PureFlex is a world leading manufacturer of high performance Fluoropolymer and Composite products and technologies. We specialize in the manufacturing of fluid handling and sealing products specifically designed for Chemical, Pharmaceutical and Ultra-Pure related industries.

Since 1994, we have earned a reputation for creating fluid handling and sealing products that are truly different. We create innovations -- Products that serve demanding applications better than before. PureFlex excels in its service, aggressive in its technology, bold in vision, and responsible in its regard for safe and dependable products.

800 series butterfly valve

The 800 series fully lined composite valve is manufactured to be corrosion resistant inside and out in hostile services. The valve has the strength of steel with 1/2 the weight and is 10x more impact resistant than standard FRP. 800 Series valves have the purity required for Ultra-Pure applications and are used for shut-off and throttling of most known corrosive fluids. It can be used for end of the line service and is bubble tight at full rated pressure of 150psi, has triple stem seals and can operate at temperatures of (-)60°F to 250°F. (Consult factory for higher temperature ratings)
The 800 series valve body is manufactured from Durcor®-62™, PureFlex proprietary advanced fiber reinforced composite. Durcor®-62™ reinforcing fibers are long and interlocked, this interlocked reinforcement system transfers loads throughout the fiber matrix, making the 800 series valve body virtually indestructible. It has tensile and compressive strength that rivals steel, along with outstanding impact resistance that is unmatched in industry. The strength of Durcor®-62™ enables the 800 series valve to maintain ANSI face to face dimensions, be direct threaded for lug design and allows it to be installed in any type of piping system without the need for special considerations. Durcor®-62™ excels in temperatures from (-)60°F to 250°F and has only .001” of thermal expansion across its full temperature range.

- **Tensile strength of 50,000psi per ASTM D-638 or 358 Mpa**
- **Notched Izod impact strength of 30 ft. lb/inch per ASTM D-256 or 1760 J/M are achieved.**

Durcor®-62™ vinyl ester backbone provides excellent protection when exposed to aggressive chemicals and hostile atmospheres such as acid sprays, bleach, salt water and high chlorides. The 800 series valve body out-performs ductile iron valves not only in corrosive environments but non corrosive as well. Its lightweight advantage reduces the need for heavier support structures for hanging, eliminates the need for extra equipment and personnel for valve installation and reduces pipe strain once installed. The 800 series valve body is so dependable and maintenance free that we offer the industries first 5 year warranty against failure. Contact PureFlex or your local distributor for details.

The lightest, strongest most chemically resistant valve in the world
1. Composite Durcor®-62™ valve body is lightweight, provides maximum external corrosion protection, tensile and impact resistance.

2. PTFE seat is .125" nominal thickness and is recessed into body, seat is energized by one piece non-wetting elastomer providing bubble tight sealing.

3. One piece PFA lined Ductile iron Disc & Stem provides high Cv value, blow-out protection and has a double "D" shaft drive, can be lined with PFA or UHMWPE.

4. Mounting Flange is ISO 5211 compliant.

5. NPT connections (optional) for purge or leak detection, inert gas pad or sealing lubricant port.

6. PTFE composite bearing (top & bottom) is self-lubricating, reduces friction and is maintenance free.

7. Triple stem seals top and bottom.

8. Bottom heavy hex fasteners eliminates exposure to leaks from overhead equipment, PTFE coated B7 standard. Other materials available.

9. Flanged Wafer or Lug design with composite threads 250ft. pound pull-out strength. Alloy inserts also available.
Ultra High Molecular Weight Polyethylene is a tough abrasion resistant polymer perfectly suited for severe erosive services while providing good chemical resistance. UHMWPE will consistently outperform rubber lined or plastic valves in fluids containing abrasive particles with or without corrosive media present at temperatures of (-)20°F to +210°F.

PureFlex 800 series valves with UHMWPE are 1/2 the weight of metal lined valves and provide outstanding service life in Pulp and Paper processing, mining and metal refining, power plants, pollution abatement and chemical industries.

Typical services include:
- Fly ash
- Lime slurry
- Lime mud
- Green liquor
- White liquor
- Zinc Sulfate slurry
- Iron Ore tailings
- Titanium Dioxide slurry
- Sodium Chloride Brine

PTFE (Polytetrafluoroethylene) and PFA (Perfluoroalkoxy) are fluoropolymers that provide outstanding chemical and temperature resistance from (-)60°F to +250°F. The fluoropolymers non-stick properties aid to eliminate build-up of deposits on valve seat and disc that could possibly affect valve performance. PureFlex 800 series valves lined with PTFE / PFA are unequalled for severe chemical services and will resist the attacks of:
- All Acids
- All Solvents
- All Bleach solutions
- All Caustics
- All Peroxides
- All Phenols
- All Organic Chlorides & Sulfates
- All Inorganic Chlorides & Sulfates

**Disc Options**
- PFA lined Ductile Iron (STD.)
- 316 s.s.
- Hastelloy® C276
- Titanium Gr. C-2
- UHMWPE / 316 s.s.
## Cv Data

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>Full Open Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>112</td>
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<tr>
<td>3&quot;</td>
<td>334</td>
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<tr>
<td>4&quot;</td>
<td>570</td>
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<tr>
<td>10&quot;</td>
<td>5223</td>
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<tr>
<td>12&quot;</td>
<td>7944</td>
</tr>
</tbody>
</table>

Refer to Chart

### Cv at Disc Angle of Rotation

**Percent of Full Cv**

- 20: 0
- 30: 3
- 40: 9.1
- 50: 16.3
- 60: 27.4
- 70: 47
- 80: 74.5
- 90: 100

Refer to chart above

## Sizing Torques

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>Max Differential Pressure PTFE</th>
<th>Max Differential Pressure UHMWPE</th>
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<tbody>
<tr>
<td>2&quot;</td>
<td>275 in.-lbs.</td>
<td>405 in.-lbs.</td>
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<tr>
<td>3&quot;</td>
<td>380 in.-lbs.</td>
<td>463 in.-lbs.</td>
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<tr>
<td>4&quot;</td>
<td>570 in.-lbs.</td>
<td>771 in.-lbs.</td>
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<td>6&quot;</td>
<td>1250 in.-lbs.</td>
<td>3660 in.-lbs.</td>
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<td>8&quot;</td>
<td>1660 in.-lbs.</td>
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<td>3600 in.-lbs.</td>
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<td>12&quot;</td>
<td>4600 in.-lbs.</td>
<td>6102 in.-lbs.</td>
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</table>

## Disc Rotation (Degrees)

### Pressure / Temperature

**PTFE**

- 5°F to 150°F (150°F)

**UHMWPE**

- 5°F to 150°F (150°F)

800 VALVE DATA

**Sizes:** 2" to 12" Flanged Wafer & Lug Body

(Larger sizes available - consult factory)

**Pressure:** Full Vacuum to 150 psi

**Temperature Rating:** (-60°F to 250°F)

**Flow:** Bi-directional

**Conformance:** Conforms to all applicable standards API 609, DIN 3202, ISO 5752, and BS EN593

**Flange Adaptability:** ANSI B16.5 Class 150, ANSI Class B16.1 Class 125. Other flange drillings are available (consult factory for higher temperature ratings)

**800 Valve Data**
800 Series Valve Parts List

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>STANDARD MATERIAL</th>
<th>QTY.</th>
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<td>Upper Body</td>
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<td>2</td>
<td>Lower Body</td>
<td>Durco®-62™</td>
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<td>3</td>
<td>Atmospheric Seal</td>
<td>Viton (FKM)</td>
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<td>4</td>
<td>Socket Head Cap Screw</td>
<td>Gr. B7 ASTM A193-PTFE Coated</td>
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<td>5</td>
<td>ISO Mounting Flange</td>
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<tr>
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<td>Seat Energizer</td>
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<td>Seat</td>
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<td>Disc</td>
<td>FFA Lined Ductile Iron</td>
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<td>Hex Head Cap Screw</td>
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<td>13</td>
<td>Stem Extension (4&quot; &amp; 6&quot; Sizes Only)</td>
<td>CF8M Stainless Steel</td>
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Valve Options

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<td>UHMWPE</td>
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<td>TFM NXT PTFE</td>
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<td>CF8M Stainless Steel</td>
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4" & 6" sizes only
# Series 800 Butterfly Valves

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<td>4.021</td>
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</tbody>
</table>

**Note:** Lined piping which exceeds liner thickness specification of ASTM F1545 may require spacers to avoid disc swing.

**10** & **12** valve size only, the operator mounting holes are offset 15°
TRULY VISIONARY

INNOVATION

TASK-LINE® - GROUNDING PADDLES

TASK-LINE® - LINE BLOCKERS

TASK-LINE® - GASKETS
HOW TO ORDER & SPECIFY

EXAMPLE:
6" WAVER STYLE VALVE WITH PTFE SEAT, SILICONE ENERGIZER, PFA LINED DISC, B7 PTFE COATED BOLTS, BARE STEM VALVE

PART NUMBER: 80006WO11T01

STEP 1

800 = BUTTERFLY VALVE

STEP 2

DETERMINE VALVE SIZE

02 = 2" (50MM)
03 = 3" (80MM)
04 = 4" (100MM)
06 = 6" (150MM)
08 = 8" (200MM)
10 = 10" (250MM)
12 = 12" (300MM)

STEP 3

DETERMINE VALVE BODY STYLE

WO = FLANGED WAFFER (STD.)
LC = LUG COMPOSITE THREADS

STEP 4

DETERMINE SEAT (WETTED) AND ENERGIZER (NON-WETTED) MATERIAL

1 = PTFE / SILICONE (STD.)
2 = PTFE / VITON
3 = UHMWPE / SILICONE
4 = UHMWPE / VITON
5 = TFM / SILICONE
6 = TFM / VITON

STEP 5

DETERMINE DISC MATERIAL

1 = PFA LINED DUCTILE IRON (STD.)
2 = 316 STAINLESS
3 = HASTELLOY C276
4 = UHMWPE LINED STAINLESS
5 = TITANIUM GRADE C-2
Z = SPECIAL

STEP 6

DETERMINE BODY BOLT MATERIAL

T = GRADE B7 PTFE COATED (STD.)
P = GRADE B7 ZINC PLATED
S = GRADE B8 STAINLESS
A = ALLOY 20
H = HASTELLOY C276
Z = SPECIAL

STEP 7

DETERMINE VALVE OPERATOR

01 = BARE STEM (STD.)
02 = 10 POSITION DI WRENCH
03 = 10 POSITION S.S. WRENCH
04 = WORM GEAR CAST IRON
05 = AIR ACTUATED
06 = ELECTRIC ACTUATED
ZZ = SPECIAL

1. Scope

1.1 The following product specification applies to lined butterfly valves for chemical and/or abrasive service. Valve shall be rated for 150 psi continuous service and have temperature rating of (-80°F to +250°F). Valves must be bubble tight in the closed position.

1.2 It is recommended that you check chemical compatibility with your application.

2. Valve Body

2.1 Valve body shall be manufactured from vinyl ester and fiberglass composite. The valve body shall be full-face flange water or lug style for end of line service. Valve body shall be capable of direct threading for lug style and threads shall have nominal pullout strength of 2500 lbs. as per ASTM D-256.

2.2 Valve body composite shall have a nominal tensile strength of 50,000 psi as per ASTM D-256.

2.3 Valve body composite shall have a nominal notch test impact strength of 30 ft. lb. per inch of 1760 J/M.

2.4 Valve body shall be equipped with operator mounting flange that is compliant to ISO 5211 and flange fasteners shall not be pressure retaining.

3. Valve Seat Energizer

3.1 Valve seat shall be molded and machined PTFE or UHMWPE depending on service conditions with a nominal wall thickness of .125 capable of full vacuum at maximum temperature rating.

3.2 Valve sealing face of seat shall be recessed into valve body to eliminate liner cold flow (creep). Wetted elastomters shall not be allowed.

3.3 Valve seat non-wetted energizer shall be either Silicone or Viton and shall be one piece permanently attached to valve seat.

4. Valve disc and stem

4.1 Disc and stem shall be one-piece blowout resistant type and stem shall be double "D" machined where operator is attached. Two piece stem and disc and exposed fasteners on disc shall not be allowed.

4.2 Disc shall be lined or unlined. Lined discs shall be encapsulated with PFA or UHMWPE and have a nominal liner thickness of .125. Unlined discs shall be stainless steel, Hastelloy C276 or Titanium. Disc material shall be determined by service conditions.

4.3 Stem shall have machining backseat to both ends of disc to provide torquous no leak path with valve seat.

4.4 Valve stem shall have top and bottom PTFE composite stem bearings.

5. Valve triple stem seals

5.1 Valve shall have matching radii molded seat and disc (ball and socket) with stem seal.

5.2 Valve shall have tight compression around stem maintained by resilient energizer against valve seat.

5.3 Valve shall have live loaded stainless steel tapered rings on both ends of disc that compress energized valve seat onto locking bars on stem to provide sealing.

6. Valve fasteners

6.1 Valve body fasteners shall be hex head cap screws.

6.2 Fasteners shall be PTFE coated B7 A193 standard material. Optional materials can be B7 zinc plated. B8 stainless steel, alloy 20 or Hastelloy.

7. Valve testing

7.1 Valve seat to exceed testing criteria of API-686. Valve shall be hydrostatically tested at 165 psi and maintain bubble tight when the disc is in the closed position and valve stems tested to 225 psi. All valves shall be tagged per MSS-SP-25 for identification and shall have a unique serial number.

8. Valve manufacturer

8.1 Valve shall be manufactured by PureFlex, Inc. 4855 Broadmoor Ave. Kentwood, MI 49512 Ph: 616-554-1100 Fax: 616-554-3633 www.pureflex.com