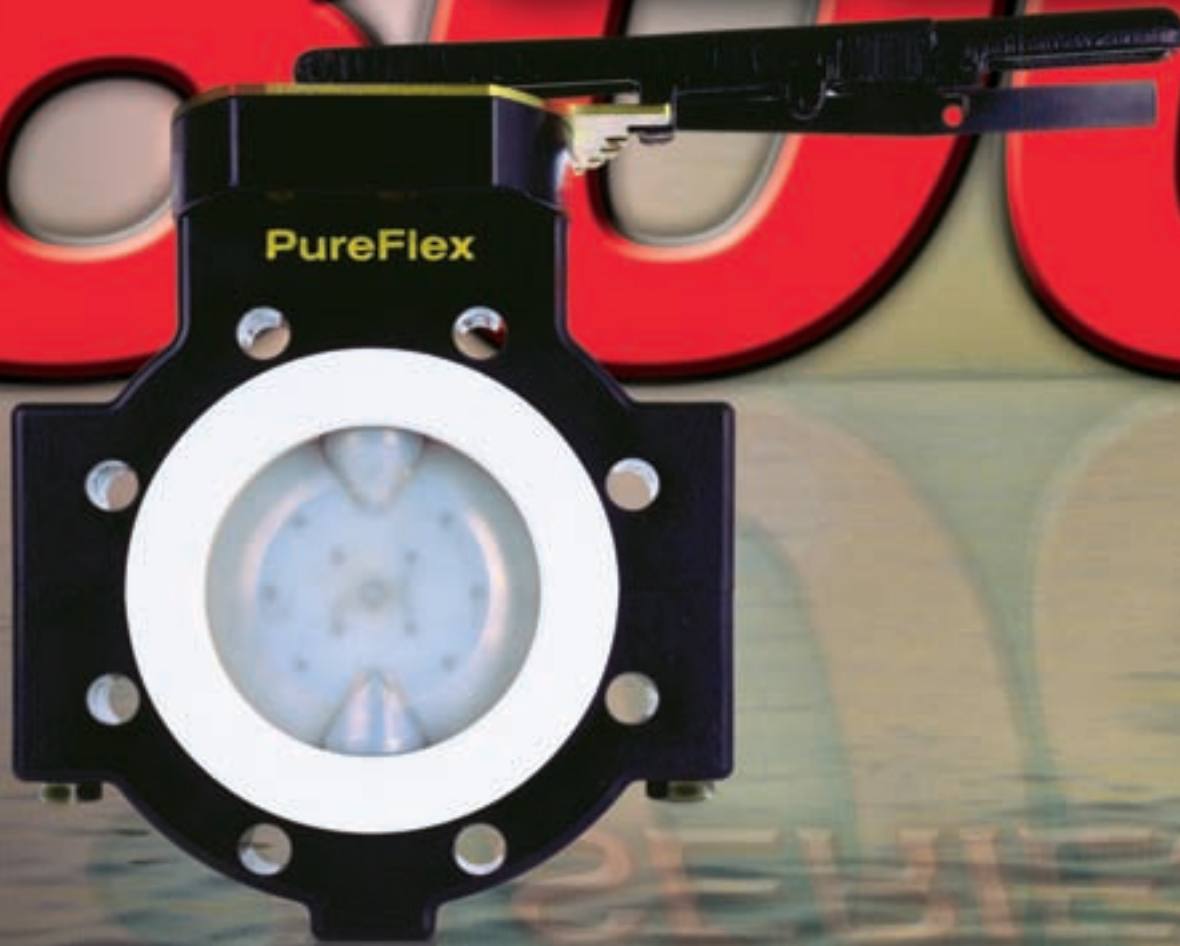


# 8800 SERIES



PureFlex

**PUREFLEX**  
**COMPOSITE GROUP**

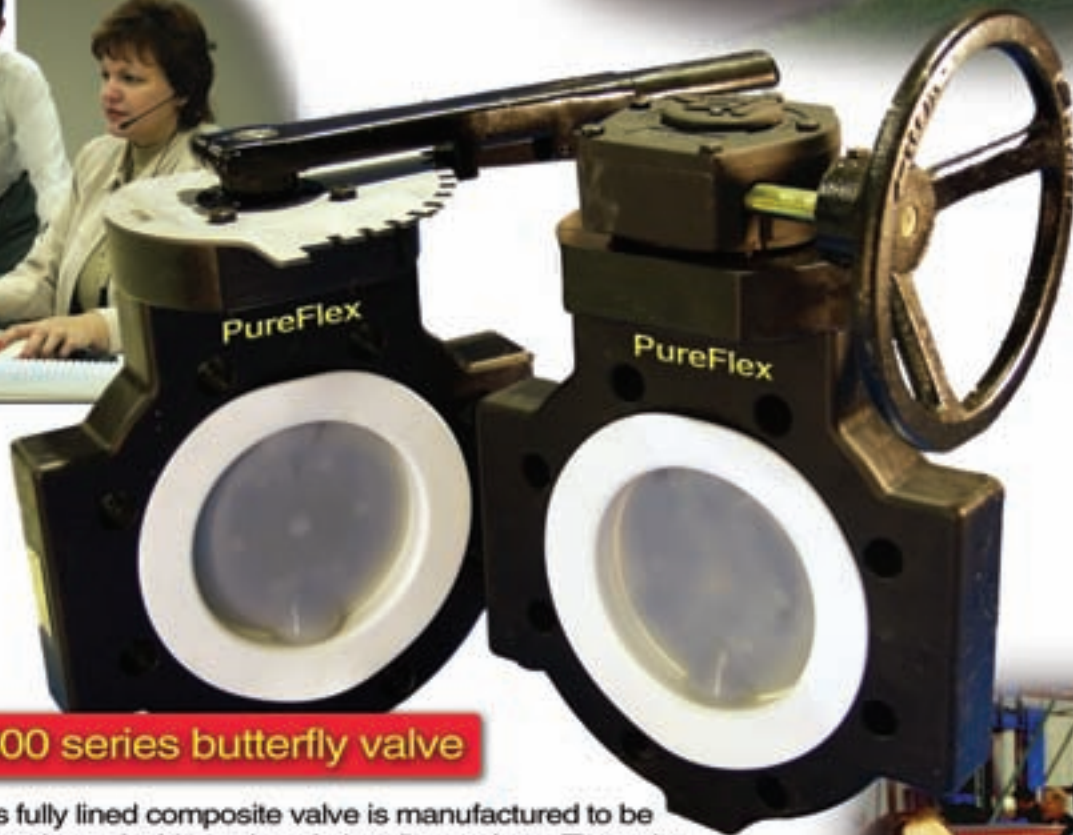
PUREFLEX



# PUREFLEX

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

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. The 800 series is used for shut-off and throttling of most known corrosive fluids, and has the purity required for ultra-pure applications. 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 between (-)60°F to 250°F.  
(Consult Factory for higher temperature ratings)





# COMPOSITE VALVE BODY

## DURCOR-62™

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 strengths that rival steel along with outstanding impact resistance that is unmatched in the 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.

### Tensile strength comparison

Steel 60,000psi

Durcor-62™ 50,000psi

FRP 12,000psi



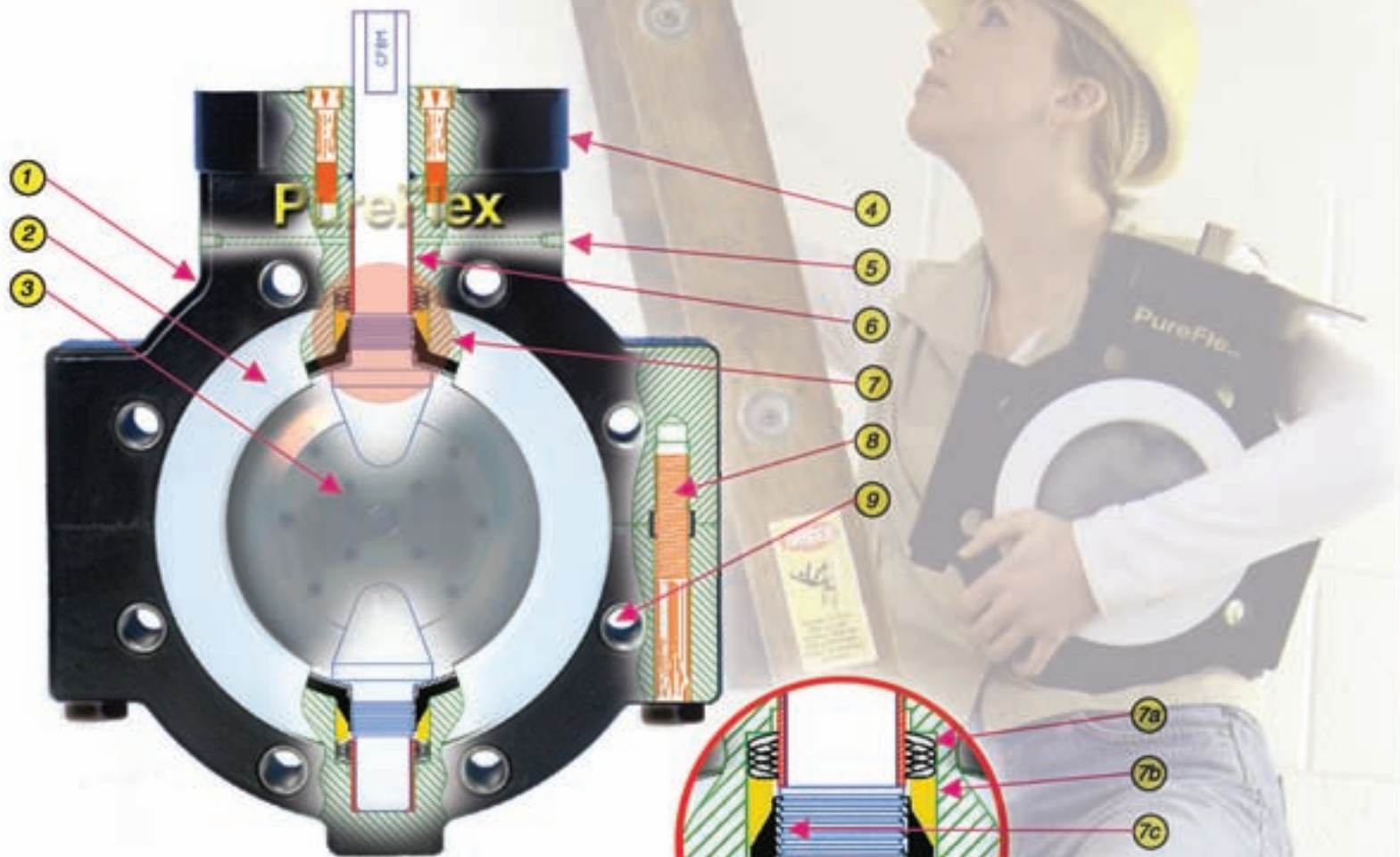
Durcor-62™ vinyl ester resin backbone provides excellent protection when exposed to aggressive chemicals and hostile atmospheres such as acid sprays, bleach, salt water and high chlorides. The 800 series valve body out performs ductile iron valves not only in corrosive environments but non-corrosive 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 strongest, lightest, most chemically resistant valve in the world



# 800 VALVE FEATURES



- 1 Composite Durcor-62™ valve body is light weight, 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-wetted elastomer providing bubble tight sealing
- 3 One piece 316 s.s. Disc & Stem provides high Cv value, blow-out protection and has double "D" shaft drive, can be lined with PFA / UHMWPE or unlined
- 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
- 7a 17-7ph s.s. wave springs keep preload on stem seal and taper ring
- 7b 304 s.s. tapered ring compresses energized PTFE liner onto locking barbs, creates tortuous no leak path
- 7c Locking barbs molded or machined onto disc stem
- 7d Stem seal is created through an interference fit as the stem is passed through the body liner
- 7e Primary seal is achieved at the disc hub and liner (ball & socket) through preloaded force

- 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



# LINERS & DISCS



**UHMWPE LINED**

## MAXIMUM ABRASION RESISTANCE AGAINST EROSIIVE SERVICES

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

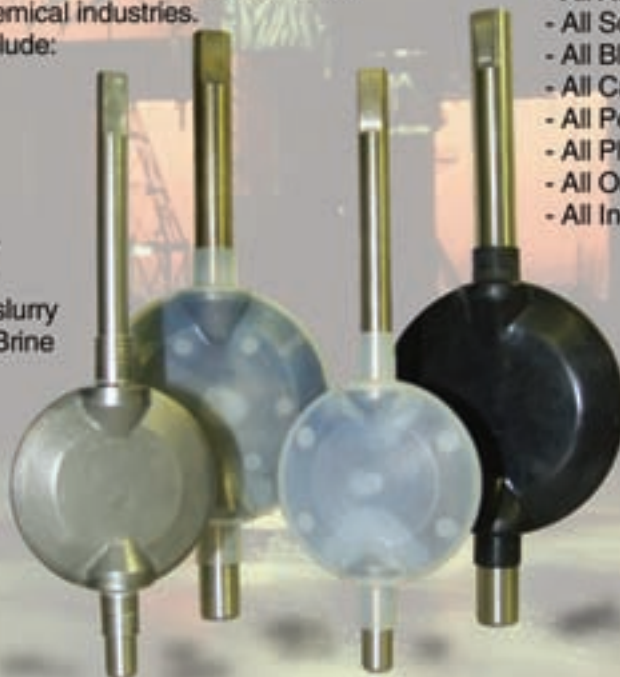


**PTFE / PFA LINED**

## MAXIMUM CHEMICAL RESISTANCE AGAINST CORROSIVE SERVICES

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 / 316 s.s. (std.)
- 316 s.s.
- Hastelloy® C276
- Titanium Gr. C-2
- UHMWPE / 316 s.s.



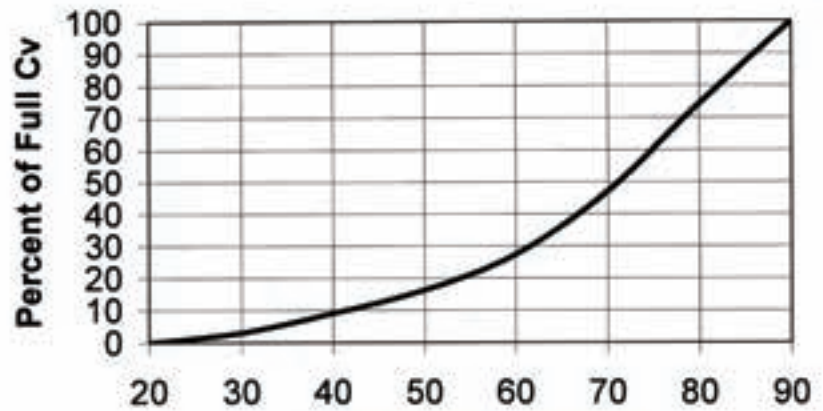
# TECHNICAL DATA

## Cv Data

Valve Size	Full Open Cv
2"	112
3"	334
4"	570
6"	1415
8"	3110
10"	5223
12"	7944
14"	9766
16"	13150

refer to chart above

## Cv at Disc Angle of Rotation



## Sizing Torques

Valve Size	Max. Differential Pressure	
	PTFE	UHMWPE
2"	275 in.- lbs.	405 in.- lbs.
3"	325 in.- lbs.	463 in.- lbs.
4"	570 in.- lbs.	771 in.- lbs.
6"	1250 in.- lbs.	3660 in.- lbs.
8"	1660 in.- lbs.	4116 in.- lbs.
10"	3270 in.- lbs.	6915 in.- lbs.
12"	4175 in.- lbs.	8102 in.- lbs.
14"	7885 in.- lbs.	13956 in.- lbs.
16"	10,350 in.- lbs.	21863 in.- lbs.

## Disc Rotation (Degrees)

Disc Position (degrees)	Percent of Total 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

## 800 VALVE DATA

**SIZES:** 2" TO 16" FLANGED WAFER & LUG BODY  
LARGER SIZES AVAILABLE - CONSULT FACTORY

**PRESSURE:** FULL VACUUM TO 150PSI

**TEMPERATURE RATING:** (-)60°F TO 250°F

**FLOW:** BI-DIRECTIONAL

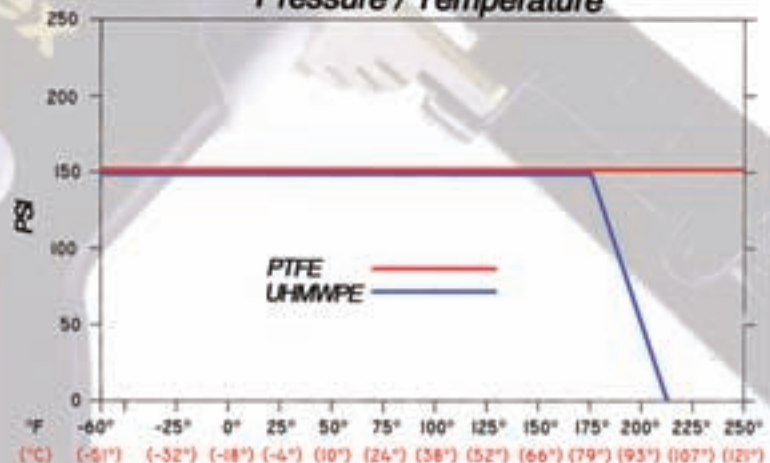
**CONFORMANCE:** CONFORMS TO ALL APPLICABLE STANDARDS API 609, DIN 3202 ISO 5752, AND BS EN593

**FLANGE ADAPTABILITY:** ANSI B16.5 CLASS 150  
ANSI CLASS B16.1 CLASS 125. OTHER FLANGE DRILLINGS ARE AVAILABLE

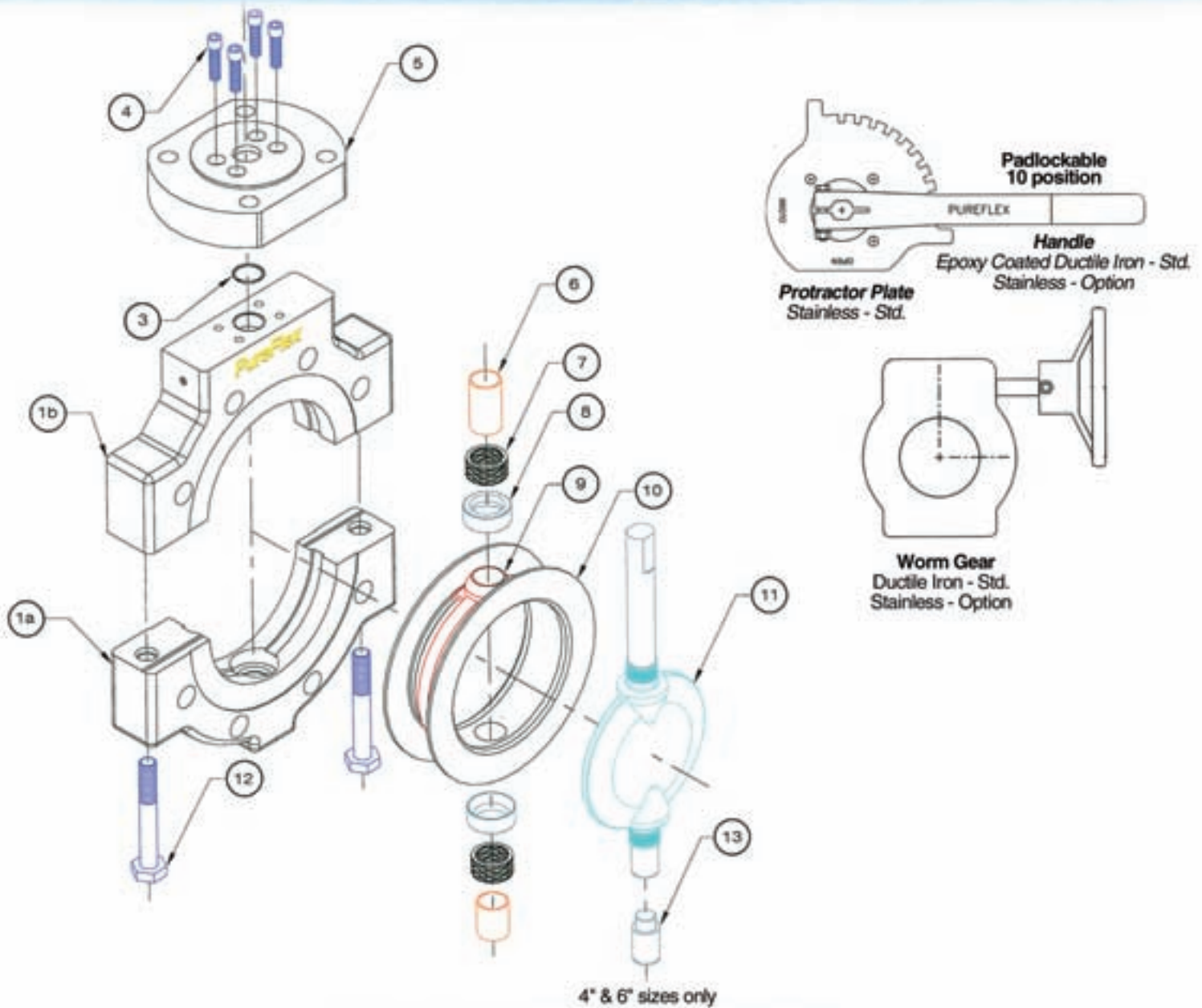
(CONSULT FACTORY FOR HIGHER TEMPERATURE RATINGS)

**\* Consult factory for sizes above 16".**

## Pressure / Temperature



# MATERIALS



## 800 series valve parts list

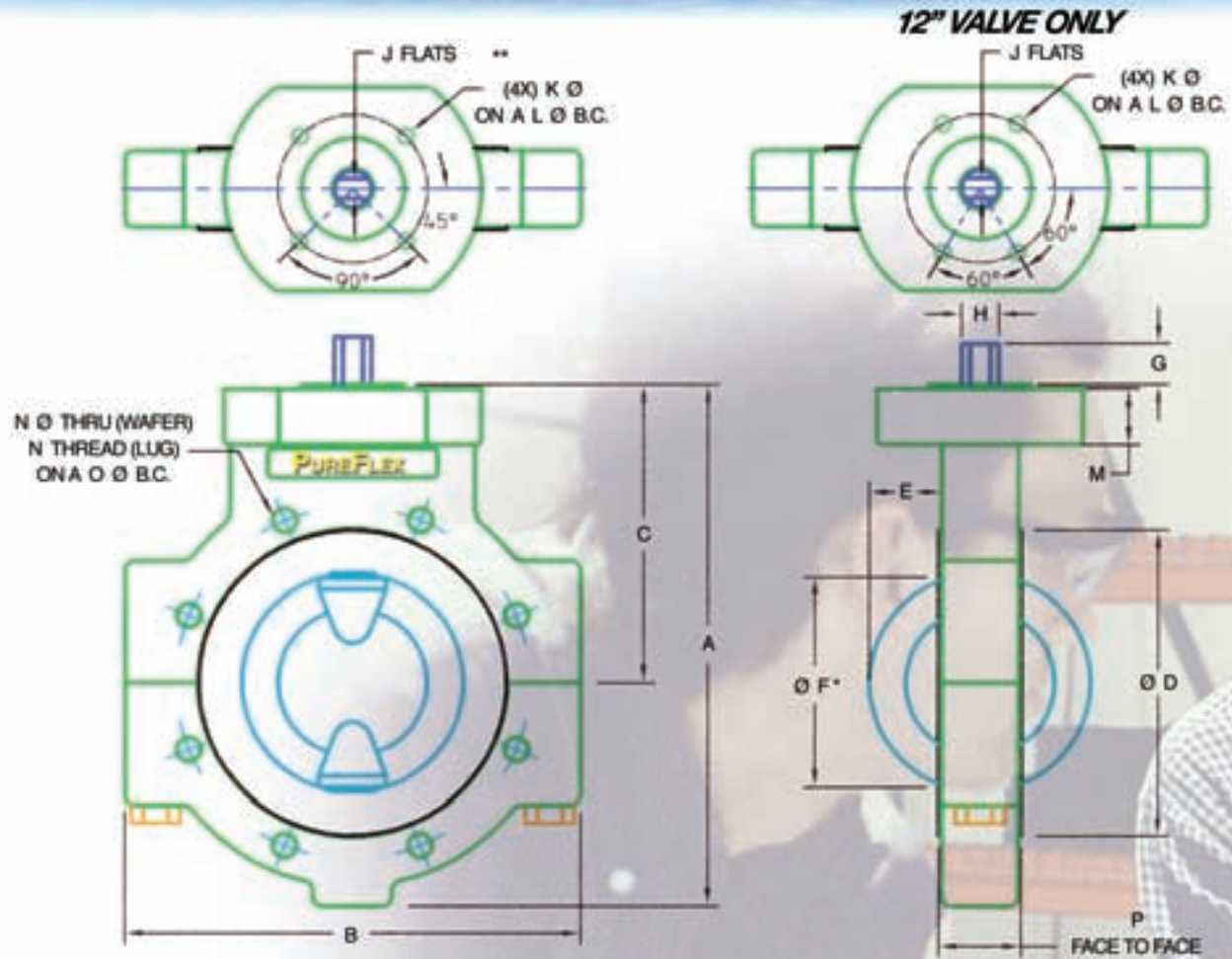
ITEM	DESCRIPTION	STANDARD MATERIAL	QTY.
1a & 1b	Body	Durcor-62™	1
2	Deleted		
3	Atmospheric Seal	Viton (FKM)	1
4	Socket Head Cap Screw	Gr. B7 ASTM A193-PTFE Coated	4
5	ISO Mounting Flange	Durcor-62™	1
6	Bearing	PTFE-Composite	2
7	Wave Spring	17-7PH Stainless Steel	2
8	Taper Ring	304 Stainless Steel	2
9	Seat Energizer	Silicone	1
10	Seat	PTFE	1
11	Disc	PFA \ CF8M Stainless Steel	1
12	Hex Head Cap Screw	Gr. B7 ASTM A193-PTFE Coated	2
13	Stem Extension ( 4" & 6" Sizes Only )	CF8M Stainless Steel	1

## Valve Options

ITEM	OPTIONAL MATERIAL
4	Gr. B840 ASTM A193 Stainless Steel Hastelloy C276 ASTM B574
9	Viton
10	UHMWPE TFM \ NXT PTFE UHMWPE \ Stainless Steel
11	CF8M Stainless Steel CW6M (Hastelloy C276) ASTM A494 Titanium Gr. C-2 ASTM B367
12	Gr. B840 ASTM A193 Stainless Steel Hastelloy C276 ASTM B574
13	CW6M (Hastelloy C276) ASTM A494 Titanium Gr. C-2 ASTM B367



# 800 SERIES



Series 800 Butterfly Valves

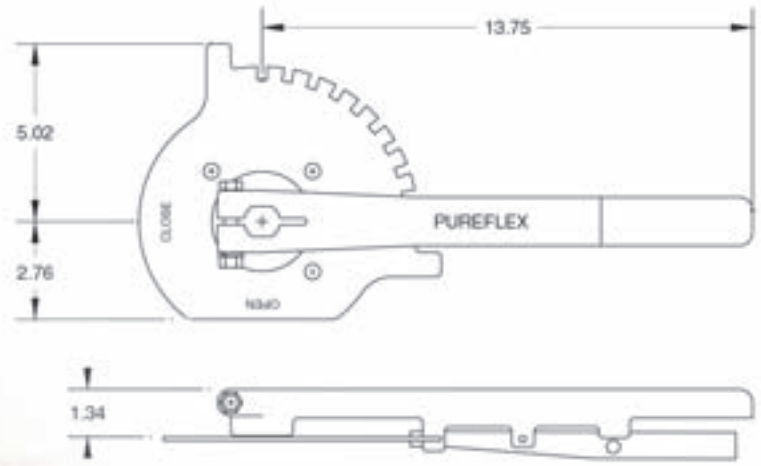
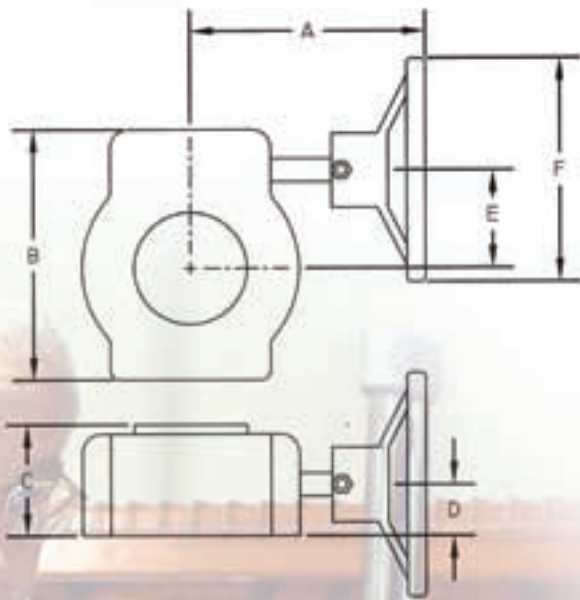
SIZE	A	B	C	D	E	F*	SHAFT			ISO FLANGE			WAFER	LUG	O	P	W WEIGHT
							G	H	J	K	L	M					
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	kg
2 (50.8)	8.781 (223)	8.250 (209.6)	5.531 (140.5)	3.609 (91.7)	0.469 (11.9)	2.063 (52.4)	1.313 (33.3)	0.625 (15.9)	0.439 (11.2)	0.438 (11.1)	4.021 (102.1)	0.500 (12.7)	0.750 (19.1)	1-11 (152.7)	4.750 (120.7)	1.688 (42.9)	6 (2.7)
3 (76.2)	10.063 (255.6)	9 (228.6)	6.313 (160.3)	5 (127)	0.689 (17.5)	2.594 (65.9)	1.313 (33.3)	0.625 (15.9)	0.439 (11.2)	0.438 (11.1)	4.021 (102.1)	0.875 (22.2)	0.750 (19.1)	1-11 (152.4)	6 (152.4)	1.813 (46)	9 (4.1)
4 (101.6)	11.313 (287.3)	10.250 (260.4)	6.813 (173)	6 (152.4)	1 (25.4)	3.469 (88.1)	1.313 (33.3)	0.625 (15.9)	0.439 (11.2)	0.438 (11.1)	4.021 (102.1)	0.875 (22.2)	0.750 (19.1)	1-11 (152.4)	7.500 (190.5)	2.063 (52.4)	14 (6.3)
6 (152.4)	14.094 (358)	12.219 (310.4)	8.063 (204.8)	8.250 (209.8)	1.875 (47.6)	5.500 (139.7)	1.313 (33.3)	1 (25.4)	0.836 (21.2)	0.438 (11.1)	4.021 (102.1)	1.500 (38.1)	0.875 (22.2)	1-10 (152.4)	9.500 (241.3)	2.219 (56.4)	25 (11.3)
8 (203.2)	17.188 (436.6)	15.375 (390.5)	8.438 (214.3)	10.250 (260.4)	2.689 (68.3)	7.375 (187.3)	1.313 (33.3)	1 (25.4)	0.836 (21.2)	0.438 (11.1)	4.021 (102.1)	1.500 (38.1)	0.875 (22.2)	1-10 (152.4)	11.750 (298.5)	2.375 (60.3)	34 (15.3)
10 (254)	21.094 (535.8)	18.813 (477.8)	12.313 (312.7)	12.250 (311.2)	3.625 (92.1)	9.563 (242.9)	1.750 (44.5)	1.375 (34.9)	1.000 (25.4)	0.563 (14.3)	4.921 (125)	1.500 (38.1)	1 (25.4)	1-9 (152.4)	14.250 (362)	2.668 (68.3)	52 (23.4)
12 (304.8)	23.750 (603.3)	21 (533.4)	13.313 (338.1)	14.375 (365.1)	4.438 (112.7)	11.563 (293.7)	2.125 (54)	1.375 (34.9)	1.000 (25.4)	0.563 (14.3)	4.921 (125)	1.500 (38.1)	1 (25.4)	1-9 (152.4)	17 (431.8)	3.094 (78.6)	65 (29.3)
14 (355.6)	Consult Factory		Consult Factory		Consult Factory		Consult Factory		Consult Factory		Consult Factory		Consult Factory				
16 (406.4)	30 (762)	26.547 (674.1)	15.813 (401.8)	15.500 (470)	5.688 (144.4)	14.750 (374.6)	2 (50.8)	2 (50.8)	1.560 (39.6)	0.406 (10.3)	5.625 (142.9)	1.625 (41.3)	1.125 (28.6)	1-8 (152.4)	21.250 (540)	4 (101.6)	185 (83.9)

NOTE:

- \* Lined piping which exceeds the liner thickness specification of ASTM F1545 may require spacers to avoid disc swing.
- \*\*12" valve size only, the operator mounting holes are offset 15° on ISO 5211 F12 bolt circle (See Above.)
- \*\*\*16" operating mounting flange none ISO compliant.



# DIMENSIONS & WEIGHTS



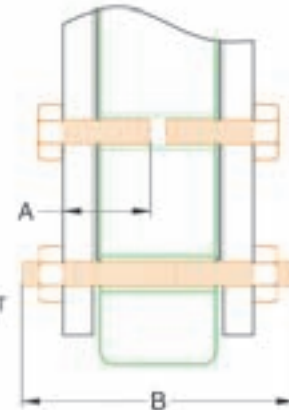
Wrench Assembly 2" - 6" Sizes

Wafer and Lug Valves with Gear						
SIZE	A	B	C	D	E	F
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)
2 - 4 (50.8) (101.6)	6.250 (158.7)	5 (127)	2.578 (65.5)	1.109 (28.2)	2.063 (52.3)	6 (152.4)
6 - 8 (152.4) (203.2)	6.750 (171.4)	6 (127)	2.578 (65.5)	1.109 (28.2)	2.063 (52.3)	8 (203.2)
10 - 12 (254) (304.8)	7.250 (184.1)	6.719 (170.7)	2.984 (75.7)	1.375 (34.8)	2.500 (63.5)	12 (304.8)
14 - 16 (355.6) (406.4)	Consult Factory					

## FASTENER INFORMATION

CLASS 150#  
ANSI B16.5  
FLANGE THICKNESS

1/8" THICK TASK-LINE® GASKET  
OR EQUIVALENT



Fasteners for Installation of Lug Bodies									
Valve Size	2	3	4	6	8	10	12	14	16
Number of Fasteners	8	8	16	16	16	24	24	24	32
Thread Call-out	5/8 - 11 UNC			3/4 - 10 UNC		7/8 - 9 UNC		1 - 8 UNC	
"A" Length of Fastener	1-1/2	1-3/4	1-3/4	2	2-1/4	2-1/2	2-1/2	2-3/4	3

Fasteners for Installation of Wafer Bodies									
Valve Size	2	3	4	6	8	10	12	14	16
Number of Fasteners	4	4	8	8	8	12	12	12	16
Thread Call-out	5/8 - 11 UNC			3/4 - 10 UNC		7/8 - 9 UNC		1 - 8 UNC	
"B" Length of Fastener	5	5-1/2	5-3/4	6-1/2	6-3/4	7-3/4	8-1/4	8-3/4	9-3/4





840 SERIES - HIGH PURITY



800 LITE - LIGHT DUTY - PTFE



860 SERIES - RESILIENT SEATED

# TRULY VISIONARY



# INNOVATION

TASK-LINE® - GROUNDING PADDLES



TASK-LINE® - LINE BLOCKERS



TASK-LINE® - GASKETS







400 SERIES - COMPOSITE BALL VALVE



PURESITE™ - UNBREAKABLE FEP



PTFE / COMPOSITE FLANGED EXPANSION JOINTS



CL2™ CHLORINE HOSE

100% COMPLIANT WITH CHLORINE INSTITUTE

PTFE /FEP/PFA HOSE & FITTINGS



HEATED HOSES



PLATINUM CURED SILICONE



# HOW TO ORDER & SPECIFY

## EXAMPLE:

6" WAFER STYLE VALVE WITH PTFE SEAT, SILICONE ENERGIZER, PFA LINED DISC, B7 PTFE COATED BOLTS, BARE STEM VALVE  
PART NUMBER: **80006WO11T01**



STEP 1    STEP 2    STEP 3    STEP 4    STEP 5    STEP 6    STEP 7  
**800 - 06 - WO - 1 - 1 - T - 01**

- |  |   |  |   |
|--|---|--|---|
| <p><b>STEP 1</b><br/><b>800</b> = BUTTERFLY VALVE</p> <p><b>STEP 2</b><br/><b>DETERMINE VALVE SIZE</b></p> <p>02 = 2" (50mm)<br/>03 = 3" (80mm)<br/>04 = 4" (100mm)<br/><b>06 = 6" (150mm)</b><br/>08 = 8" (200mm)<br/>10 = 10" (250mm)<br/>12 = 12" (300mm)<br/>14 = 14" (350mm)<br/>16 = 16" (400mm)</p> | <p><b>STEP 3</b><br/><b>DETERMINE VALVE BODY STYLE</b></p> <p><b>WO</b> = FLANGED WAFER (STD.)<br/>LC = LUG COMPOSITE THREADS</p> <p><b>STEP 4</b><br/><b>DETERMINE SEAT (WETTED) AND ENERGIZER (NON-WETTED) MATERIAL</b></p> <p><b>1</b> = PTFE / SILICONE (STD.)<br/>2 = PTFE / VITON<br/>3 = UHMWPE / SILICONE<br/>4 = UHMWPE / VITON<br/>5 = TFM / SILICONE<br/>6 = TFM / VITON</p> | <p><b>STEP 5</b><br/><b>DETERMINE DISC MATERIAL</b></p> <p><b>1</b> = PFA LINED STAINLESS (STD.)<br/>2 = 316 STAINLESS<br/>3 = HASTELLOY C276<br/>4 = UHMWPE LINED STAINLESS<br/>5 = TITANIUM GRADE C-2</p> <p><b>STEP 6</b><br/><b>DETERMINE BODY BOLT MATERIAL</b></p> <p><b>T</b> = GRADE B7 PTFE COATED (STD.)<br/><b>P</b> = GRADE B7 ZINC PLATED<br/><b>S</b> = GRADE B8M STAINLESS<br/><b>A</b> = ALLOY 20<br/><b>H</b> = HASTELLOY C276<br/><b>Z</b> = SPECIAL</p> | <p><b>STEP 7</b><br/><b>DETERMINE VALVE OPERATOR</b></p> <p><b>01</b> = BARE STEM (STD.)<br/><b>02</b> = 10 POSITION DI WRENCH<br/><b>S2</b> = 10 POSITION S.S. WRENCH<br/><b>03</b> = WORM GEAR CAST IRON<br/><b>S3</b> = WORM GEAR STAINLESS<br/><b>04</b> = PADLOCKING GEAR CAST IRON<br/><b>S4</b> = PADLOCKING GEAR STAINLESS<br/><b>05</b> = AIR ACTUATED<br/><b>06</b> = ELECTRIC ACTUATED<br/><b>ZZ</b> = SPECIAL</p> |
|--|---|--|---|

## 1. Scope

- 1.1 The following product specification applies to lined butterfly valves for chemical and/or abrasive service. Valve shall be rated for 150psi continuous service and have temperature rating of (-60°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 material selection.

## 2. Valve Body

- 2.1 Valve body shall be manufactured from vinyl ester and Fiberglass composite. The valve body shall be full-face flange wafer or lug style for end of the line service. Valve body shall be capable of direct threading for lug style and threads shall have nominal pullout strength of 2500 lbs.
- 2.2 Valve body composite shall have a nominal tensile strength of 50,000psi as per ASTM D-256
- 2.3 Valve body composite shall have a nominal notched izod impact strength of 30ft lb. per inch or 1760 J/M
- 2.4 Valve shall be equipped with operator mounting flange that is compliant to ISO 5211 and flange fasteners shall not be pressure retaining

## 3. Valve seat and 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 elastomers 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 have stainless steel core 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 machined locking barbs at both ends of disc to provide torturous 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)
  - 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 barbs on stem to provide sealing.
  - 5.4 Valve shall have Viton atmospheric seal
- ## 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, B8M stainless steel, Alloy 20 or Hastelloy C276.
- ## 7. Valve testing
- 7.1 Valve seat to exceed testing criteria of MSS-SP67. Valve shall be tested with 150psi nitrogen and maintain bubble tight when the disc is in the closed position and valve stems tested to 225psi. All valves shall be tagged per MSS SP25 for identification and shall have a unique serial number.
- ## 8. Valve manufacturer
- 8.1 Valve shall be manufactured by PureFlex, Inc. 4617 East Paris Ave., Kentwood, MI. 49512 phone 616-554-1100, fax 616-554-3633 [www.pureflex.com](http://www.pureflex.com)

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