BUTTERFLY VALVES - HIGH PERFORMANCE & LINED

SUPERSEAL®

AUSTRALIAN PIPELINE VALVE®

API607, ISO 10497-5
Firesafe Certified

www.australianpipelinevalve.com.au
QUALITY COMMITMENT

Quality is Our First Priority, and is achieved by embracing a philosophy of Total Quality Commitment.
Contents

High Performance HDV Series
High Performance SLHBF, SLHBFFS & SLHBF-T Series
  Lined 2014/2016 Series
  Lined 2014/2016 HP Series
  Lined 2014/2016 HP2 Series
  Lined 2014 2P Series

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UNIQUE CAM OPERATED CLOSING MECHANISM FOR LONGER LIFE
NO OTHER VALVE OPERATES OR LASTS LIKE A DHV SERIES.

Similar to the orbit principle ball valve, this firesafe Butterfly valve operates using a cam so the final closing is purely parallel disc face seating, with the disc moving only in a linear path for a flat close-off pressing onto the seat. Conventional style butterfly valves squeeze and scrape seats as they close, causing quick wear and leakage whereas the DHV uses the stem to mechanically cam the valve closed. The DHV series has two shafts an outer and an inner. The outer moves 0-90 degrees in a circular motion. The inner is connected to a cam and moves back or forth and hence aligns the disc to the seat face radially. The disc does not touch the seat when it rotates. In conventional style valves, this is where the wear occurs and if particles of debris are present on the seat, conventional valves will damage the seat in the rotation process. The stem is not bolted to the disc which is also an advantage. The DHV valve is also very low torque and offers mechanically energised dead tight wedge like sealing on seat faces. The metal seated DHV is firesafe.

DISC ENERGISED METAL SEATED BUTTERFLY VALVE CHARACTERISTICS

1. Friction Free Opening and Closing
   This action virtually eliminates the major cause of seat wear found in conventional Butterfly, ball, gate and plug valves.

2. Low Torque Required
   Ease of operation eliminates the need for extension bars and impact handles. Can be actuated with low pressure custom pneumatic actuators.

3. Wear-resistant Hard Facing on Seat
   Contacts flexible metal body seat for positive seal.

4. Wedge Type Sealing
   Tapers at bottom of stem provide a mechanically energised and adjustable dead-tight seal at high or low differential pressure.

One of the shafts is used to rotate the disc by 90 degrees, the other is used to linearly displace the disc, thereby tightly depressing the disc on the valve seat to completely prevent leakage.

FIRESAFE API6FA, API607

1. Metal seated type for durability.
2. Ideal for high temperature.
3. Ideal for corrosion and erosion problem areas applications.
4. Wide applicable scope Class 150 to 600 up to 24 inch. All body materials.
5. Low maintenance.
6. Bi-directional zero leakage, tight shut off (perfect sealing efficiency).
7. Lower torque (no-frictional contact).
8. Non-rubbing rotation.
BODY & BODY SEAT

Body is manufactured as standard in Carbon Steel and Stainless Steel. In addition, it can be manufactured in a wide range of materials to suit any requirements such as: Low Temperature carbon steel LCB-LC3, Duplex, Monel, inconel, hastelloy, 254 SMO Super-austenitic, Alloy Steel WC6-WC9, Super-duplex, Inconel, Titanium. Alloy 20, RTFE, can be specified on the seating surfaces of the valve body. The valve disc is of the same material as specified for the valve body seat. The valve disc is machined on the outside diameter to conical form that matches the seat in the body. Firesafe style is available.

DISC

External shaft is used to rotate the disc by 90 degrees, Internal shaft displaces the disc, thereby depressing the disc on the valve seat to completely prevent leakage. High strength and corrosion-resistant materials can be specified.

INTERNAL & EXTERNAL SHAFT

END COVER

End cover is the same material as specified for the valve body.

PACKING

Three types of seal rings are used, Metal O-Ring or RTFE and VITON O-Ring. Metal O-Rings are available for high temperature and abrasive applications.
High Performance Butterfly Valves

Model SLHBF, SLHBFFS & SLHBF-T
150 to 1500 Class Double & Triple Offset

Standard and Firesafe
• Double & Triple offset style.
• Size range 50 NB to 1000 NB (2” to 40”).
• ANSI class 150 to 1500.
• Metal seating for high pressure rating with PTFE insert.
• Wafer, lugged & flanged type end connections.
• ANSI class VI shut-off, bubble tight.

Principles of Valve Design - SLHBF, SLHBFFS
The standards SLHBF/SLHBFFS design is double offset (double eccentric). Triple eccentric (triple offset) SLHBF-T style is also available for class V and VI metal seated design.

The basic concept of the SLHBF/SLHBFFS is to only utilise a thin slice of a ball valve at the seat ring area. The body is only wide enough to hold the disc, shaft and seat in place, all the remaining material is eliminated because it serves no purpose. Ball valves have 2 seats, but floating balls only seal on the upstream seat hence the sealing effectiveness of a HP Butterfly Valve is the same. The disc seating edge is a segment of a sphere and creates a reliable, high pressure seal against an un-interrupted 360° seat sealing surface. The disc profile is very thin and allows maximum flow with a low pressure drop.

The most common use of the SLHBF/SLHBFFS is to shut-off flow inside a pipeline. Every component of the valve is designed to contribute to this goal. The disc, shaft, bearings, packing and disc pins all work together to ensure that the disc is accurately positioned when closed to allow the seat to energise to the disc and create a seal.

FEATURES SLHBF/SLHBFFS
The SLHBF Range is based on a unique quarter-turn design. The double offset shaft and disc configuration together with the advanced high technology seat system provides a reliable rugged multi-purpose butterfly valve range. A triple offset design is also available and is ideal for metal to metal seated applications where a class VI shut off is required.

At the point of the disc opening, the double offset disc provides a cam-like action, thus preventing excessive seat wear and ensuring a long maintenance free life.
- Seat removal is possible without disassembly of the shaft and disc.
- Body insert protects seat from abrasion and erosion.
- Grafoil or PTFE seal-ring & packing.
- Shaft bearing in PTFE or AISI 316.
- 2 Piece stem for extra flow.
Actuator bracket according to ISO 5211, which allows replacement of the stem seals without removal of the actuator.

PTFE-Seat System - SLHBF/SLHBFFS
In the preferred flow-direction, the PTFE-Seat system provides optimum performance. In this design, the line pressure acts as a positive force in the seat system even in fluctuating working conditions. The seat ring is well protected by the valve-body, thus preventing seat distortion.

Bi-directional* - SLHBF/SLHBFFS
The primary PTFE-seat ring is backed up by a secondary metal ring. This metal seat provides a mechanical load to energize the PTFE-seat. The metal sealing ring secures and encapsulates the PTFE ring to ensure rigidity. In combination with the line pressure a Bi-directional sealing against the line pressure is obtained.

* Bi-directional flow, however, bi-directional leak tight shut off must be specified with order.

Fire Safe - SLHBFFS
The model SLHBFFS has a secondary metal seat which gives bi-directional sealing in the event of the PTFE seat insert being burned away in a fire.

Metal to Metal Seat - SLHBF/SLHBFFS
High temperature service and Abrasive service. Bi-directional and inherently firesafe design. The primary metal seal enables this execution to be used up to 670°C. Seat-rings available are stainless steel ANSI 316L-chromium plated, (maximum allowed temperature: 310°C) and Inconel 625 (maximum allowed temperature: 760°C). As a result the Metal to Metal range meets the full pressure and temperature rating according to ANSI class ratings. For class VI or API598/ISO5208 metal to metal shut off a triple eccentric disc design is required. Seat leakage can be specified (metal seated specification) to API598 (ISO5208 Leakage Class A), API6D or FCI 70-2 Class VI (Triple eccentric metal seated only).
Superseal Model SLHBF-T 150 to 1500 Class triple offset metal seat butterfly valves provide a bi-directional and bubble-tight shut-off which is attributed to the geometry of the triple offset seat. Available in metal to metal and metal laminated graphite seat insert designs. Can also be used for flow control linear flow characteristics between 90 degrees and 70 degrees of opening.

The valve stem is offset from the seat area (1st offset) and the valve seat surface centre line is offset against the centre line of the pipe (2nd offset) and the conical axis is offset from the valve centre line (3rd offset: inclined cone). The 3rd offset completely eliminates rubbing or scraping. The seat surfaces of the body and seat ring in this triple offset design, contact with an inclined “cone-in-cone”, and this design requires precision seating tolerances and durability to ensure a slight precision lapped wedging mating effect. In addition, the angle of contact between the body and seat ring provides a low opening and closing torque due to almost no wedging and no scraping action on opening or closing (unlike trunnion mounted ball valves). This eccentric triple offset design provides excellent sealing performance and seat durability and it hardly ever needs repair under normal service conditions.

The seat design can be all metal to metal (optional resilient metal seat design) or multiple laminated using resilient metal alternated with one or even two of the following laminations depending on service: graphite/aramid fibre/ceramic fibre.

**Characteristics and Merits - SLHBF-T**

- Excellent seat durability and low operating torque due to non-rubbing characteristics of triple offset construction.
- Bi-directional zero leakage service available (when specified).
- Unrestricted selection of face to face dimensions for API, ASME (ANSI), BS, ISO etc. and perfect interchangeability of gate, ball, plug, high performance butterfly, and other valves.
- Low emission design, quarter turn construction, low operating torque and lower cost.

Leakage rates range to FCI-70 Class IV, V or VI through to zero leakage. Valves can be specified to:-
- API598 Zero Leakage
- ISO 5208 Leakage Rate A
- EN1866
- API6D
Wafer & Lug Dimensions
CLASS 150 & 300
Model SLHBF, SLHBFFS & SLHBF-T

APPLICABLE STANDARDS

Mounting Pad: ISO 5211
End Flange: ANSI B16.5
Wall Thickness: ANSI B16.34
Face to Face: MSS SP-68
Pressure Temperature Rating: B16.34
Design API609

150LB & PN25

DIMENSIONS (MM)

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ISO 5211 MOUNTING PAD *
- F07
- F10
- F14
- F16
- F25

* Optional  ** Indicative only SLHBT-T and SLHBF can vary. Refer drawing.

WEIGHT (KG)

| LUG | 5.5 | 15.5 | 21 | 36 | 45 | 69 | 95 | 162 | 216 | 242 | 554 |
| WAFER | 9.5 | 11 | 16 | 27 | 30 | 45 | 68 | 120 | 168 | 195 | 433 |

300LB†

DIMENSIONS (MM)

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ISO 5211 MOUNTING PAD *
- F07
- F07
- F10
- F10
- F14
- F14
- F14
- F16
- F16
- F25

† ALSO SUIT AS/BST-F TO J  * Optional  ** Indicative only SLHBT-T and SLHBF can vary. Refer drawing.

WEIGHT (KG)

| LUG | 15.5 | 24 | 36 | 54 | 79 | 117 | 253 | 329 | 504 | 649 | 986 |
| WAFER | 10 | 13 | 19 | 32 | 39 | 55 | 167 | 195 | 325 | 407 | 632 |

600 to 2500 Class refer to drawing.

PAGE 8
## Parts List

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>QTY</th>
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<th>Description</th>
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<td>Wrench Bolt</td>
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Indicative example only, design varies according to size, class and specifications. Refer to as-built drawing.
For Firesafe and metal seat design. 150 to 2500 class refer to drawing.
### Cv Rating

**ANSI 150 CLASS**

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* SLHBFFS torque refer to data sheets.
**SLHBF - A L J B R G -**

### SEAT DESIGN

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<th>MODEL</th>
<th>RATINGS</th>
<th>END CONNECTIONS</th>
<th>BODY MATERIALS</th>
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<th>SEAT</th>
<th>PACKING</th>
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<td>D = WCC</td>
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<td>SLHBF</td>
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<td></td>
<td>Z = SPECIAL</td>
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</tr>
</tbody>
</table>

**EXAMPLE - SLHBF-ALJBRG**

Standard Model

150LB

Lug type

CF8M Stainless steel body

F316 Trim

RPTFE Seat insert

Graphite Packing

Double offset design

---

**RPTFE + LIP SEAL**

**FIGURE**: SLHBF, SLHBFSS & SLHBF-T

---

**PTFE SEAT**

**(NON FIRESAFE)**

**FIGURE**: SLHBF, SLHBFSS & SLHBF-T

---

**LAMINATED METAL**

**FIRESAFE**

**FIGURE**: SLHBF, SLHBFSS & SLHBF-T

---

**METAL SEAT**

**FIRESAFE**

**FIGURE**: SLHBF, SLHBFSS & SLHBF-T

---

1. Double sealing construction
   - Primary RTFE seat (Non-fire)
   - Secondary metal seat (during and after fire)
2. Excellent sealing (in both directions on request)
3. Cost effective

---

1. Reinforced PTFE
2. Excellent sealing (in both directions on request)
3. Cost effective

---

1. Multi-sealing triple eccentric construction
   - Primary metal seat
   - Multiple metal laminations graphite or PTFE filled
2. Excellent sealing in Bi-directions
3. Inherently firesafe to API607 6th Edition

---

1. High temperature capability allows maximum of 620°C (1150°F)
2. High pressure capability
3. Stainless steel seating area is resistant to corrosion and wear
4. Inherently firesafe in class VI or API598 (metal seat) shutoff

---

* Actual drawing supplied on request.

---

**PAGE 11**

*In class VI and API598/ISO 5208 Rate A metal seated, a triple eccentric (triple offset) design is required. Indicative drawing only.*
Butterfly Valves, Flanged and Wafer

Size: 50NB - 1800NB (2” to 72”)
Class: 150 to 900 ANSI
Design: Flanged: MSS-SP-67   Wafer: MSS-SP-68 / API609
Hard face or soft seats
Face to Face: ASME B16.10 /MSS-SP-67 MSS-SP-68 / API 609
Flange Dimensions: ASME B16.5, over 24” - MSS-SP-44 OR API 605
Pressure Test: API 598, ISO5208, EN1266, API6D
Pressure/Temperature: ASME B16.34
Lined Butterfly Valve
10/16 Bar

TYPE: 2014, 2016, 2014A
1000 KPA (TO 600NB) & 1600 KPA RATED (TO 300NB)
SUIT AS/BS TABLE D, E, ASA 125, PN10, PN16 etc
Shaft weather seal accommodates all types of operators: handle, gear, electric and pneumatic actuators.

Pressure surge seals* are moulded integrally inside the seat shaft hole area. These rings below disc are materially compatible with the seat to provide failsafe sealing around stem, eliminating possible leakage.

The phenolic backed* seat is non-collapsible, stretch resistant and blowout proof. Easily field replaceable.

Polished disc flats "mate" with seat flats to give a highly efficient seal prevents leakage into the stem area.

Precision profile disc provides bubble-tight shut off with minimal disc/seat interference, assuring minimum torque and longer seat lift.

Supported stem seal protects against distortion, a common cause of stem leakage.

Strong precision key gives positive attachment for manual lever or actuator.

Lubrerized bushings give stem support at actuator mounting and immediately outward of seat.

Precision taper pins ensure positive, vibration proof, stem to disc connection. Easily field replaceable.

Valves available with both wafer and lug type bodies. Fully lined body in a broad range of materials - including Teflon.

One piece thru-stem design ensures dependability and positive disc control.

Alignment features allow easy installation between pipeline flanges; a real installation cost saver. (model 2014A HP2 & 2016HP2)

Axial bearing prevents shaft overload.

The disc is precision manufactured to close tolerances on the O.D. and the flats. Seating edge is a polished half ball for torque control.

The modern seat and disc design insures positive sealing while maintaining low seating torque. The superseal design extends seat life by eliminating any bunching or tearing.

The superseal seat design* has a much smaller mass of elastomer which can swell, in turn torque is controlled to a reasonable degree.

The conventional disc has been sanded to remove rough area, precise dimensions are not maintained.

The conventional design relies on distortion and bunching of the seat to achieve a bubble tight shut off. Seat life is decreased causing higher maintenance cost and increased down time.

Elastomers are subject to swelling from fluid absorption which can increase the mass of the seat. This increase can and often does cause excessively high seating torque. Seat life is shortened.

- Precision machined disc edge and shaft flats.
- Bonded distortion proof seat, close tolerances.
- Positive shaft seals.
- Low potential of seat swell.
- Controlled torque by design superiority.

- Non-precision disc dimensions.
- Seat distorts during installation and operation.
- Shorter seat life.
- Higher torque due to bunching and potential swelling.

*Design varies according to size, rating and material specifications.
SPECIFICATIONS

1. **Available To Suit Following Flanging**
   ANSI (ASA) 125LB/150LB, A.S/B.S. Table D, E and JIS, DIN etc. Face to face dimension generally in accordance with BS5155/ISO5752

2. **Fluid Application**
   Water, seawater, sewage, air, oil, powder, petroleum, gas, chemicals, salts, alkalines etc.

3. **Operation**
   Generally flow control lever & notch plate to 300NB, gear op over 300NB

4. **Mounting**
   To ISO 5211 on request.
   Long lasting, high performance American design.

---

**PRESSURE RATING**

Bi-directional bubble-tight shut off seat tested to 110% of full rating.

2 types available in this model: Working pressure: 150 psig (1000kpa) and 232 psig (1600kpa). 1600kpa version only available up to 300NB in this model. See HP Version brochure if higher pressure required.

Over 600NB request pressure rating.

---

**GENERAL APPLICATIONS**

<table>
<thead>
<tr>
<th>CONTINUOUS WORKING TEMPERATURE RANGE</th>
<th>DISC MATERIAL</th>
<th>SEAT MATERIAL</th>
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<tbody>
<tr>
<td>Steam, Water, Hot Gases, Powders, Slurries and Aqueous Slurries of an abrasive nature</td>
<td>Liquids - 10°C to 120°C Dry Services - 10°C to 100°C</td>
<td>Stainless Steel</td>
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<tr>
<td>Brines, Sea Water, Estuary Water, Marine Bilge &amp; Ballast Systems</td>
<td>-10°C to 90/100°C</td>
<td>Aluminium Bronze or ENP or S/S or Nylon coated</td>
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<td>Oils, Fuels, Water, Air, Gases, Powders, Pellets, Slurries etc.</td>
<td>Hydrocarbons (Except Aromatics) - 10°C to 90°C Other Liquids - 10°C to 90°C Dry Services - 10°C to 60°C</td>
<td>Teflon or Nylon Coated or SG Iron or ENP or stainless</td>
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<tr>
<td>Water &amp; other non erosive fluids</td>
<td>All -10°C to 90/100°C (Solid PTFE will do up to 160°C)</td>
<td>S.G Iron or powder coated</td>
</tr>
</tbody>
</table>

---

**PAGE 15**
**MATERIALS**

1. **Body**
   - Cast iron, stainless ductile iron, aluminium, carbon steel, stainless steel etc

2. **Disc**
   - 316SS, 304SS, AL-Bronze, hard epoxy coated, hard rubber coated, nickel plated, PTFE coated, 410SS etc

3. **Stem**
   - 316SS, 304SS, PTFE coated, AL-Bronze etc.

4. **Seat**
   - NBR (90°-100°C), EPDM (90°C) teflon, food grade rubber, Buna-N, Viton, Hypalon etc

5. **Retaining Pin/Gland Ring**
   - 304SS/316SS/410SS

6. **Bottom Bushing**
   - Bronze/Nylon

7. **O-Rings**
   - NBR (nitrile)/EPDM

8. **Upper Bush**
   - Delrin/Nylon/Bronze

**INSTALLATION**

(Do not use gaskets)

- Pipework opened to allow valve free entry, disc in semi-closed position

- Valve in semi-open to protect disc edge and reduce rubber interference during installation and start up, this helps reduce initial torque build up.

- Disc should be turned to full open position after flange alignment and before doing up flange bolts.

**TORQUE**

Torques based on clean, wet fluids. 20% safety factor recommended. For oil/lubricated fluids torque can reduce from 20% to 50%.

For non lubricating dry gases torque can increase 35% to 80% (see separate chart).

Dry or abrasive/dirty service, temperature variations as well as infrequent use can all dramatically increase torque.

---

**DIMENSIONS**

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<tr>
<th>VALVE SIZE</th>
<th>VALVE DIMENSION</th>
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**SEAT PRESSURE / TEMPERATURE**

**OPERATING TORQUE (NM)**

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<td>24</td>
<td>1375</td>
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</table>

*Torque shown is break/reseating (same)
Lined Butterfly Valve
16/21 Bar

2100 KPA RATED TO 300NB
1600 KPA RATED TO 350-400NB
SUIT AS/BS TABLE F ANSI 150 PN16/20 etc
Shaft weather seal accommodates all types of operators: handle, gear, electric and pneumatic actuators.

Pressure surge seals* are moulded integrally inside the seat shaft hole area. These rings below disc are materially compatible with the seat to provide failsafe sealing around stem, eliminating possible leakage.

The phenolic backed* seat is non-collapsible, stretch resistant and blowout proof. Easily field replaceable.

Polished disc flats "mate" with seat flats to give a highly efficient seal prevents leakage into the stem area.

Precision profile disc provides bubble-tight shut off with minimal disc/seat interference, assuring minimum torque and longer seat lift.

Supported stem seal protects against distortion, a common cause of stem leakage.

Strong precision key gives positive attachment for manual lever or actuator.

Lubrized bushings give stem support at actuator mounting and immediately outward of seat.

Precision taper pins ensure positive, vibration proof, stem to disc connection. Easily field replaceable.

Valves available with both wafer and lug type bodies. Fully lined body in a broad range of materials - including Teflon.

One piece thru-stem design ensures dependability and positive disc control.

Alignment features allow easy installation between pipeline flanges; a real installation cost saver.

(model 2014A HP2 & 2016HP2)

Axial bearing prevents shaft overload.

---

**SEAL CONSTRUCTION & FEATURES**
(Benefits of Superseal design compared to traditional designs)

- **Superseal Construction**
  - The disc is precision manufactured to close tolerances on the O.D. and the flats. Seating edge is a polished half ball for torque control.
  - The modern seat and disc design insures positive sealing while maintaining low seating torque. The superseal design extends seat life by eliminating any bunching or tearing.
  - The superseal seat design* has a much smaller mass of elastomer which can swell, in turn torque is controlled to a reasonable degree.

- **Traditional Construction**
  - The conventional disc has been sanded to remove rough area, precise dimensions are not maintained.
  - The conventional design relies on distortion and bunching of the seat to achieve a bubble tight shut off. Seat life is decreased causing higher maintenance cost and increased down time.
  - Elastomers are subject to swelling from fluid absorption which can increase the mass of the seat. This increase can and often does cause excessively high seating torque. Seat life is shortened.

- **Features**
  - Precision machined disc edge and shaft flats.
  - Bonded distortion proof seat, close tolerances.
  - Positive shaft seals.
  - Low potential of seat swell.
  - Controlled torque by design superiority.
  - Non-precision disc dimensions.
  - Seat distorts during installation and operation.
  - Shorter seat life.
  - Higher torque due to bunching and potential swelling.

*Design varies according to size, rating and material specifications.
PRESSURE RATING
(to 300NB)
2100 KPA Working pressure:-
Bi-directional bubble-tight shut off and seat tested to 110% of full rating.
Test Pressure: 314 psi.
Over 300NB rating is 1600 KPA to 400NB

SPECIFICATIONS
1. Available To Suit Following Flanging
   ANSI (ASA) 150LB, AS/BS Table E, PN16, JIS, DIN etc. Face to face dimension generally in accordance with BS5155/ISO5752.

2. Fluid Application
   Water, seawater, sewage, air, oil, powder, petroleum, gas, chemicals, salts, alkalines etc.

3. Operation
   Generally flow control lever & notch plate to 300NB, gear op over 300NB

4. Mounting
   To ISO 5211 on request.
   Long lasting, high performance American design.

GENERAL APPLICATIONS
| Stream, Water, Hot Gases, Powders, Slurries and Aqueous Slurries of an abrasive nature | Liquids - 10°C to 120°C Dry Services - 10°C to 100°C | Stainless Steel | General Purpose EPDM |
| Brines, Sea Water, Estuary Water, Marine Bilge & Ballast Systems | -10°C to 90/100°C | Aluminium Bronze or ENP or S/S or Nylon coated | Black Nitrile or EPDM |
| Oils, Fuels, Water, Air, Gases, Powders, Pellets, Slurries etc. | Hydrocarbons (Except Aromatics) - 10°C to 90°C Other Liquids - 10°C to 90°C Dry Services - 10°C to 60°C | Teflon or Nylon Coated or SG Iron or ENP or stainless | Black Nitrile |
| Water & other non erosive fluids | All -10°C to 90/100°C (Solid PTFE will do up to 160°C) | S.G Iron or powder coated | ANY |
Torques based on clean, wet fluids. 20% safety factor recommended. For oil/lubricated fluids torque can reduce from 20% to 50%.

For non lubricating dry gases torque will increase 35% to 80%.

Dry or abrasive/dirty service, temperature variations as well as infrequent use can all dramatically increase torque.

This brochure is general in its nature and details shown are subject to change at any time without notice.
Lined Butterfly Valve
High Pressure 25Bar

2500 KPA Rated Type 2014-HP2, 2014A-HP2, 2016-HP2
50NB TO 300NB SUIT AS/BS TABLE H, ANSI 150, PN25
Shaft weather seal
Actuator flange accommodates all types of operators: handle, gear, electric and pneumatic actuators.

Pressure surge seals* are moulded integrally inside the seat shaft hole area. These rings below disc are materially compatible with the seat to provide failsafe sealing around stem, eliminating possible leakage.

The phenolic backed* seat is non-collapsible, stretch resistant and blowout proof. Easily field replaceable.

Polished disc flats "mate" with seat flats to give a highly efficient seal prevents leakage into the stem area.

Precision profile disc provides bubble-tight shut off with minimal disc/seat interference, assuring minimum torque and longer seat lift.

Supported stem seal protects against distortion, a common cause of stem leakage.

Strong precision key gives positive attachment for manual lever or actuator.
Luberized bushings give stem support at actuator mounting and immediately outward of seat.
Precision taper pins ensure positive, vibration proof, stem to disc connection. Easily field replaceable.

Valves available with both wafer and lug type bodies. Fully lined body in a broad range of materials - including Teflon.

One piece thru-stem design ensures dependability and positive disc control.
Alignment features allow easy installation between pipeline flanges; a real installation cost saver. (model 2014A HP2 & 2016HP2)

Axial bearing prevents shaft overload.

Seal Construction & Features
(Benefits of Superseal design compared to traditional designs)

This brochure is general in its nature and design is subject to change at any time without notice.

---

**Superseal Construction**

- The disc is precision manufactured to close tolerances on the O.D. and the flats. Seating edge is a polished half ball for torque control.
- The modern seat and disc design insures positive sealing while maintaining low seating torque. The superseal design extends seat life by eliminating any bunching or tearing.
- The superseal seat design* has a much smaller mass of elastomer which can swell, in turn torque is controlled to a reasonable degree.
- Precision machined disc edge and shaft flats.
- Bonded distortion proof seat, close tolerances.
- Positive shaft seals.
- Low potential of seat swell.
- Controlled torque by design superiority.

**Traditional Construction**

- The conventional disc has been sanded to remove rough area, precise dimensions are not maintained.
- The conventional design relies on distortion and bunching of the seat to achieve a bubble tight shut off. Seat life is decreased causing higher maintenance cost and increased down time.
- Elastomers are subject to swelling from fluid absorption which can increase the mass of the seat. This increase can and often does cause excessively high seating torque. Seat life is shortened.
- Non-precision disc dimensions.
- Seat distorts during installation and operation.
- Shorter seat life.
- Higher torque due to bunching and potential swelling.

*Design varies according to size, rating and material specifications.
SPECIFICATIONS

1. **Available To Suit Following Flanging**
   ANSI (ASA) 150LB, B.S. Table H, PN25 etc. Face to face dimension generally in accordance with BS155/ISO5752

2. **Fluid Application**
   Water, seawater, sewage, air, oil, powder, petroleum, gas, chemicals, salts, alkalines etc.

3. **Operation**
   Generally flow control lever & notch plate to 100NB, gear op over 100NB

4. **Mounting**
   To ISO 5211 on request.
   Long lasting, high performance American design.

---

**Pressure Rating**

(50NB to 300NB Only)

Bi-directional bubble-tight shut off to 2500 KPA, and seat tested to 110% of full rating. Body is tested to 150% of full rating.

Working pressure: 2500 KPA.

Seat test pressure: 2750 KPA.

---

**General Applications**

<table>
<thead>
<tr>
<th>General Applications</th>
<th>Continuous Working Temperature Range</th>
<th>Disc Material</th>
<th>Seat Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam, Water, Hot Gases, Powders, Slurries and Aqueous</td>
<td>Liquids -10°C to 120°C Dry Services -10°C to 100°C</td>
<td>Stainless Steel</td>
<td>General Purpose EPDM</td>
</tr>
<tr>
<td>Brines, Sea Water, Estuary Water, Marine Bilge &amp; Ballast Systems</td>
<td>-10°C to 90/100°C</td>
<td>Aluminium Bronze or ENP or S/S or Nylon coated</td>
<td>Black Nitrile or EPDM</td>
</tr>
<tr>
<td>Oils, Fuels, Water, Air, Gases, Powders, Pellets, Slurries etc.</td>
<td>Hydrocarbons (Except Aromatics) -10°C to 90°C Other Liquids -10°C to 90°C Dry Services -10°C to 60°C</td>
<td>Teflon or Nylon Coated or SG Iron or ENP or stainless</td>
<td>Black Nitrile</td>
</tr>
<tr>
<td>Water &amp; other non erosive fluids</td>
<td>All -10°C to 90/100°C (Solid PTFE will do up to 160°C)</td>
<td>S.G Iron or powder coated</td>
<td>ANY</td>
</tr>
</tbody>
</table>

---

**Pages 23**
T orques based on clean, wet fluids. 20% safety factor recommended. For oil/lubricated fluids torque can reduce from 20% to 50%.

For non lubricating dry gases torque will increase 35% to 80%.

Also, dry or abrasive/dirty service, temperature variations as well as infrequent use can all dramatically increase torque.
**Service:**
Hygenic, Chemical, Industrial, Mining, Oil & Gas, High Temperature

**Size Range:**
50 to 600mm

**Pressure Rating:**
0 to 1000 kPa in S/S trim with flexible liner
0 to 700 kPa with rubber or Teflon discs or solid Teflon seat
500 kPa max rating on dead end service

**Temperature Rating:**
- Minus 20°C to 110°C with EPDM seats
- Minus 8°C to 90°C with Buna N seats
- Minus 5°C to 110°C with Teflon lined Buna N seats
- Minus 20°C to 130°C with Teflon lined EPDM seats
- Minus 10°C to 100°C with Urethane
- Minus 20°C to 150°C with solid Teflon

**Standard Materials:**
- **Body:** Cast Iron, 316SS etc
- **Disc:** 316 S/S EPDM encapsulated, Teflon encapsulated
- **Stem:** 316 S/S, EPDM or Teflon encapsulated
- **Seat:** EPDM or Buna N
  - Teflon - Buna N backed
  - Teflon - EPDM backed
  - Urethane
  - Teflon - solid

**Flanging:**
- AS 2129 Table E
- ANSI Class 125/150
- PN10, PN16

**Fully encapsulated Teflon trim available**

**Body liner**
Made of high quality elastomers such as Buna N, Solid PTFE, EPDM, PTFE EPDM (Food grade) etc. assuring economical valve performance even in automated process systems and high operating pressures

**“Double - D” STEM**
Featuring visual position indication

**Mounting Flange**
as per ISO 5211
Compatible to a variety of operating options

**One-piece Disc / Stem**
Offered in variety of materials & coatings

**Centering Lugs**
For accurate positioning of valve between flanges

**Atmospheric seal (O-Ring)**
Providing external corrosion protection

**Triple stem bearing**
Maintenance free, with SS + PTFE / Polyacetal bearings

**Two-piece Body**
Variety of Body Materials available
**Design:** Centric - Wafer and Lug  
**Size / Pressure Rating:** DN 50mm to 300mm (2” to 12”) PN 3.5, PN 10, PN 16  
**Operation:** Bare Stem, Flow Control Lever, Worm Gear & Automated  
**Reference Standards:** API 609, API 598, BS 5155, BS 6755

### MATERIALS OF CONSTRUCTION

<table>
<thead>
<tr>
<th>Component</th>
<th>Material Options Available</th>
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</table>
| Body      | Cast Iron FS220  
Carbon Steel ASTM A216 WCB  
Ductile Iron GGG40  
Stainless Steel ASTM A351 CF8  
Stainless Steel ASTM A351 CF8M |
| Disc & Stem | Carbon Steel ASTM A105/WCB + Nylon Coating or PTFE Coated  
Stainless Steel ASTM A351 CF8/CF8M/316L/CF3M  
Nickel  
Titanium  
Hastalloy |
| Liner     | PTFE (Solid)  
Buna N (Nitrile)  
EPDM  
Silicon  
Viton  
PTFE (EPDM Backed)  
White food grade Buna N  
White food grade EPDM |

### GENERAL DRAWING MM

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We can also supply 350NB to 600NB (14” up to 24”)
DETAILED DRAWINGS
(as built dimensions and materials will be inserted in accordance with individual drawing)

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Note: Up to 600 NB available
*Dimensions shown are for PTFE Lined

ITEM | NAME   | QTY | MATERIAL
--- | ------ | ---- | --------
1  | Body   | 2   |         
2  | Seat   | 1   |         
3  | Disc-Stem | 1  |
4  | Packing | 1   |
5  | Bush   | 1   |         
6  | Screw  | 2   |         

This brochure is general in it's nature and details can change anytime without notice.
“Australian Pipeline Valve produces isolation, control and flow reversal protection products for severe and critical service media in utility, steam, pipelines, oil & gas and process industries. APV valves and pipeline products form the most competitive portfolio in the market.”

Contact us for your local stockist/distributor

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We are continually improving all facets of quality assurance. Full metallurgical and test certificates are always supplied for all pressure retaining parts, we also provide it on all major trim components.

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