CONCENTRIC Butterfly Valves

SERIES BF
An Integrally Moulded Liner Design

ENGINEERED FOR PERFORMANCE
Design Features
Advance Concentric Butterfly Valves are designed and manufactured to have optimal mix of structural stability, flow efficiency and effective sealing coupled with advantage of light weight, compact design and ease of operation. Only a quarter turn is needed to fully open or close the valves.

The valves are provided with integrally moulded elastomer body liner to provide perfect seating and complete isolation of body material from media to prevent it from any corrosive and abrasive impact of fluid. The body liner material can be provided to suit specific fluid service for long maintenance free life.

The valves are easy to install in any position between horizontal to vertical piping. No supports are required as the body liner acts as a seal between the valve body and the mating pipe flanges.

Standard water valves are available from 2”-24” and require only one set of mating flanges, as otherwise required for flanged valves. They also required only one set of studs and nuts instead of two sets required for flanged valves. They thus save installation time and cost.

Lugged type valves are also available in all sizes upto 24” as per requirement.

Double Flanged Type Valves are also available in all sizes. These are with API 609 Cat B face to face and flanges as per ANSI & API605 being fully ANSI & ISO rated like the valve seats.

Advance Butterfly Valves are maintenance free FIT & FORGET Valves.

Pressure & Temperature Ratings
Advance Butterfly Valves are available in following pressure ratings:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>BS 5155</th>
<th>IS 13395</th>
<th>API 609</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>PN 10</td>
<td>PN 1.0</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>PN 16</td>
<td>PN 1.6</td>
<td>ANSI 125</td>
</tr>
<tr>
<td>3.</td>
<td>PN 20</td>
<td>PN 2.0</td>
<td>ANSI 150</td>
</tr>
</tbody>
</table>

Temperature Range - 57°C (+10°F) to 204°C (+400°F) depending on Body Lining (Solid) material.

Standard Compliance
Advance Butterfly valves conform to BS: 5155, IS: 13395 and also API 609. They also generally comply with ANSI/ASME, ISO 5752 and PN/EN.

Valve Operators
1. Manual (Hand Lever Operated):
   As a standard practice valves of size 50mm (2”) N.B. to 200mm (8”) B.S. depending on pressure class are provided with self locking lever operation from open to fully closed position with eight intermediate positions marked on the indicator clamped mounted on the top flange.

2. Manual (Gear Operated):
   Larger size valves are provided with a quarter turn worm gear box of resilient make with adequately size handwheel for low torque and smooth operation.
   Valves of smaller sizes can also be provided with gear operation on specific enquiry.
   The handwheel is elegantly designed for the safety, comfortable and smooth handling by operators in the field.

3. Electrical Actuator:
   Advance Butterfly Valves are also supplied with electrical Actuators as per customer’s specifications and requirements.

4. Pneumatic Actuator
   Advance Butterfly Valves are also supplied with Pneumatic Actuators as per customer’s specifications and requirements.
Special accessories for electrical/pneumatic operation such as limit switches, manual override, positioners, solenoid valves etc are provided as specified.

5. Special Operations:
Values are available with extended stem for buried operation and values with chain driven for overhead operation are available. UL 1091 approved valves for fire water systems are also supplied internationally.

Face-to-Face Dimensions
Face-to-face dimensions conform to BS 5155
PN 10/ PN6/ PN 1.0/2.0/ ISO 3762, MSS-SP 67 Type 1
Class 125/Normal and ANSI 405.

End Connections
Water type flangeless valves are designed to fit without gaskets between flanges as per BS 4504 PN 10
& 16. BS 5500 Classes 125 & 150, ANSI B 16.5 Class 150,
ANSI B 16.3 Class 125, BS 10 Table D. I & T and Indian
Standard IS 6892 Table 10 to 20. Lug type valves are supplied to suit customer specifications.

Technological Advantages
Rubber technology is fully developed in-house with facilities to mould, process all elastomers including
mixing, vulcanizing and metal to elastomer bonding.
The integral liner concept is fail safe design.

Testing Facilities
Extensive in house testing facilities are available to fully ensure quality at all stages. These include:

- Flatsmear Test for linear
- Compression set, Hardness, Specific Gravity & Abrasion Resistance
- Dye Penetrant Test, Radiography Interpretation, Routine Tests of Actuators (both electric &
- pneumatic), Hydrostatic Pressure testing for shell &
- seat, Pneumatic testing for seat, Valve operating torque test.

Apart from above, other NDT processes including
- inhouse PMI, Radiography, MPI & Ultrasonic Test and
tests for chemical & physical properties including
- special tests e.g. Low Temperature Impact Test, inter
- granular Corrosion Test etc. are also offered to meet
- customer requirements through independent
- Approved Inspection and Test Laboratories.

Valve Testing (Hydrostatic)
Each valve is hydrostatically tested for seat & shell tests as per applicable Standard(s).

Additional tests as required can be carried out as per customer’s
specifications and requirement.

<table>
<thead>
<tr>
<th>Size</th>
<th>Body</th>
<th>Seat</th>
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</thead>
<tbody>
<tr>
<td>PN16</td>
<td>24 bar (g)</td>
<td>17.5 bar (g)</td>
</tr>
<tr>
<td>PN 20</td>
<td>30 bar (g)</td>
<td>22 bar (g)</td>
</tr>
</tbody>
</table>

Through R & D efforts, improvement and optimization of design is an on-going process. The design / specifications
provided in this catalog are subject to change accordingly.
Quality Assurance

All the valves are designed for compliance to applicable National/International Standards. Stringent Quality Control and Inspection at all stages of manufacture ensure that products are fully suitable for the specified use to give reliable performance throughout the service.

The Quality management System of the company has been accredited by Bureau Veritas in accordance with PED Module II CE Marked ISO 9001:2008 & API 600. Advance Valves Butterfly Valves are also API 609 Monogram accredited. The ISO certificate covers the application of valves in the Fire - Water system. This testing was conducted by Underwriters Laboratories Inc.

Valve Disc material covers wide range of applications. It is optimally designed to have an ideal combination of strength and flow efficiency. Ductile iron discs are Moly coated by design. Epox and other coatings available on request.

Stem: For optimal combination of flow efficiency and structural stability, Valves upto 300mm (12") have two piece stem. For sizes 350mm (14") to 600mm (24") M.R. stem is single piece construction which ensures better distribution of weight of the disc. The stem drives the disc through taper pin(s) to eliminate any backlash between Stem & Disc. The material of construction for stem has been standardised as High Tensile Stainless steel (AISI 316L).

Stem Seal Arrangement

Primary Sealing is provided by preload loaded contact face seat surface and rounded polished disc hub area. Secondary Sealing is provided by the interference fit between stem and stem hole to seal at all positions.

Even a tertiary sealing has been provided by fitting moulded O-ring between stem and bush supported by atmospheric sealing with O-rings. Thus Advance Butterfly Valves provide perfect sealing needing no other gland packing.

Construction Features

Body is of one piece design. Top Flange is designed to mount required Valve Operator.

Body Liner is integrally molded and bonded to the body. It provides the seating to valve disc, primary seal to the stem and gasket joint with mating pipe flanges.

The integrally molded liner avoids any stretching or distortion. This is a common problem of loosely fitted liner, which results in a need for frequent replacement.

Applications

Advance Butterfly Valves are available in wide range of materials of construction as is evident from the "Figure Numbering System" to cover all categories of industry requirements. Suitable liner materials (e.g. SULSA- NEN/199/SIP/OM/7/104/CS-A) are available to meet wide variety of duties within general industry, M&A building services and public utilities handling fluids such as water, air, gas, mineral oils, dilute acids and alkalis solutions. Advance Butterfly Valves offer an ideal as well as economic solution for sea water application through use of Ductile Iron-Resist (Autogenous Ductile iron) grade D2 of ASTM A439.
## How to Enquire and Order?

<table>
<thead>
<tr>
<th>Pressure Rating</th>
<th>Body Material</th>
<th>Shaft Material</th>
<th>Operator</th>
<th>SPECIAL SERVICE</th>
</tr>
</thead>
</table>

### Pressure Rating
- PIC 10
- PIC 15
- PIC 20
- PIC 25

### Body Material
- Cast Iron (C)
- Duplex or SA ASTM B806 - J53300
- WCB ASTM A351 - A182F

### Shaft Material
- Carbon Steel (CS)
- Stainless Steel (SS)

### Operator
- 5 HP (6.8 kW)
- 10 HP (13.4 kW)
- 20 HP (26.8 kW)

### SPECIAL SERVICE
- Expanded Bonnet (EB)
- Nitride (N)
- TFMG Coated Disc (C)
- ULS
- Nitride Coated Valve (NCV)
- Tapered Coating (TC)

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### Notes:
- All pressure ratings, material codes, etc. are subject to change without notice.
- For more information, please contact us.

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### Example:
For example, BITEL/12MW50/1000 will represent a 300mm (12") WJ3000 motor with 1000 mm (39") Ductile Iron Body and WCB Body Liner to be used with 1000 mm (39") Ductile Iron Body Liner.
Installation Dimensions

Double Flanged Design (M-37)

<table>
<thead>
<tr>
<th>Value (Unit)</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>F (mm)</th>
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<tbody>
<tr>
<td>100</td>
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<td>150</td>
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<td>200</td>
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<td>250</td>
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<td>300</td>
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<td>350</td>
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<td>400</td>
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*Note: These dimensions are given in millimeters and are subject to slight variations. Please refer to the product specifications for the exact values.*

ambient temperature: 0°C to 40°C

*Please refer to the product specifications for the exact values.*