

# ADVANCE VALVES

More than  
**25**  
Years

## CONCENTRIC BUTTERFLY VALVES

An Integrally  
Moulded Liner Design



*Changing the way you think about valves...*

## 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 effect seal between the valve body and the mating pipe flanges.

**Standard wafer 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.

**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	-
3.	-	-	ANSI 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 80mm (3") to 3mtr. (120") with model pressures rated from 10 bar (PN10) to 160 bar (#900) and in wafer, lug-type and flanged configurations.*

*Elastomer seal valves operate on the double offset principle and are rated upto 25 bar. Pressures of upto 160 bar (ANSI #900) can be achieved by metal seated valves operating on the tri-centric design principal. For further information, see the other catalogue.*

## Valve Operators

### 1. Manual (Hand Lever Operated):

As a standard practice valves of size 50mm (2") to 200mm (8") N.B. 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):

The valves of sizes 250mm (10") N.B. and above are provided with a quarter 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 etc. are provided as required.

## 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 Class 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 classes 125 & 150, ANSI B 16.5 Class 150, ANSI B 16.1 Class 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.



- 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 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 customers requirement 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.



LIFE CYCLE - TEST RIG BUTTERFLY- VALVE

*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.*

## 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 IS/ISO 9001:2008. The UL certificate covers the application of valves in the Fire - Water system. This testing was conducted by Underwriters Laboratories Inc.

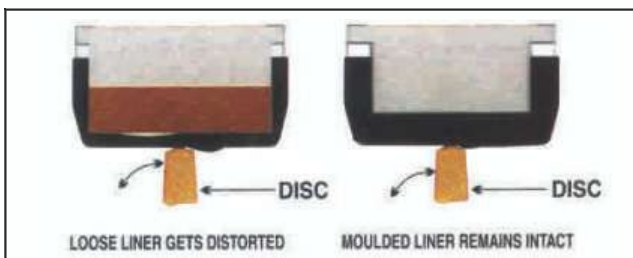


Advance Butterfly Valves have been designed and developed using computer based latest technique of Finite Element Analysis.

## Construction Features

Body is 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. Integrally moulded liner resists any stretching or distortion of the liner which is a common problem of loosely fitted liner leading to frequent replacement.



**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 Nylon coated by design. Epoxy and other coatings available on request.

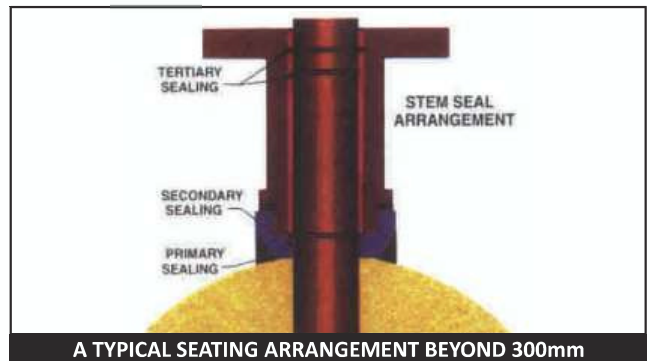
**Stem:** For optimal combination of flow efficiency and structural stability, Valves upto 200mm (8") have two piece stem. For sizes 250mm (10") to 600mm (24") N.B. stem is in single piece construction which ensures better distribution of weight of the disc. The stem drives the disc through taper pin(s) to eliminate any backlash between Stem & Disc. The material of construction for stem has been standardised as High Tensile Stainless steel (AISI 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.

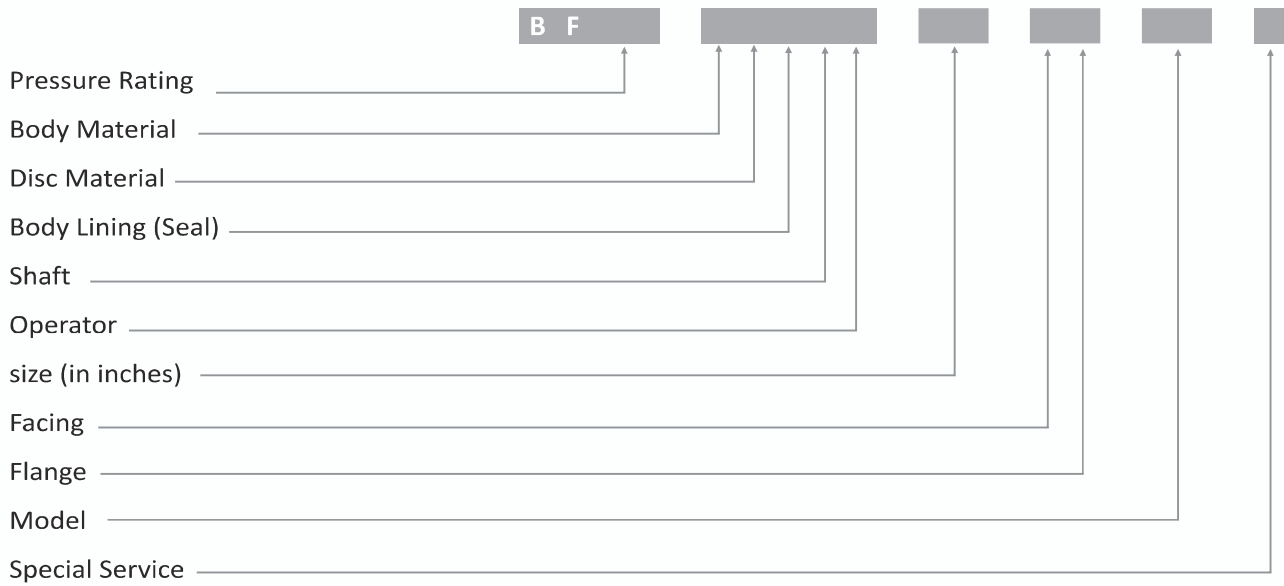


## Applications

**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.



## How to Enquire and Order?



PRESSURE RATING	
Material	Code
PN 10	10
PN 16	16
#150/PN20	15

MODEL	
Material	Code
Wafer	11
Lugged	21

BODY LINING (SEAL)	
Material	Code
EPDM	M
Viton	Y
Buna N	G

BODY / DISC MATERIAL	
Material	Code
Cast Iron	H
SGI (SGI Discs are nylon coated)	J
WCB ASTM A216	S
CA-15 ASTM A217 - J91150	E
CF8M ASTM A351 - J92900	C
CF8 ASTM A351 - J92600	A
CF8C ASTM A351 - J92710	8
CF3 ASTM A351	3
CF3M ASTM A351 - J92800	F
AB2 C 95800	B
AB2 C 95500	R
Duplex Gr 4A ASTM 890 - J92205	4
Duplex Gr 5A ASTM 890 - J93404	5
D2 ASTM A439	K

Material	Code
Duplex Gr 6A ASTM 890 - J93380	Z
LCB ASTM A352 - J03003	L
LCC ASTM A352 - J02505	M
Monel 500 - M25-S	P
Monel 400 - N35-2	Q
C12 ASTM A217	1
C5 ASTM A217	2
Alloy 20 CN7M / 904L	7
Hastealloy B ASTM A494 N7M	I
Titanium C2	T
Hastealloy C ASTM A494 CW12MW	V
LC3	X
WC6 ASTM A217	6
WC9 ASTM A217	9

SHAFT	
Material	Code
SS-431	K
17-4PH	H
SS-410	E
Duplex 4A	4
Duplex 5A	5
Duplex 6A	Z
Monel 400	Q
Monel 500	P

OPERATOR	
Material	Code
Bareshaft	B
Hand Lever	L
Gear Box	G
Electric Actuator	E
Hydraulic Actuator	H
Pneumatic Actuator	P
Electro Hydraulic Actuator	S

FACING	
Material	Code
Moulded Raised Face	C

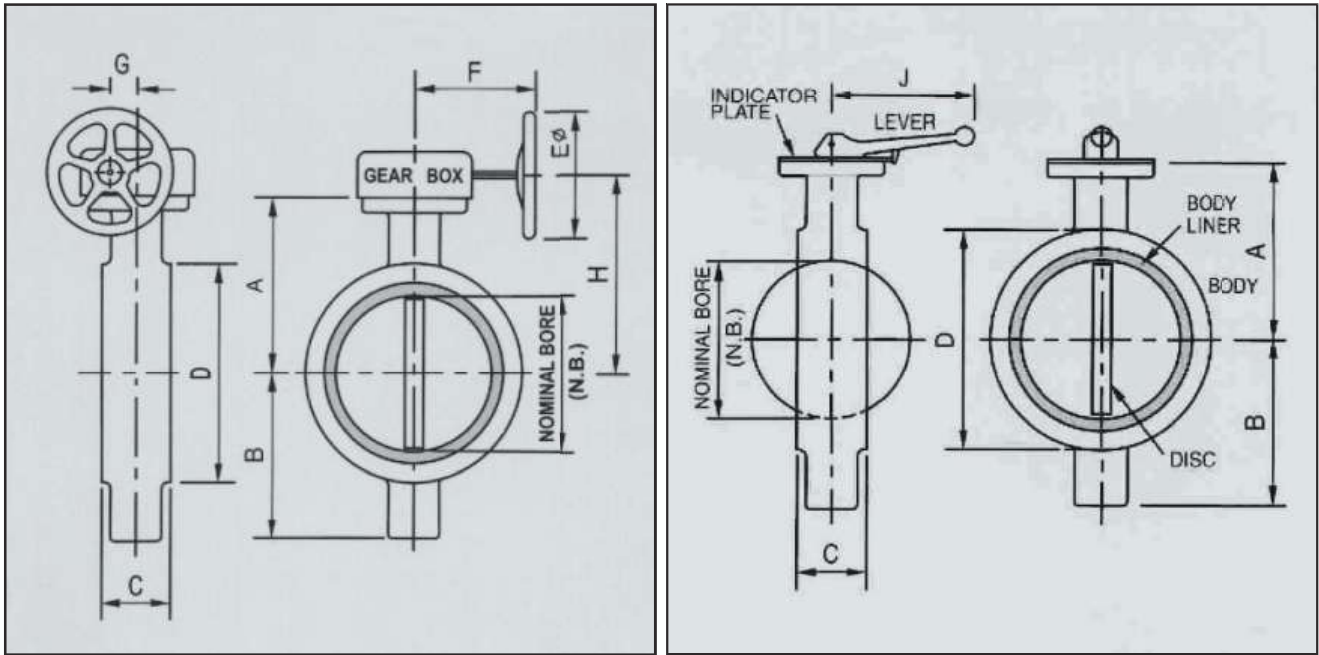
FLANGE STD	
Material	Code
ANSI B16.5	A
ANSI B16.1	K

SPECIAL SERVICE	
Material	Code
CE	P
Low Temp	L
Extended Bonnet	B
Nace	N
EPDM Coated Disc	C
UL	U
Nylon Coated Disc	Y
Epoxy Coating Disc	X

At enquiry stage, please specify all details as per above Figure Numbering System. For valve selection & guidance, please indicate the service temperature, pressure and fluid conditions. For options not listed above, please contact us.

For example, BF10.HJMEL.12.CA.11 will represent 300 mm (12") NB **Advance** Wafer type Butterfly Valve in PN 10 rating with Grey C.I. Body, Ductile Iron (Epoxy coated) Disc, EPDM Body Liner and SS-410 Stem with Gear Operator with ANSI B16.5 flange compatibility.

## Installation Dimensions



(All Dimensions in mm)

VALVE SIZE (N.B.)	A	B	C	D	E*	F*	H*	J	Approx. Gr. Wt. Kg.
50 (2")	113	68	43	96	-	-	-	237/260	3.5
65 (2.5")	121	74	46	110	-	-	-	237/260	4.0
80 (3")	128	81	46	128	-	-	-	237/260	4.5
100 (4")	146	96	52	160	-	-	-	237/260	6.2
125 (5")	158	114	56	188	-	-	-	252/260	7.7
150 (6")	174	132	56	212	-	-	-	328/260	9.0
200 (8")	198	165	60	269	-	-	-	500	14.0
250 (10")	244	215	68	321	350	212	276	631	30.0
300 (12")	275	240	78	371	425	226	309	-	44.0
350 (14")	371	265	78	436	600	268	407	-	50.0
400 (16")	390	295	102	487	450	312	437	-	72.0
450 (18")	425	325	114	539	600	312	472	-	95.0
500 (20")	451	360	127	592	600	410	505	-	120.0
600 (24")	510	435	154	694	600	410	564	-	210.0

- As per IS-13095, - AS PER API-609 (CLASS A), Note : All dimenions for PN 10, PN 16 & ANSI 150 are same.

\*Note : These dimensions are as per the standard gear operator and will change if alternate operators are used.

Manufactured & Marketed by

# ADVANCE VALVES

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