

Design Features

Advance Concentric Butterfly Valves are designed and manufactured to have optimal mix of structural stability, flow efficiency and effective seating 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 gaskets are required as the body liner acts as a seal between the valves body and the mating pipe flanges.

Standard Wafer Valves are available from NPS 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 up to NPS 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 ASME B 16.5 being fully ASME CL 150 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:

SL. No.	BS-5155	IS-13095	API-609
1	PN-10	PN-1.0	-
2	PN-16	PN-1.6	ASME CL 125
3	PN-20	PN-2.0	ASME CL 150

Temperature Range: - 57° C (-70° F) to 204° C (400° F) depending on Body Lining (Seal) material.

Standard Compliance

Advance Butterfly valves conform to BS: 5155, IS: 13095 and also API 609. They also generally comply with AWWA C-504, ISO 10631 and EN 593.

High Performance Double Eccentric and Triple Eccentric Butterfly Valves are also available in size from DN 80 (NPS 3) to 3 mtr. (NPS 120) with model pressures rated form 10 bar (PN 10) to 160 bar (ASME CL 900) and in wafer, lug-type and flanged configurations.

Elastomer seal valves operate on the double offsset principle and rated upto 25 bar. Pressures of upto 160 bar (ASME CL 900) can be achieved by metal seated valves operating on the triple offset design principle. For further information, refer our website or the other catalogue.

Valve Operators

1. Manual (Hand Lever Operated):

As a standard practice, valves of size DN 50 (NPS 2) N.B. to DN 200 (NPS 8) N.B., 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 plate mounted on the top flange.

2. Manual (Gear Operated):

Larger size Valves are provided with a quater turn worm gear box of reputed make with adequately size handwheel for low torque and smooth operation.

Valves of smaller sizes can also be provided with gear operator 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 specification and requirements.

Special accessories for electrical/pneumatic operation such as limit switches, manual overrides, positioners, solenoid valves out AFR are provided as specified.

5. Special Operators:

Valves are available with extended stem for buried operation and valves with chain drives 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 / PN16 (PN 1.0/1.6), ISO 5752, MSS.SP 67 Type I CL 125 (Narrow) and API-609

End Connections

Wafer type flangeless valves are designed to fit without gaskets between flanges as per BS 4504 PN 10 & 16, BS 1560 CL 125 & 150, ASME B 16.5 CL 150, ASME B 16.1 CL 125, BS 10 Table D, E & F and Indian Standard IS 6392 Table 10 to 20. Lug type valves are supplied to suit customers' specifications.

Technological Advantages

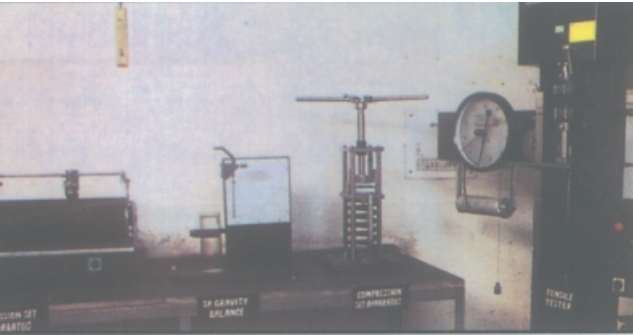
Rubber technology is fully developed in-house with facilities to mould, process all elastomers including mixing, vulcanizing and metal to elastomer bonding. The integral liner concept is fail safe design.

Testing Facilities

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

- Elastomer Testings for Tension, Compression set, Hardness, Specific Gravity & Abrasion Resistance.

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



- 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).



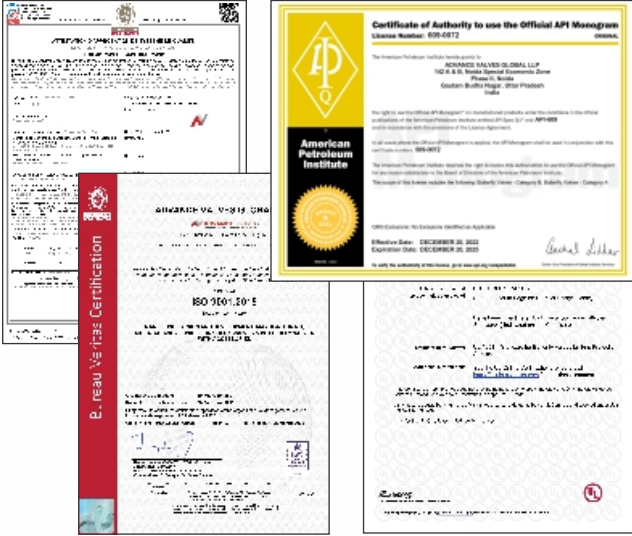
Additional tests as required can be carried out as per customer's specification and requirement.

Shell (Body)		Seat
PN-16	24 bar (g)	17.6 bar (g)
PN-20	30 bar (g)	22 bar (g)

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 H CE Marked ISO 9001:2015 & Advance Valves Butterfly Valves are also API 609 Monogram accredited. The UL certificate covers the application of valves in the Fire-Water system. This testing was conducted by Underwriters Laboratories Inc.

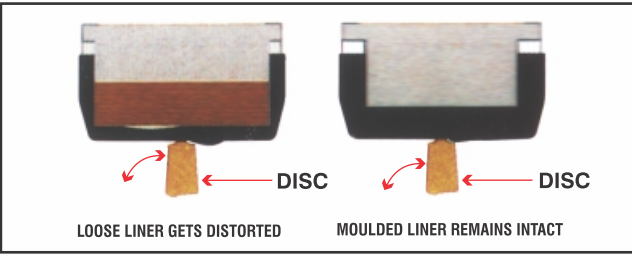


Advance Butterfly Valves has been designed and developed using latest techniques of finite Element Analysis & Computational fluid Dynamics.

Construction Features

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

Body Liner is integrally moulded 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 moulded liner resists any stretching or distortion. This is a common problem of loosely fitted liner, which results in a need for frequent replacement.



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

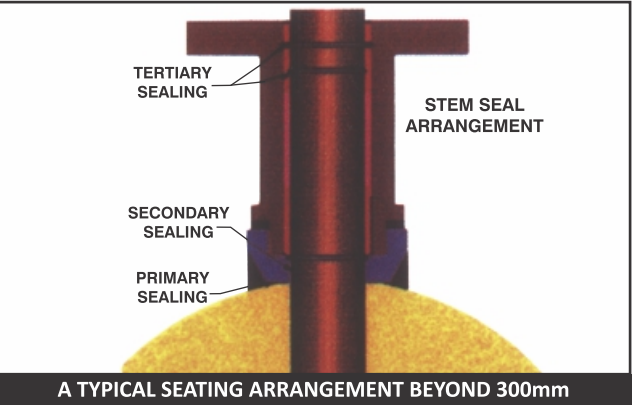
Stem: For an optimal combination of flow efficiency and structural stability, valves up to DN 200 (NPS 8) have a two-piece stem. For sizes DN 250 (NPS 10) to DN 600 (NPS 24), the stem is in single-piece construction, which ensures better distribution of the weight of the disc. The stem drives the disc through taper pin(s) to eliminate any backlash between the stem and disc. The material of construction for the stem has been standardized as High Tensile Stainless Steel (AISI 410).

Stem Seal Arrangement

Primary Sealing is provided by preloaded contact flat seat surface and rounded polished disc hub area.

Secondary Sealing is provided by the interference fit between stem and stem hole in seat 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.



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. BUNA-N(Nitrile)/EPDM/VITON-A) are available to meet wide varieties of duties within general industry, HVAC&R, building services and public utilities handling fluids such as water, air, gas, mineral oils, dilute acids and alkaline solutions. **Advance** Butterfly Valves offer an ideal as well as economic solution for sea water application through use of Ductile Ni-Resist (Austenitic Ductile Iron) grade D2 of ASTM A439.