

INDDOP ENGINEERING & MARKETING PRIVATE LIMITED

BUTTERFLY VALVES

Characteristics:

Butterfly valves are quick opening valves that consist of a metal circular disc or vane with its pivot axes at right angles to the direction of flow in the pipe, which when rotated on a shaft, seals against seats in the valve body. They are normally used as throttling valves to control flow. Butterfly valves control the flow of gas or liquid by means of a disk, which turns on a diametrical axis inside a pipe or by two semicircular plates hinged on a common spindle, which permits flow in only one direction. These valves offer a rotary stem movement of 90 degrees or less, in a compact design. Unlike ball valves, butterfly valves do not have any pockets in which fluids may become trapped when the valve is closed.

Butterfly valves are available in several body styles and seal types. The flange type or lug style can be held between flanges of any type. Wafer valves are installed between two flanges using bolts or nuts and studs, while lug style valves have metal inserts installed in the valve's bolt holes and the valve is installed between two flanges using a separate set of bolts for each flange. The wafer style is used more commonly and is cheaper than the lug style.

Butterfly valves offer a number of advantages when used for the proper application. They may be used in a wide variety of chemical services, they are available with small dimensions allowing for use in areas where space is limited, and they allow a high coefficient of flow. Conversely, the design of butterfly valve creates the disadvantage of not being easy to clean, and therefore should be avoided in situations that call for sterile, medical or food processing applications.

Part	Material
Body	Cast Iron
	Ductile Iron
Disc	316 Stainless Steel
	304 Stainless Steel
	Bronze* (see note!)
	Nickel Plated or Epoxy coated Ductile Iron
Stem	316 Stainless Steel
	304 Stainless Steel
	410 Stainless Steel
Retaining Pin	304 Stainless Steel
Bottom Bushing	Bronze
	Stainless Steel
"O" Ring	Nitrile
Upper Bushing	Delrin
Taper Pin	316 Stainless Steel
Bottom Cover	Cast Iron
Gearbox	Cast Iron
Handwheel	Cast Iron
Seat	EPDM
	Buna 'N'
	Viton
	Neprene
	Hypalon

Any other special materials or requirements available on request.

APPLICABLE STANDARDS:

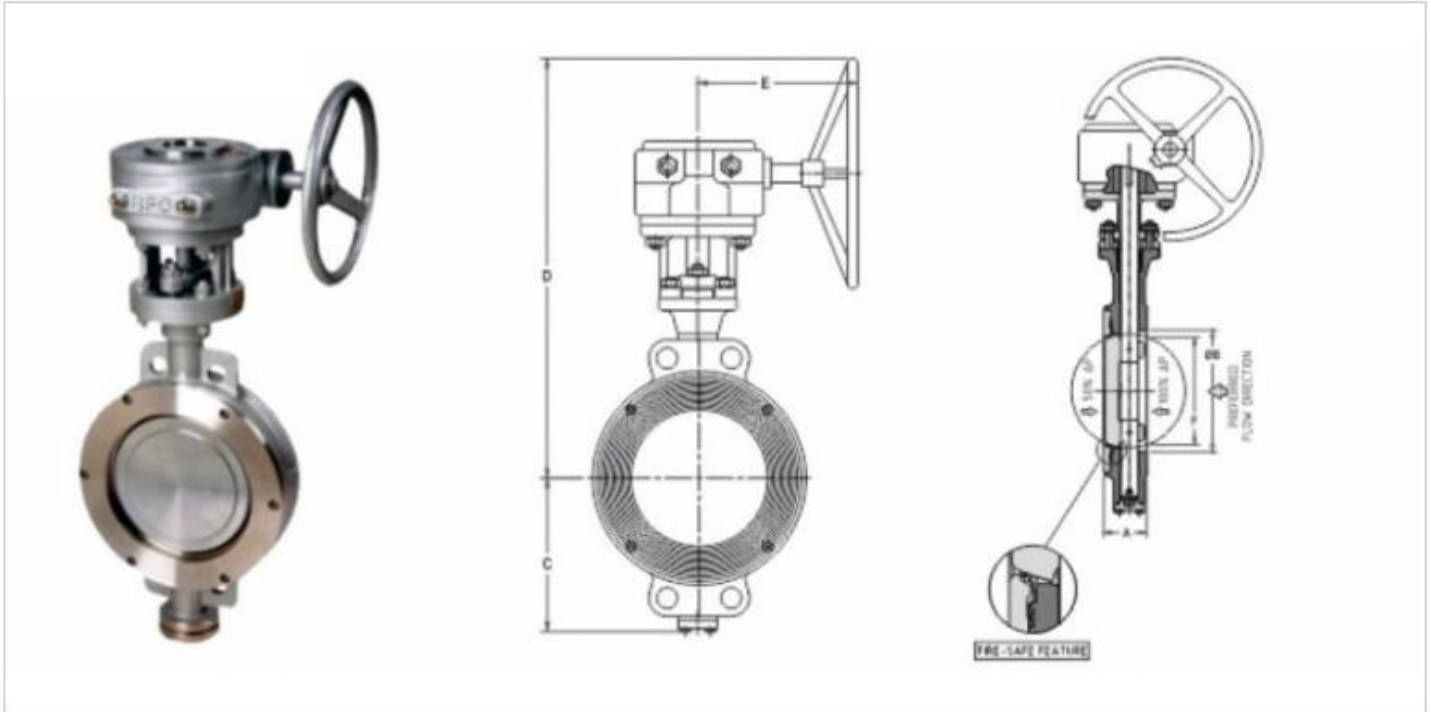
- Manufacturing: As per IS-13095 / BS-5155 / AWWA-C-504.
- Pressure Rating: PN-10, PN-16.
- Face to Face Dimensions: ISO-5752 / BS 5155 Wafer short / API – 609.
- Actuation: Hand lever - NB25 to NB150.
Gear Operated NB 200 to NB1200.
- End Connections: Wafer / Flangeless & Double Flanged.
- Suitable For Mounting Flanges To: IS / ANSI / BS / DIN Standards.
- Gasket packing not required to install between flanges.

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DOUBLE ECENTRIC BUTTERFLY VALVE



TESTING STANDARD	DESIGN STANDARD	TEST PRESSURE Kg/cm	#150	#300
API 598/ BS EN 12266-Part 1, 2	API 609/BS EN 593	HYDRO SHELL	31	79
		SEAT	22	58
		AIR SEAT	7	7

COMPONENTS	MATERIALS
BODY	WCB / CF8 / CF8M
DISC	CA15 / CF8 / CF8M
SEAT RETAINER	WCB / CF8 / CF8M
STEM	410 / 304 / 316
STEM BEARING	304 / 304 / 316
METAL SEAT	304 / 304 / 316
SEAT	PTFE/GFT
BODY SEAL	GRAPHITE
PACKING	GRAPHITE

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➔ OTHER OPTIONALS:

- ➔ Other MOC as per customer requirement.
- ➔ Locking arrangement.
- ➔ Extended stem.
- ➔ Extended bonnet.
- ➔ Other flange-drillings, subject to confirmation.
- ➔ All Dimensions are in mm.
- ➔ Due to continuous development we reserve the right to change specifications without notice.

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OUR PRODUCT RANGE

Valve Type	ASME Class	Design Standard		Valve Material		Size Range
		P-T Rating	Complies to	Shell	Trim	
Gate Valve	150	ANSI B16.34	API 600/BS 1414	WCB, LCB, CF8, CF8M, CF3, CF3M, C5,WC6, CD4MCu, Etc.	AISI: SS410, 304,304L, 316, 316L, ST6, Hard Faced, Etc.	1" TO 24"
	300					1" TO 24"
	600					2" TO 12"
	900					2" TO 12"
	1500					2" TO 12"
	2500					2" TO 8"
Globe Valve	150		API 600/BS 1873	WCB, LCB, CF8, CF8M, CF3, CF3M, C5,WC6, CD4MCu, Etc.	AISI: SS410, 304,304L, 316, 316L, ST6, Hard Faced, Etc.	1" TO 16"
	300					1" TO 12"
	600					2" TO 12"
	900					2" TO 12"
	1500					2" TO 12"
	2500					2" TO 8"
Non-Return Valve	150		API 600/BS 1868	WCB, LCB, CF8, CF8M, CF3, CF3M, C5,WC6, CD4MCu, Etc.	AISI: SS410, 304,304L, 316, 316L, ST6, Hard Faced, Etc.	2" TO 24"
	300					2" TO 24"
	600					2" TO 12"
	900					2" TO 12"
	1500					2" TO 12"
	2500					2" TO 8"
Forged Steel Gate Valve	800	API 602/BS 5352	A105, F304, F316, F304L, F316L, Etc.	- do -	¼" TO 2"	
	1500				¼" TO 1½"	
Forged Steel Globe Valve	800	API 602/BS 5352	A105, F304, F316, F304L, F316L, Etc.	- do -	¼" TO 2"	
	1500				¼" TO 1½"	
Forged Steel Check Valve	800	API 602/BS 5352	A105, F304, F316, F304L, F316L, Etc.	- do -	¼" TO 2"	
	1500				¼" TO 1½"	
Wafer Type Check Valve	150/PN 10	API 594/API 6D	CI, WCB, CF8, CF8M, Etc.	Seat: EPDM, Viton, Nitrile, Silicone, PTFE, Etc.	1" TO 28"	
	300/PN 16				1" TO 28"	
Ball Valve	150	API 6D/BS 5351	WCB, CF8, CF8M, A105, Etc.	PTFE, Reinforced PTFE, Etc.	2" TO 6"	
	300				2" TO 6"	
	800				½" TO 2"	
Butterfly Valve	150/PN 10	API 609/BS 5155	CI, WCB, CF8, CF8M, Etc.	Seat: EPDM, Hyplone, PTFE Nitrile, Silicone, etc	1" TO 48"	
	300/PN 16				1" TO 48"	

- + Any other special materials or requirements available on request.
- + Gear Box & actuator operated valves available upon request.
- + Stellite or Hard facing of valve seats available upon request.
- + Position Indicator, By-Pass arrangement, Locking arrangement available upon request.
- + Seal welded body seating available upon request.
- + Butt Weld Ends available upon request.
- + Swing Check Valves available with Dash Pot & counter Weight Arrangement upon request.
- + Butt Weld Ends available upon request.

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DESIGN SPECIFICATIONS

Items	American Standard	British Standard
Shell wall thickness and general valve design specifications for Cast Steel & Forged Valves	API 600 / API 6D / API 602 / ASME B 16.34	BS1414 (Gate valve) BS1873 (Globe valve) BS1868 (Check valve)
Pressure-temperature ratings	ASME B16.34	BS1560
Face-to-face dimensions for Flanged Ends End-to-end dimensions for Butt Weld Ends	ANSI B16.10	BS2080
End flange dimensions for Flanged Ends	ANSI B16.5	BS1560
Welding end dimensions for Butt Weld	ANSI B16.25	BS1414 (Gate valve) BS1873 (Globe valve) BS1868 (Check valve)
Welding end dimensions for Socket Weld	ANSI B 16.11	
Testing & Inspection Standard	API 598	BS 6755 (Part-I)
Radiography & NDT	ASME 16.34	

INSPECTION AND WARRANTY POLICY

Each & every valves are subjected to 100% pressure tests, according to API 598 or BS 6755 Part 1 requirements. Material test reports and inspection certificates are available on your request, while each valve is guaranteed for 12 months after placement in service, but not exceeding 18 months after shipment from our factory.

Some of the additional inspections and tests performed are:

- Random Radiograph Inspection of Body and Bonnet Castings to ASME B16.34 Appendix B
- Random Chemical Composition and Mechanical Properties Verification of Fasteners to ASTM A-193/A-194
- Liquid Penetrate Inspection of Seat Rings
- Visual Inspection of Casting to MSS-SP-55
- Receiving, In-Process, and Final Dimensional Inspections to Relevant Valve Standards.

Test / Inspection Item	Complies to	Evaluation
Chemical composition analysis		Relevant ASTM Std.
Mechanical property test	ASTM A370	Relevant ASTM Stds.
Pressure tests	API 598 or BS 6755 Part 1	API 598
Radiographic inspection	ASTM E142 / E49	ASME B16.34
Wet magnetic particle inspection	ASTM E138	
Liquid penetrant inspection	ASTM E165	
Low temperature impact test	ASTM E23	
Dimensional inspection		Relevant Valve Stds.
Visual inspection		MSS SP-55

Other inspections or tests can be performed or evaluation criteria applied when specified by the customer.