

Specification of High-Performance Butterfly Valves



High performance butterfly valves are widely used in product and chemical tankers, offshore / on shore to NACE MR0175, oil and gas field chemical, petrochemical plants, and high pressure piping systems. The valves are complied with API 607 Edition 4 fire safety standards. Adoption of a spring-loaded soft PTFE seat gives flexibility and secures long life, even with frequent operation. The soft seated valve shall be capable of bi-directional flow and provide bubble tight shut-off at full rated pressure.

TYPE NUMBERING SYSTEM

- AV-HWR High-performance WAFER type Rubber seat Butterfly valves
- AV-HSR High-performance SEMI-LUG type Rubber seat Butterfly valves
- AV-HLR High-performance LUG type Rubber seat Butterfly valves
- AV-HFR High-performance FLANGE type Rubber seat Butterfly valves
- AV-HWT High-performance WAFER type Teflon seat Butterfly valves
- AV-HST High-performance SEMI-LUG type Teflon seat Butterfly valves
- AV-HLT High-performance LUG type Teflon seat Butterfly valves
- AV-HFT High-performance FLANGE type Teflon seat Butterfly valves
- AV-MHW High-performance WAFER type Metal seat Butterfly valves
- AV-MHS High-performance SEMI-LUG type Metal seat Butterfly valves
- AV-MHL High-performance LUG type Metal seat Butterfly valves
- AV-MHF High-performance FLANGE type Metal seat Butterfly valves
- AV-FHW High-performance WAFER type Fire safe seat Butterfly valves
- AV-FHS High-performance SEMI-LUG type Fire safe seat Butterfly valves
- AV-FHL High-performance LUG type Fire safe seat Butterfly valves
- AV-FHF High-performance FLANGE type Fire safe seat Butterfly valves

STANDARD COMPLIANCE

The face to face dimension shall be in accordance with API 609, ISO 5752, KSV 7490, JIS F7480, BS 5155 or MSS SP-68

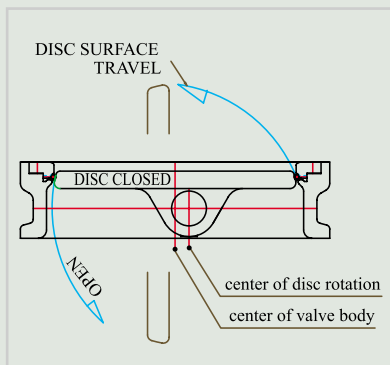
APPLICABLE FLANGE

- KS/JIS 5K, 10K, 16K, 20K, 30K
- ANSI B 16.5 Class 150LB, Class 300LB
- BS 4504 PN6, PN10, PN16, PN25
- ISO 2084 PN6, PN10, PN16, PN25
- DIN 2501 PN6, PN10, PN16, PN25

PRODUCTION RANGE

- SIZE : DN50mm (2 inch) ~ DN1200mm (48 inch)
- WORKING PRESSURE : 0bar ~ 30bar
- WORKING TEMPERATURE : -20°C ~ +250°C (Soft seat)
- WORKING TEMPERATURE : -100°C ~ +400°C (Metal seat)

High-performance Butterfly valves



The High-performance Design

The axis of disc rotation is double eccentric offset to the seat ring. When the disc rotates, it unseats a small turning angle by the cam effect. This prevents seat abrasion and provides perfect seal for a long period.

Application of piping system

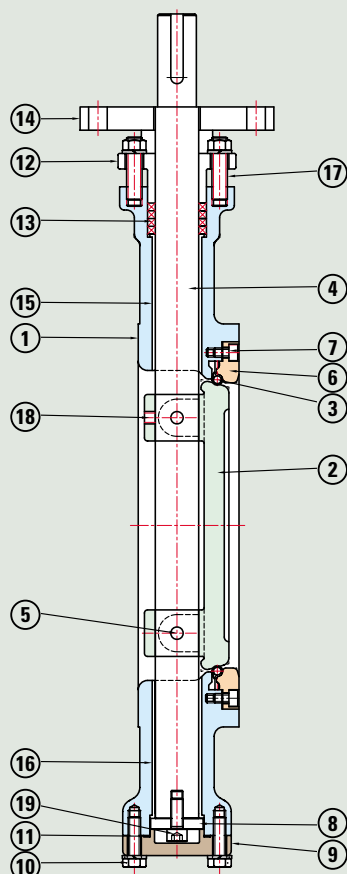
This product is of heavy load designed for high pressure flow application.

- Marine tankers-shipbuilding
- Offshore / Onshore plants, oil/gas production platform
- Chemical and petro-chemical plants
- Military application
- Fire safe piping system

Operations

The valve shall be operated with the following actuators which selected depending on location of valve, the type of work and service for which the valve is used.

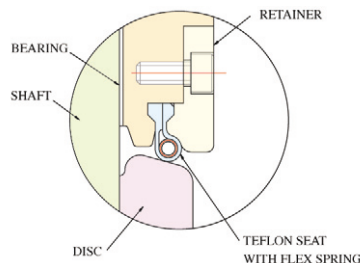
- Manual lever operation
- Manual worm gear operation
- Single or double acting pneumatic actuator operation
- Hydraulic actuator operation
- Electric motor actuator operation



Part List

| P.NO. | PART NAME | MATERIAL |
|-------|----------------|---|
| 1 | BODY | CAST IRON, DUCTILE IRON, CAST STEEL, STAINLESS STEEL, AL-BRONZE |
| 2 | DISC | CAST STEEL, STAINLESS STEEL, AL-BRONZE |
| 3 | SEAT | SS. STEEL, TEFLON, RUBBER |
| 4 | STEM | SS. STEEL (304, 316, 316L, 630), Monel |
| 5 | DISC PIN | STAINLESS STEEL |
| 6 | RETAINER | STAINLESS STEEL, AL-BRONZE |
| 7 | RETAINER BOLT | STAINLESS STEEL |
| 8 | THRUST PLATE | BRONZE, STAINLESS STEEL |
| 9 | BOTTOM COVER | MILD STEEL, STAINLESS STEEL, AL-BRONZE |
| 10 | BOTTOM BOLT | STAINLESS STEEL, MILD STEEL |
| 11 | BOTTOM GASKET | TEFLON, GRAPHITE, RUBBER |
| 12 | PACKING GLAND | SS. STEEL, MILD STEEL, BRONZE |
| 13 | PACKING | TEFLON, GRAPHITE, RUBBER |
| 14 | ACTUATOR STAND | MILD STEEL |
| 15 | STEM BEARING | STAINLESS STEEL + TEFLON |
| 16 | STEM BEARING | STAINLESS STEEL + TEFLON |
| 17 | BOLT & NUT | STAINLESS STEEL, MILD STEEL |
| 18 | SET BOLT | STAINLESS STEEL |
| 19 | THRUST BOLT | STAINLESS STEEL |

Design Features

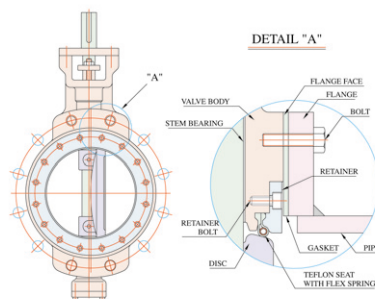


SEAT RETAINER RING

(Installation configuration in the pipe line)

Flexible teflon seat compensated by flexible spring withstand longer and can minimize the possibility of scratches by foreign article in the fluid than that of pure hard teflon.

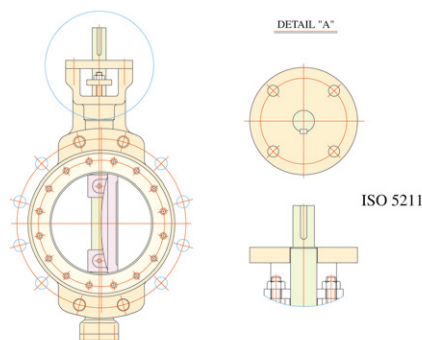
The seat provides bubble tight at bi-direction full rated pressure.



SEAT RETAINER RING

(Installation configuration in the pipe line)

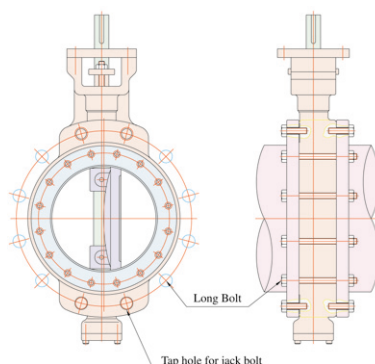
The retainer together with spring assisted self energized seat ring shall work independently from the adjacent pipe in case of the retainer separated from the flange face of the valve as required by authority and the operating torque can be kept constant without variation by pressure from adjacent pipe flange.



TOP FLANGE (ISO 5211) For Actuator

The top flange of butterfly valve is one of most important parts for mounting of actuators.

ACE VALVE provides top flange in accordance with International Standard, ISO 5211 and easy modification works can be available for various type actuator without any special tool or equipment which the remote actuator provided by actuator makers.



SEMI LUG TYPE

Ace valve provides semi lug type or flange type connection end of valve in accordance with JIS F 7480 in addition to wafer type valve. Semi-lug type connection shall allow the removal of the piping downstream of the valve under the condition of keeping the closed valve with tap holes and jack bolts to avoid spilling of liquid in the upstream pipe, while wafer type valve should be released from the pipe which requires additional works such as pumping and cleaning of the spillage at bottom in addition to manpower for removing and re-installing of the valve.