630 | 12599 | 20036 | 30482 | 46899 | 58696 |
| 800 | 45 | 2387 | 4791 | 8736 | 13786 | 20613 | 31395 | 48117 | 68250 |
| 900 | 60 | 3021 | 6063 | 11055 | 17449 | 26086 | 39731 | 60895 | 86375 |
| 1000 | 84 | 4183 | 8395 | 15307 | 24159 | 36166 | 55084 | 84425 | 119750 |
| 1200 | 102 | 4651 | 10365 | 17010 | 27242 | 43853 | 70431 | 108968 | 132888 |

## Installation Instructions

The butterfly valve can be installed on the pipeline, which is at any angle.

1.The valve should be installed in the location being sure to provide convenient operation, maintenance and replacement.

2.As mounting the butterfly valve, fail to consider flow direction of mediums in pipeline, that is to say, the valve can be used in double way.

3.Before installation, the butterfly valve should be stored in ware house and prevent it from moisture and in so doing, the disc should be kept to open at an angle of 15 degree.

4.Before installation, the following processes should be completed:

(1)Check carefully and confirm the operation condition of the valve is in line with the technical specification and requirements.

(2)Clean the disc sealing area and body sealing completely. It is not permitted to open the disc before cleaning.

(3)Check and confirm the handle is strongly collected to the flange and stem.

5.As mounting the butterfly valve in pipeline, the load for tightening connection bolts should be uniformed.

6.After installation, the disc must be opened in the case of the strength pressure test on pipeline being carried out.

7.After being installed, the valve should be examined regularly. The main item to be checked are as follows:

(1)Whether the valve seat and 'O' sealing ring have been damaged.

(2)Check the sealing effects of the disc sealing area.

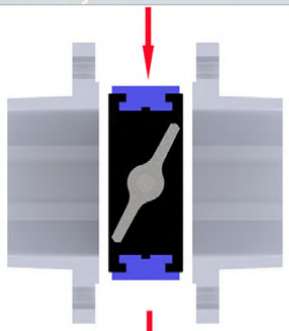
(3)After the valve was examined and assembled, no scuffing happens at the time of on-off rotation.

(4)After the valve was examined and assembled, the sealing test should be carried out as the introduction.

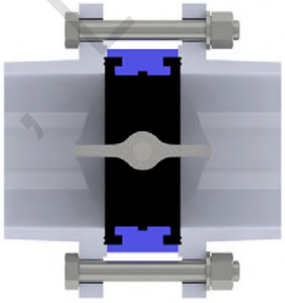
(5)After each examination, detailed records should be filed for reference.

## INSTALLATION

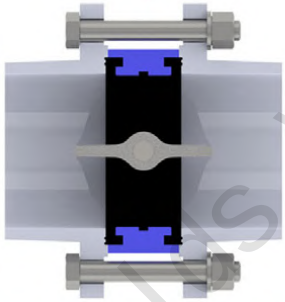
Assembly



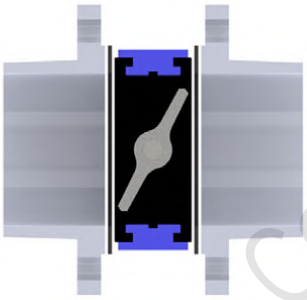
1 Leave a space between flanges so that valve can be easily inserted and re-moved .and move the valve in accordance with the arrow



2 Open completely the valve before tightening flanges



3 Tighten bolts till flanges are in contact with valve body

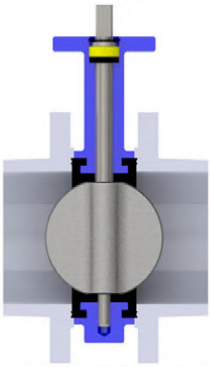


4 NOTE: do not insert other packing between flange and valve

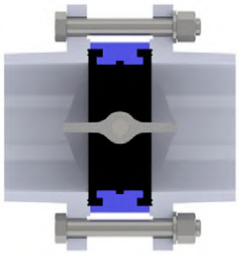
NOTE:Weld the pipe only in spots with the valve between flanges. Remove the valve before finishing welding to aviod that heat damage the seat， Clean carefully the welding to avoid that slags damage the seat

## Installation for powders and muddy fluids

In case of use with powders or muddy fluids,install the valve with horizontal rotation axis,to allow sediments to flow easily on opening



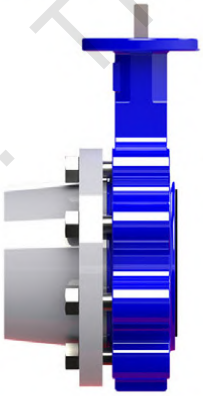
Wrong
Vertical rotation axis



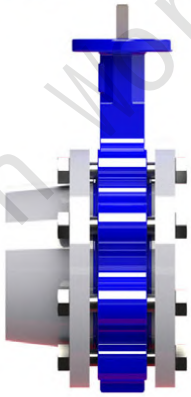
Right
Horizontal rotation axis

## End piping installation

When valves are installed end of piping,a counterflange as per dwg type B is needed to secure tightness at max peressure，Please notice in order when the valves are installed as per drawing type A.



Type A installation without end piping

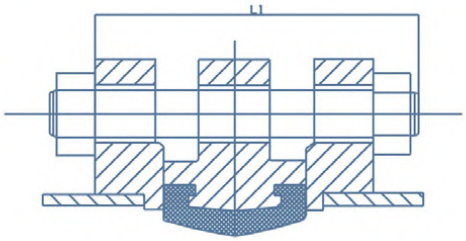


Type B installation with end piping

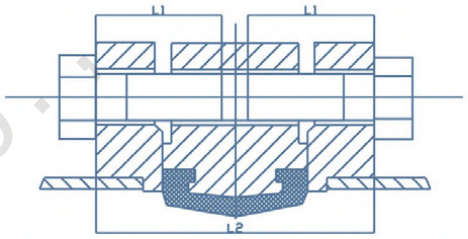
Pressure（max）：Type A installation is 12 Bar
Type B installation is 16 Bar

## Length & Quantity of Bolts for Valve Installation

Bolt Connection of Wafer Butterfly Valve




Bolt Connection of Lug Butterfly Valve




2L1<L2

### EN1092-1 PN10/16 ISO7005 PN10/16

| size | 1.0Mpa | | | | | 1.6Mpa | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Stud Bolt for Type of wafer valve | | | Hexagon Heed Bolt for Type of Lug valve | | Stud Bolt for Type of wafer valve | | | Hexagon Heed Bolt for Type of Lug valve | |
| **inch** | Qty | Dia×L1 | Length | Qty | Dia×L1 | Qty | Dia×L1 | Length | Qty | Dia×L1 |
| **50** | 4 | M16×110 | 130 | 4×2 | M16×40 | 4 | M16×110 | 130 | 4×2 | M16×40 |
| 65 | 4 | M16×120 | 140 | 4×2 | M16×45 | 4 | M16×120 | 140 | 4×2 | M16×45 |
| 80 | 8 | M16×120 | 140 | 8×2 | M16×45 | 8 | M16×120 | 140 | 8×2 | M16×45 |
| 100 | 8 | M16×130 | 150 | 8×2 | M16×50 | 8 | M16×130 | 150 | 8×2 | M16×50 |
| 125 | 8 | M16×130 | 150 | 8×2 | M16×50 | 8 | M16×130 | 150 | 8×2 | M16×50 |
| 150 | 8 | M20×140 | 165 | 8×2 | M20×50 | 8 | M20×140 | 165 | 8×2 | M20×50 |
| 200 | 8 | M20×150 | 175 | 8×2 | M20×55 | 12 | M20×150 | 175 | 12×2 | M20×55 |
| 250 | 12 | M20×160 | 185 | 12×2 | M20×60 | 12 | M24×160 | 185 | 12×2 | M24×60 |
| 300 | 12 | M20×170 | 195 | 12×2 | M20×65 | 12 | M24×170 | 195 | 12×2 | M24×65 |
| 350 | 16 | M20×170 | 195 | 16×2 | M20×65 | 16 | M24×170 | 195 | 16×2 | M24×65 |
| 400 | 16 | M24×190 | 220 | 16×2 | M24×75 | 16 | M27×190 | 220 | 16×2 | M27×75 |
| 450 | 20 | M24×220 | 250 | 20×2 | M24×80 | 20 | M27×220 | 250 | 20×2 | M27×80 |
| 500 | 20 | M24×260 | 290 | 20×2 | M24×90 | 20 | M30×260 | 290 | 20×2 | M30×90 |
| 600 | 20 | M27×290 | 324 | 20×2 | M27×100 | 20 | M33×290 | 324 | 20×2 | M33×100 |
| 700 | 24 | M27×290 | 324 | 24×2 | M27×100 | 24 | M33×290 | 324 | 24×2 | M33×100 |
| 800 | 24 | M30×320 | 356 | 24×2 | M30×110 | 24 | M36×320 | 356 | 24×2 | M36×110 |
| 900 | 28 | M30×340 | 376 | 28×2 | M30×130 | 28 | M36×340 | 376 | 28×2 | M36×130 |
| 1000 | 28 | M33×360 | 400 | 28×2 | M33×140 | 28 | M39×360 | 400 | 28×2 | M39×140 |
| 1200 | 32 | M36×430 | 470 | 32×2 | M36×165 | 32 | M45×430 | 470 | 32×2 | M45×165 |

### ASME B 16.5 150LB

| size | 150LB | | | | |
|---|---|---|---|---|---|
| | Stud Bolt for Type of wafer valve | | | Hexagon Heed Bolt for Type of Lug valve | |
| **inch** | Qty | Dia×L1 | Length | Qty | Dia×L1 |
| **50** | 4 | 5/8"×110 | 130 | 4×2 | 5/8"×40 |
| 65 | 4 | 5/8"×120 | 140 | 4×2 | 5/8"×45 |
| 80 | 4 | 5/8"×120 | 140 | 4×2 | 5/8"×45 |
| 100 | 8 | 3/4"×130 | 150 | 8×2 | 3/4"×50 |
| 125 | 8 | 3/4"×130 | 150 | 8×2 | 3/4"×50 |
| 150 | 8 | 3/4"×140 | 165 | 8×2 | 3/4"×50 |
| 200 | 8 | 3/4"×150 | 175 | 8×2 | 3/4"×55 |
| 250 | 12 | 7/8"×160 | 185 | 12×2 | 7/8"×60 |
| 300 | 12 | 7/8"×170 | 195 | 12×2 | 7/8"×65 |
| 350 | 12 | 1"×170 | 195 | 12×2 | 1"×65 |
| 400 | 16 | 1"×190 | 220 | 16×2 | 1"×75 |
| 450 | 16 | 9/8"×220 | 250 | 16×2 | 9/8"×80 |
| 500 | 20 | 9/8"×260 | 290 | 20×2 | 9/8"×90 |
| 600 | 20 | 5/4"×290 | 324 | 20×2 | 5/4"×100 |
| 700 | 28 | 5/4"×290 | 324 | 28×2 | 5/4"×100 |
| 800 | 28 | 3/2"×320 | 356 | 28×2 | 3/2"×110 |
| 900 | 32 | 3/2"×340 | 376 | 32×2 | 3/2"×130 |
| 1000 | 36 | 3/2"×360 | 400 | 36×2 | 3/2"×140 |
| 1200 | 44 | 3/2"×430 | 470 | 44×2 | 3/2"×165 |

## Work principle

This product mainly consists of body, stem, disc, seat AL-Bronze bushings etc. The rotation of actuating device makes stem and disc revolved, which ensures on-off operations and flow control.

The rotation of the actuating device ensures dependability and position disc control and position disc control and water flow control. Rotate handle wheel clockwise, the valve is close.

## Features

1.Small in size and light in weight. Easy installation and maintenance. It can be mounted wherever needed.
2.Simple and compact construction, quick 90degrees on-off operation.
3.Minimized operating torque, energy saving.
4.Bubbles-tight sealing with no leakage under the pressure testing
5.Wide selection of materials, applicable for various medium.
6.Long service life. Standing the test of tens of thousands opening/closing operations.
7.Flow curve tending to straight line. Excellent regulation performance.

## Trouble & remedy

| Trouble | cause | remedy |
|---|---|---|
| Leakage in sealing area | Disc sealing area or body sealing seat scratched, disc is not closed completely. Hexagonal socket head bolts on clamping ring are not tightened completely. | Repair the disc sealing replace repair the body sealing seat, adjust actuator to close the disc completely, tighten loosed hexagonal socket head bolts. |
| Leakage in shaft end | The seat or The 'O' ring is not pressed completely. | Replace the body sealing seat |
| Leakage in joint area between valve face and relevant flange on pipeline | Connection bolts are not screwed up uniformly. | Tighten the connection bolts evenly. |