

FluoroSeal



## HP BUTTERFLY VALVES

ANSI/ASME/DIN/PED  
CLASS150/300  
PN10/PN16/PN25  
LUG, WAFER & DOUBLE  
FLANGE TYPE



FluoroSeal Class 150, HP Butterfly Valve  
Wafer type with Pneumatic Actuator

### LONGEVITY AND PERFORMANCE IN ONE

FluoroSeal® High Performance Butterfly Valves offer outstanding performance in a wide variety of applications in chemical processing, refining, pulp and paper, ethanol, gas separation, desalination, mining, utility, and many other industries. Because of their cost effective, yet robust design FluoroSeal High Performance Butterfly Valves often out-perform other valves by offering long term positive bi-directional shut-off in both control as well as on-off applications.

### EXCELLENT CHOICE FOR CONTROL AND ON-OFF APPLICATIONS

Because of their optimized disc profile FluoroSeal High Performance Butterfly Valves (HPBV) offer precise flow control characteristics over the full range of valve rotation. Manual valve control is assured through the use of a multi-position lockable positioning plate which is standard for all lever operated valves. FluoroSeal HPBV incorporate a rugged mounting pad which allows for ease of automation utilizing pneumatic, electric, and hydraulic actuators as well as a variety of accessories including solenoid valves, limit switches, positioners, and speed control devices. Factory automation with FluoroSeal's own pneumatic rack and pinion actuator assures single source responsibility and guarantees optimum performance in demanding flow control and on-off applications.

### FluoroSeal® High Performance Butterfly Valves offer increased value by incorporating advanced design features

- **DOUBLE OFFSET DESIGN**

FluoroSeal's HPBV design includes a double-offset shaft and eccentric disc. When the valve is opened the disc lifts completely off of the seat with a cam like action and eliminates seat wear and seat deformation at the top and bottom shaft areas. Due to the double-offset design FluoroSeal High Performance Butterfly Valves outperform traditional butterfly valves in terms of both sealing capabilities and service life. Because the disc doesn't contact the seat when the valve is opened operating torque is reduced resulting in lower automation cost. When the valve is closed the disc cams into the seat creating a bubble tight bi-directional seal.

### • BODY CONFIGURATION

FluoroSeal High Performance Butterfly Valves are available as standard in ASME Class 150 and Class 300 wafer or lug style designs. Optional double flanged valves are available upon request. Both lug style and double flanged valves are fully rated for dead end service installations. In addition all FluoroSeal High Performance Butterfly Valves include an integrally cast internal over-travel stop to prevent disc and seat damage.

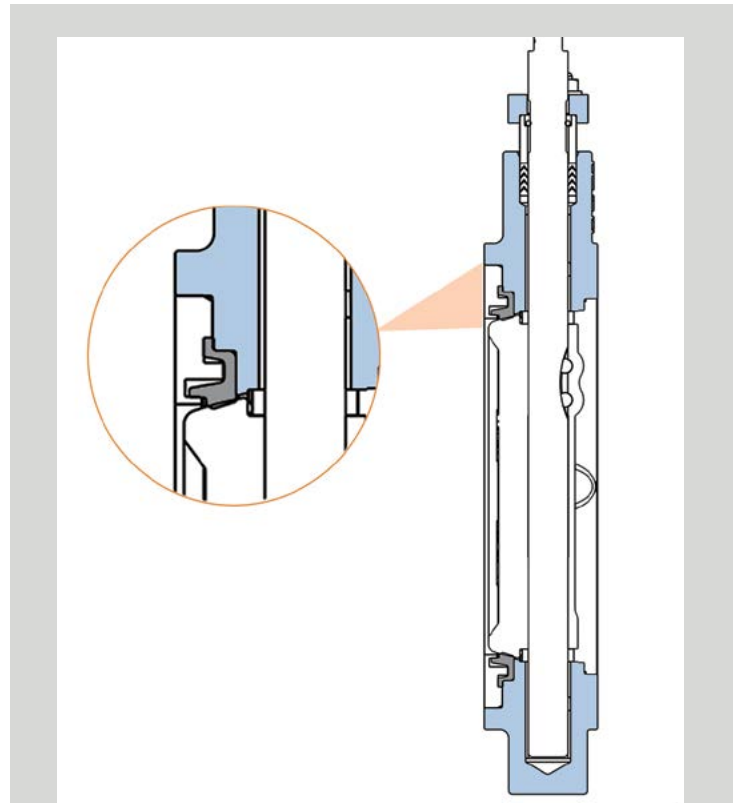
### • SEAT

The flexible polymeric GF2P seat is a simple yet effective design - there are no springs, membranes, or o-rings to fail which can compromise long term bi-directional shut-off. GF2P is a chemically inert molecularly-modified ptfе with improved thermo-mechanical properties, improved cold flow resistance, and increased toughness which work together to increase temperature capability and extend the valve service life. FluoroSeal is the only High Performance Butterfly Manufacturer to offer this proprietary, upgraded seat material as a standard. FluoroSeal offers a variety of optional seat materials for difficult and demanding applications.

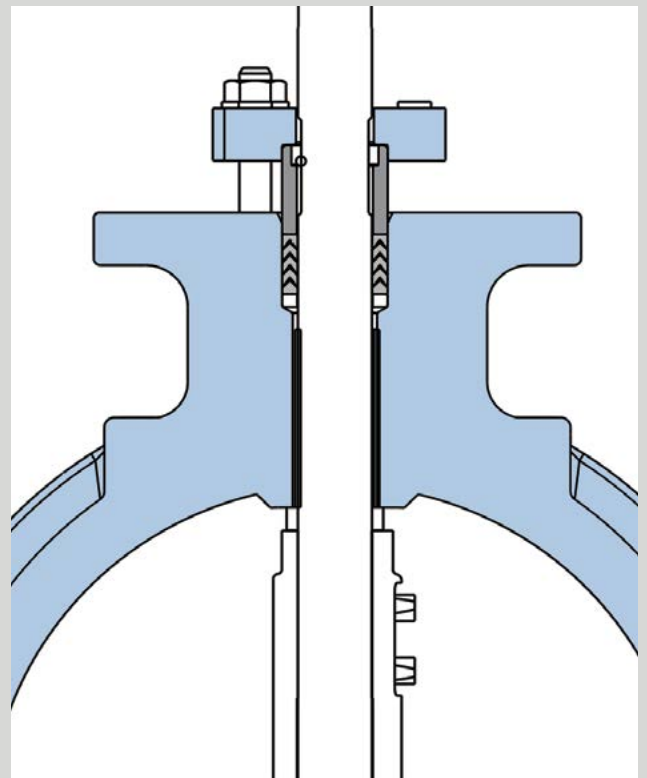
- Reinforced PTFE (RPTFE) – glass fiber reinforced PTFE for additional strength and rigidity and reduced cold flow.
- Hi-Temp – specially formulated GF2P with the addition of a proprietary carbon based filler which adds stability and allows the seat to be used in applications with continuous temperatures up to 600°F (316°C). In addition to its improved temperature capabilities the Hi-Temp seat also offers improved abrasion / erosion resistance, and excellent performance in saturated steam applications up to Class 300.
- Ultra High Molecular Weight Polyethylene (UHM-WPE) – highly resistance to abrasion / erosion as well as offering excellent radiation resistance.

### • SHAFT SEAL

FluoroSeal High Performance Butterfly Valves utilize a proven ptfе v-ring packing arrangement loaded by a gland/follower as the standard shaft seal to atmosphere. Optional double packing, live loading, and monitoring port are available in applications where fugitive emission resistance is critical.



Seat



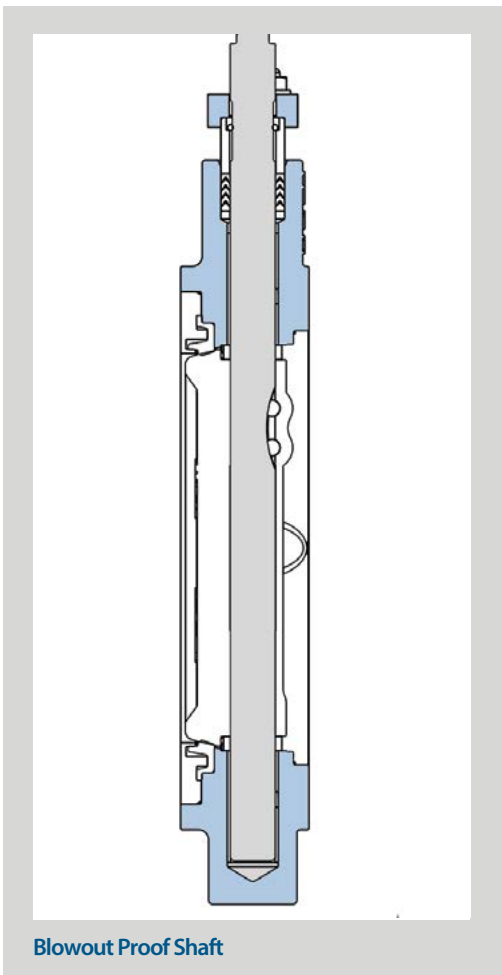
Shaft Seal

- **BEARING DESIGN**

Stainless steel / ptfе shaft bearings provide shaft support while resisting deformation due to line pressure to maintain shaft concentricity with stem packing to assure a positive seal to atmosphere and practically eliminate fugitive emissions. The ptfе impregnated bearings provide lubricity which ensures smooth cycling and lower operating torque.

- **BLOWOUT PROOF SHAFT**

A high strength, blow-out proof 17-4PH shaft is standard on all FluoroSeal High Performance Butterfly Valves. The shaft is positively contained in the case of failure by a metal retaining ring. FluoroSeal utilizes a one-piece shaft (6" and above) and a closed bottom body design to increase reliability and eliminate a potential leak path. FluoroSeal utilizes 2 piece shaft for 4" and below in order to optimize flow rates.



Blowout Proof Shaft

## MAINTENANCE

FluoroSeal High Performance Butterfly Valves are virtually maintenance free and are engineered to provide a long, trouble free service life. Should seat replacement be required, it can easily be replaced by simply removing the body insert. No dis-assembly of the disc and shaft is required.

## SPECIAL APPLICATIONS

FluoroSeal High Performance Butterfly Valves can be successfully used in a wide range of specialized services. Some special services applications are listed below. FluoroSeal can also provide special service High Performance Butterfly Valves built on unique end-user specifications.

- **Fugitive Emissions** – Optional double packing and live-loading offers increased emissions resistance on FluoroSeal® High-Performance Butterfly Valves. Live-loaded packing compensates for both thermal gradients as well as normal wear while double packing offer the increased sealing of two independent packing sets. A monitoring port can be supplied on those valves that incorporate double packings.
- **Vacuum** – Standard FluoroSeal® High-Performance Butterfly Valves are rated to provide positive shut-off and stem sealing in vacuum down to  $2 \times 10^{-2}$  torr; specially designed high-vacuum valves can perform in vacuum applications down to  $1 \times 10^{-5}$  torr.
- **Chlorine and Oxygen** – valves are specially cleaned and prepped to assure cleanliness and eliminate the potential of contamination with oil, grease, or other foreign material. Chlorine prepped valves meet the requirements of the Chlorine Institute Pamphlet VI.
- **NACE** - Valves are modified to meet the latest NACE specifications for materials used in sour environments: NACE MR0175 / ISO 15156 and NACE MR0103-2003. Excellent for use in sour gas, sour oil, or other applications where sulfide stress cracking or chloride stress cracking is a concern.
- **Steam** – Standard valves with RPTFE seats can be used in saturated steam applications up to 135 psig while valves with Hi-Temp seats can be used in saturated steam applications up to 150 psig.
- **Abrasive Service** - Tungsten titanium carbide (TTC) hard coated discs are available for use in abrasive applications involving slurry or solid particles in suspension. The TTC coating greatly increases the service life of the valve and its in-line sealing ability. TTC can be applied to other valve parts as required.



### PLEDGE OF QUALITY

All major pressure bearing and/or boundary components of FluoroSeal valves are fully traceable to mill test certificates ensuring material authenticity. Quality levels are maintained through continuous inspection and manufacturing surveillance of these and all other components. A concerted effort is made to conform to all regulatory authority requirements where and when invoked, in keeping with FluoroSeal's pledge of "Quality First."

### QUALITY ASSURANCE

FluoroSeal valves bring all of the best design features to the market and they are also inspected throughout the full manufacturing process from foundry to packaging to ensure high quality and consistency in every unit.



### WORLDWIDE PRESENCE

FluoroSeal operations span across the world - from headquarters in Canada, to an international sales force and manufacturing. Comprised of over 500 employees worldwide, FluoroSeal is a leading provider of innovative solutions to the flow control industry.

For 35 years, FluoroSeal has been manufacturing and customizing a wide range of valves, parts, and accessories for various industries such as Oil & Gas, Chemical, Petrochemical, Power, Pharmaceutical, and Mining. Our client-oriented culture allows us to understand complex industry needs and meet the highest quality standards - that is why our manufacturing processes are ISO 9001:2015 and PED 2014/68/EU certified.

Our wholly owned foundries and manufacturing plants enhance our capability to offer an extensive range of high quality valves at competitive prices in a wide range of exotic alloys on demand. With its large network of warehouses, distributors, and representatives, FluoroSeal is capable of delivering valve products, technical support, and complementary services worldwide and is able to support its customers with quick deliveries in case of emergencies and unscheduled shutdowns.

Our product offering is continuously evolving thanks to our team of highly skilled designers, engineers, and metallurgists who ensure the application of the latest technologies in CAD software, production methods, machinery, quality control procedures, and product testing to all of our products.

#### ISO 9001 : 2015



Design and Manufacture of Industrial Valves

#### PED 2014/68/EU



Design and Manufacture of Industrial Valves

#### AD 2000 -Merkblatt W0



Production of Investment Castings

#### ISO 15848-1:2015



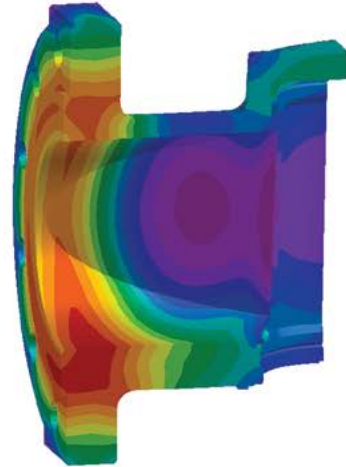
Fugitive Emissions

## FOUNDRY

### QUALITY ENGINEERED INTO EVERY CASTING

Through the use of solidification modeling, the Niyama criterion, and other proprietary engineering techniques, a unique system of gating and risering is developed to provide for even casting cooling which greatly reduces or eliminates internal casting defects such as shrinkage and micro-porosity.

All newly designed FluoroSeal casting designs are subjected to a rigorous first article sampling procedure which includes radiography, liquid penetrant examination, and other non-destructive as well as destructive testing to verify the production techniques.



Solidification Model

### HIGH QUALITY RAW MATERIALS ENSURE HIGH QUALITY CASTINGS

All specialty and exotic alloy High-Performance Butterfly Valve (HPBV) body and disc castings poured in FluoroSeal's in-house Montreal foundry are produced using VOD ingot (vacuum oxygen decarburization).

VOD provides highly refined, high purity raw material that helps to minimize impurities, resulting in high quality castings. In addition, each pour in the foundry is argon-drip blanketed to reduce oxygen contamination.



Firing Shells Molds

### SPECIALTY ALLOY HIGH-PERFORMANCE BUTTERFLY VALVES ARE OUR SPECIALTY

FluoroSeal offers a wide variety of specialty alloys, ranging from standard carbon and stainless steels, including duplex and super-duplex, nickel and nickel alloys such as Hastelloys, Inconels, Incolloys and Monel up to titanium and zirconium alloys, amongst others.

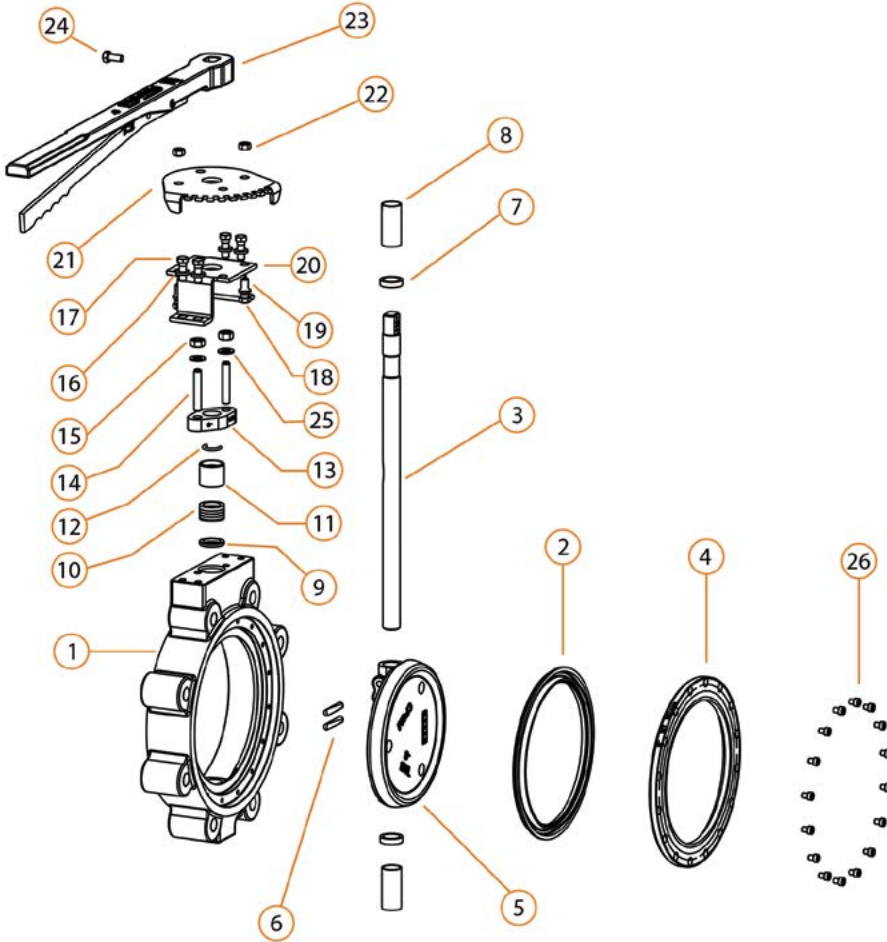
With its in-house metallurgical expertise and foundry, FluoroSeal ensures the quality of its alloy castings. Maintaining a direct control of its foundry cycle-time allows FluoroSeal the flexibility to produce small run quantities with a very short lead time.



Montreal Foundry

**HIGH PERFORMANCE BUTTERFLY VALVE**

Class 150: 2" to 12" / Class 300: 2" to 12"



**LIST OF COMPONENTS**

No.	Description/Part
1	Body
2	Seat
3	Shaft
4	Insert Lug
5	Disc
6	Pin
7	Spacer
8	Bushing
9	Packing Seat
10	Packing Group
11	Gland Follower
12	Retaining ring
13	Gland
14	Gland Stud
15	Gland Nut
16	Bracket Washer
17	Bracket Bolt
18	Plate Washer
19	Plate Bolt
20	Bracket
21	Position Plate
22	Plate Nut
23	Lever
24	Lever Nut
25	Gland Washer
26	Insert Screw

**DESIGN AND TESTING STANDARDS**

API 609  
 Specification for Butterfly Valves, Lug Type and Wafer Type  
 MSS SP-61  
 Pressure Testing of Steel Valves  
 MSS SP-25  
 Standard Marking System for Valves, Fittings, Flanges, and Unions  
 ANSI B16.34/ EN 12516-1  
 Valves – Flanged, Threaded and Butt-welding End  
 NACE MR0175/ ISO 15156  
 Sulphide Stress Cracking Resistant Metallic Material for Oilfield Equipment  
 ANSI B16.5, NACE MR 0103  
 2½" – 14" Pipe Flanged and Flanged Fittings  
 EN 1092-1  
 Flanges and joints  
 ANSI B16.47  
 Series A, 26" – 60" Large Diameter Steel Flanges  
 MSS SP-68  
 High Pressure Offset Seat Butterfly Valves  
 API 598  
 Valve Inspection and Testing  
 ISO 15848  
 Fugitive Emissions Testing  
 ASTM / ANSI/ EN  
 Materials

**STANDARD CONFIGURATION**

**Carbon Steel Valve**

- ASTM A216, Gr. WCB body and gland, ASTM A351 Gr. CF8M disc, ASTM A564 Gr. 630 (17-4PH) Shaft, GF2P (Molecularly Enhanced PTFE) seat, PTFE packing, and ASTM A193 Gr. B7 gland studs.

**Stainless Steel Valve**

- ASTM A351, Gr. CF8M body, gland and disc, ASTM A564, 630 (17-4PH) Shaft, GF2P seat, PTFE packing, ASTM A193 Gr. B8 gland studs.

**FLOW COEFFICIENT**

CLASS 150/PN 10/PN 16		
Size		Cv
NPS	DN	
2 ½"	65	76
3"	80	166
4"	100	398
5"	125	647
6"	150	1,052
8"	200	2,198
10"	250	3,003
12"	300	5,097
14"	350	5,797

CLASS 300/PN 25		
Size		Cv
NPS	DN	
2 ½"	65	76
3"	80	166
4"	100	398
5"	125	647
6"	150	1,052
8"	200	1,795
10"	250	3,156
12"	300	4,745
14"	350	5,203

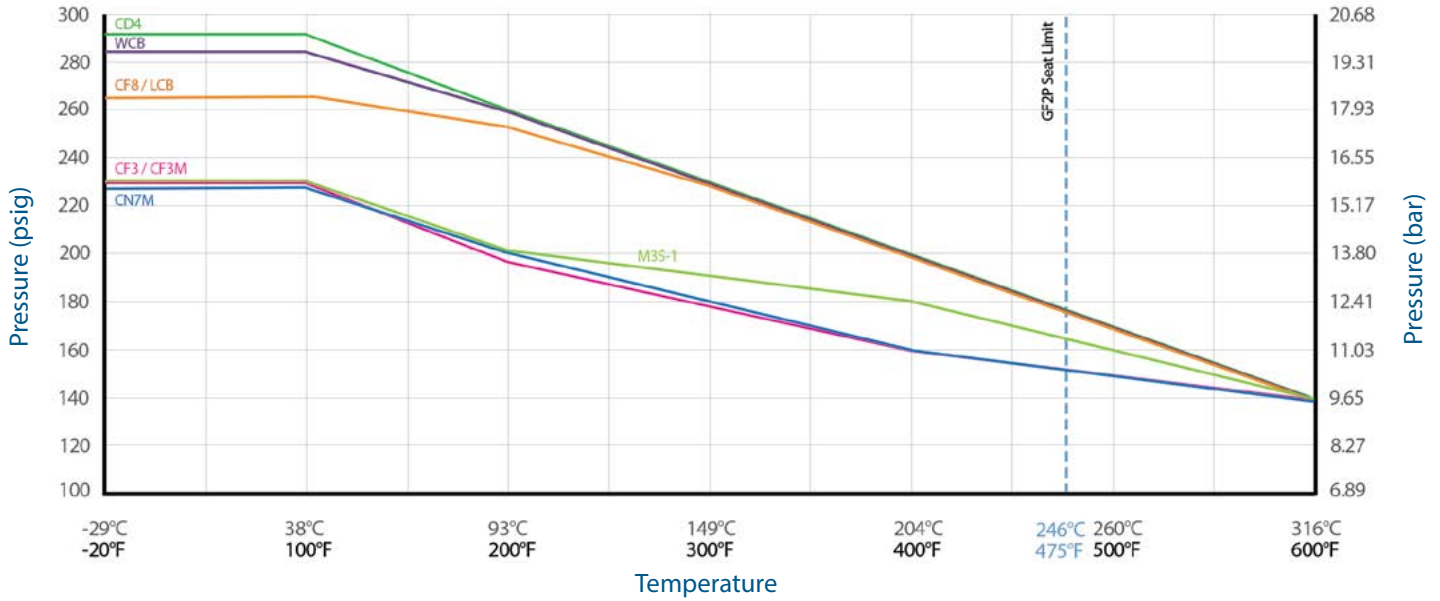
**VALVE OPERATING TORQUES**

CLASS 150/PN 10/PN 16							
Size		100 psi / 6.9 bar		200 psi / 13.8 bar		285 psi / 19.7 bar	
in	DN	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
2 ½"	65	265	30	221	25	310	35
3"	80	309	35	345	39	363	41
4"	100	442	50	451	51	497	56
5"	125	549	62	655	74	770	87
6"	150	832	94	1,018	115	1,141	129
8"	200	1,433	162	1,726	195	1,947	220
10"	250	1,938	219	2,407	272	2,841	321
12"	300	2,593	293	3,487	394	4,186	473
14"	350	4,310	487	6,018	680	7,594	858

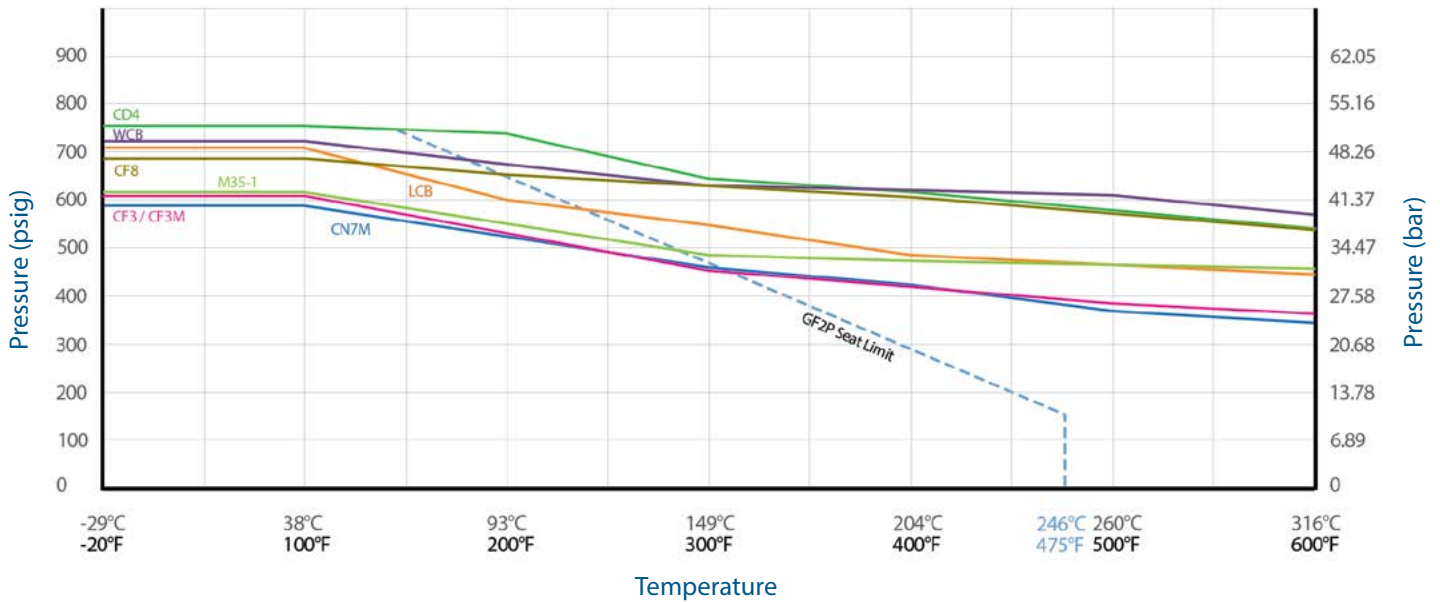
CLASS 300/ PN 25													
Size		300 psi / 20.7 bar		400 psi / 27.6 bar		500 psi / 34.5 bar		600 psi / 41.4 bar		700 psi / 48.3 bar		740 psi / 51 bar	
in	DN	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
2 ½"	65	309	35	336	38	336	38	424	48	389	44	389	44
3"	80	354	40	389	44	424	48	495	56	575	65	531	60
4"	100	646	73	725	82	752	85	823	93	911	103	991	112
5"	125	1,008	114	1,150	130	1,327	150	1,460	165	1,628	184	1,734	196
6"	150	1,389	157	1,637	185	1,911	216	2,106	238	2,336	264	3,310	274
8"	200	2,787	315	3,239	366	3,779	427	4,212	476	4,690	530	4,885	552
10"	250	4,274	483	5,036	569	5,859	662	6,673	754	7,478	845	7,868	889
12"	300	5,921	669	7,018	793	8,098	915	9,142	1,033	10,204	1,153	10,656	1,204
14"	350	9,912	1,120	12,169	1,375	14,435	1,631	16,621	1,878	18,834	2,128	19,781	2,235



**OPERATING PRESSURE-TEMPERATURE CHART  
HIGH-PERFORMANCE BUTTERFLY VALVES - CLASS 150/ PN 10/ PN 16**



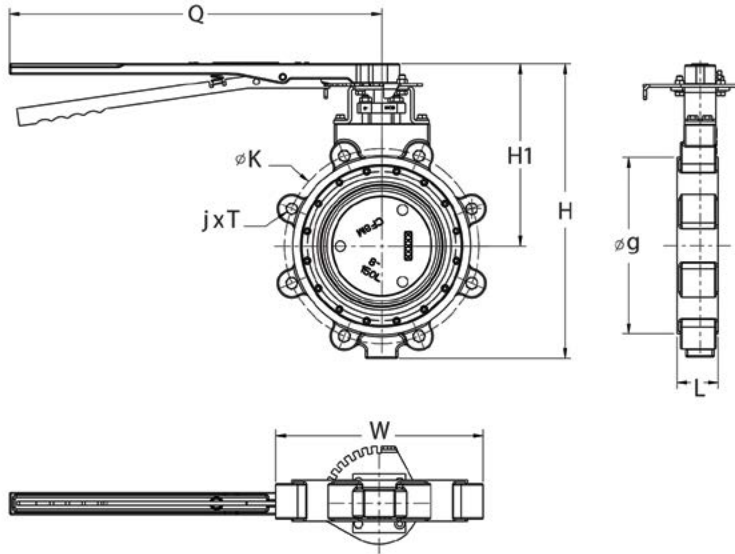
**OPERATING PRESSURE-TEMPERATURE CHART  
HIGH-PERFORMANCE BUTTERFLY VALVES - CLASS 300/PN 25**



**NOTES:**

1. The information in this catalog is provided for general informational purposes only.
2. For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.

# DIMENSIONS & WEIGHTS



**HIGH PERFORMANCE BUTTERFLY VALVE**  
**LUG - CLASS 150 & 300/PN 10/**  
**PN 16/PN 25**  
 SIZE 2 1/2" to 8"  
 (DN65-DN200)  
 Wrench Operated  
 Actuators Optional on All Sizes  
 Face-to-Face Dimensions to API 609,  
 ANSI B16.10, and EN 558-1  
 Flanged End Dimensions to ANSI B16.5 and  
 EN 1092-1

### ANSI CLASS 150

Size		L		W		H		H1		K		g		T	j	Q		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm	lb	Kg
2 1/2"	65	1.9	49	5.7	146	11.6	295	7.8	197	5.5	139.7	4.7	119	5/8-11 UNC	4	11.0	280	21.8	9.9
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	6.0	152.4	5.2	132	5/8-11 UNC	4	11.0	280	23.4	10.6
4"	100	2.0	52	8.4	214	14.1	357	8.6	219	7.5	190.5	6.2	157	5/8-11 UNC	8	11.0	280	33.1	15.0
5"	125	2.5	64	9.7	247	13.5	344	8.7	220	8.5	215.9	7.4	188	3/4-10 UNC	8	11.0	280	40.4	18.3
6"	150	2.2	57	10.3	261	14.6	371	9.4	238	8.4	214.3	8.5	216	3/4-10 UNC	8	11.0	280	44.8	20.3
8"	200	2.5	64	12.6	320	17.8	451	11.0	279	11.8	298.5	10.7	272	3/4-10 UNC	8	22.4	570	64.7	29.3

### ANSI CLASS 300

Size		L		W		H		H1		K		g		T	j	Q		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm	lb	Kg
2 1/2"	65	1.9	49	7.2	182	11.6	295	7.8	197	5.9	149.2	4.6	118	3/4"-10 UNC	8	11.0	280	25.4	11.5
3"	80	1.9	49	7.9	200	12.7	323	8.2	208	6.6	168.3	5.2	132	3/4"-10 UNC	8	11.0	280	28.9	13.1
4"	100	2.1	54	9.0	229	14.1	357	8.6	219	7.9	200.0	6.8	172	3/4"-10 UNC	8	11.0	280	35.1	15.9
6"	150	2.3	59	12.0	305	14.6	371	9.4	238	10.6	269.9	7.6	194	3/4"-10 UNC	8	11.0	280	63.5	28.8
8"	200	2.9	73	14.3	363	17.8	451	11.0	279	13.0	330.2	9.8	248	7/8"-9 UNC	12	22.4	570	98.7	44.7

### PN 10

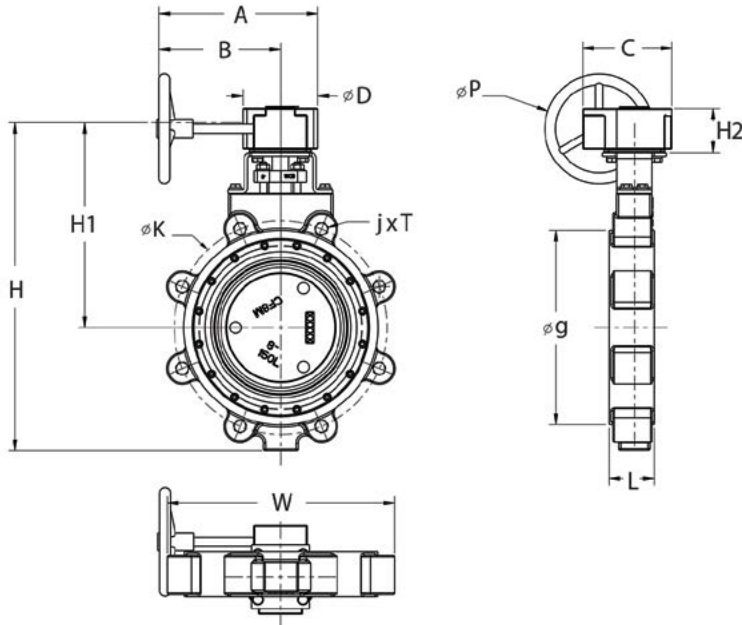
Size		L		W		H		H1		K		g		T	j	Q		Weight	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm	lb	Kg
2 1/2"	65	1.9	49	5.7	146	11.6	295	7.8	197	5.7	145	4.7	119	M16X2	8	11.0	280	21.8	9.9
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	6.3	160	5.2	132	M16X2	8	11.0	280	23.4	10.6
4"	100	2.0	52	8.4	214	14.1	357	8.6	219	7.1	180	6.2	157	M16X2	8	11.0	280	33.1	15.0
5"	125	2.5	64	9.7	247	13.5	344	8.7	220	8.3	210	7.4	188	M16X2	8	11.0	280	40.4	18.3
6"	150	2.2	57	10.3	261	14.6	371	9.4	238	9.4	240	8.5	216	M20X2.5	8	11.0	280	44.8	20.3
8"	200	2.5	64	12.6	320	17.8	451	11.0	279	11.6	295	10.7	272	M20X2.5	8	22.4	570	64.7	29.3

### PN 16

Size		L		W		H		H1		K		g		T	j	Q		Weight	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm	lb	Kg
2 1/2"	65	1.9	49	5.7	146	11.6	295	7.8	197	5.7	145	4.7	119	M16X2	8	11.0	280	21.8	9.9
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	6.3	160	5.2	132	M16X2	8	11.0	280	23.4	10.6
4"	100	2.0	52	8.4	214	14.1	357	8.6	219	7.1	180	6.2	157	M16X2	8	11.0	280	33.1	15.0
5"	125	2.5	64	9.7	247	13.5	344	8.7	220	8.3	210	7.4	188	M16X2	8	11.0	280	40.4	18.3
6"	150	2.2	57	10.3	261	14.6	371	9.4	238	9.4	240	8.5	216	M20X2.5	8	11.0	280	44.8	20.3
8"	200	2.5	64	12.6	320	17.8	451	11.0	279	11.6	295	10.7	272	M20X2.5	12	22.4	570	64.7	29.3

### PN 25

Size		L		W		H		H1		K		g		T	j	Q		Weight	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm	lb	Kg
2 1/2"	65	1.9	49	7.2	182	11.6	295	7.8	197	5.7	145	4.6	118	M16X2	8	11.0	280	25.4	11.5
3"	80	1.9	49	7.9	200	12.7	323	8.2	208	6.3	160	5.2	132	M16X2	8	11.0	280	28.9	13.1
4"	100	2.1	54	9.0	229	14.1	357	8.6	219	7.5	190	6.8	172	M20X2.5	8	11.0	280	35.1	15.9
6"	150	2.3	59	12.0	305	14.6	371	9.4	238	9.8	250	7.6	194	M24X3	8	11.0	280	63.5	28.8
8"	200	2.9	73	14.3	363	17.8	451	11.0	279	12.2	310	9.8	248	M24X3	12	22.4	570	98.7	44.7



**HIGH PERFORMANCE BUTTERFLY VALVE**  
**LUG - CLASS 150 & 300/PN 10/**  
**PN 16/PN 25**  
 SIZE 8" to 14"  
 (DN200-DN350)  
 Enclosed Gear Operated  
 Actuators Optional on All Sizes  
 Face-to-Face Dimensions to API 609,  
 ANSI B16.10, and EN 558-1  
 Flanged End Dimensions to ANSI B16.5 and  
 EN 1092-1

ANSI CLASS 150																														
Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P		Weight		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
8"	200	2.5	64	12.6	320	17.9	454	11.1	282	11.8	298.5	10.7	272	3/4-10 UNC	8	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150	98.6	44.7	
10"	250	2.8	71	15.5	394	21.7	552	13.5	342	14.3	362.0	12.8	324	7/8-9 UNC	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	146.2	66.3	
12"	300	3.2	81	18.4	468	24.4	620	14.6	371	17.0	431.8	15.0	381	7/8-9 UNC	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	191.5	86.9	
14"	350	3.6	92	20.5	520	28.3	718	16.5	420	18.8	476.3	20.4	518	3/8-16 UNC	16	12.2	310	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	308.3	139.8	

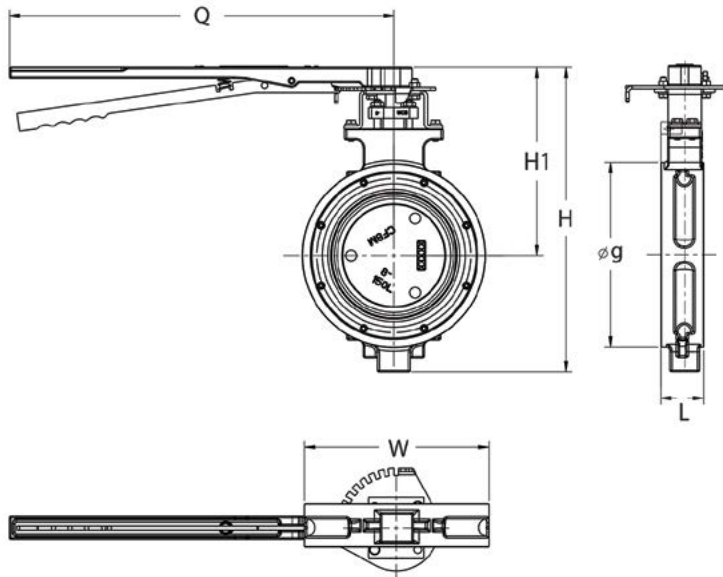
ANSI CLASS 300																														
Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P		Weight		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
8"	200	2.9	73	14.3	363	17.9	454	11.1	282	13.0	330.2	9.8	248	7/8"-9 UNC	12	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150	132.6	60.1	
10"	250	3.3	83	16.7	424	21.7	552	13.5	342	15.3	387.4	11.7	298	1"-8 UNC	16	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	199.6	90.5	
12"	300	3.6	92	19.8	502	24.4	620	14.6	371	17.7	450.8	14.0	356	1 1/8"-8 UN	16	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	280.4	127.2	
14"	350	4.6	117	22.8	578	28.3	718	16.5	420	20.3	514.4	15.2	387	1 1/8"-8 UN	20	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	580.8	263.5	

PN 10																														
Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P		Weight		
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
8"	200	2.9	73	14.3	363	17.9	454	11.1	282	11.6	295	9.8	248	M20X2.5	8	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150	132.6	60.1	
10"	250	3.3	83	16.7	424	21.7	552	13.5	342	13.8	350	11.7	298	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	199.6	90.5	
12"	300	3.6	92	19.8	502	24.4	620	14.6	371	15.7	400	14.0	356	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	280.4	127.2	
14"	350	4.6	117	22.8	578	28.3	718	16.5	420	18.1	460	15.2	387	M20X2.5	16	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	580.8	263.5	

PN 16																														
Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P		Weight		
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
8"	200	2.9	73	14.3	363	17.9	454	11.1	282	12.6	295	9.8	248	M20X2.5	12	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150	132.6	60.1	
10"	250	3.3	83	16.7	424	21.7	552	13.5	342	14.0	355	11.7	298	M24X3	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	199.6	90.5	
12"	300	3.6	92	19.8	502	24.4	620	14.6	371	16.1	410	14.0	356	M24X3	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	280.4	127.2	
14"	350	4.6	117	22.8	578	28.3	718	16.5	420	18.5	470	15.2	387	M24X3	16	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	580.8	263.5	

PN 25																														
Size		L		W		H		H1		K		g		T	j	A		B		C		D		H2		P		Weight		
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	Holes	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
8"	200	2.9	73	14.3	363	17.9	454	11.1	282	12.2	310	9.8	248	M24X3	12	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150	132.6	60.1	
10"	250	3.3	83	16.7	424	21.7	552	13.5	342	14.6	370	11.7	298	M27X3	12	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	199.6	90.5	
12"	300	3.6	92	19.8	502	24.4	620	14.6	371	16.9	430	14.0	356	M27X3	16	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	280.4	127.2	
14"	350	4.6	117	22.8	578	28.3	718	16.5	420	19.3	490	15.2	387	M30X3	16	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	580.8	263.5	

## DIMENSIONS & WEIGHTS



**HIGH PERFORMANCE BUTTERFLY VALVE**  
**WAFER - CLASS 150 & 300/PN 10/**  
**PN 16/PN 25**  
**SIZE 2 ½" to 8"**  
**(DN65-DN200)**  
 Wrench Operated  
 Actuators Optional on All Sizes  
 Face-to-Face Dimensions to API 609,  
 ANSI B16.10, and EN 558-1  
 Flanged End Dimensions to ANSI B16.5 and  
 EN 1092-1

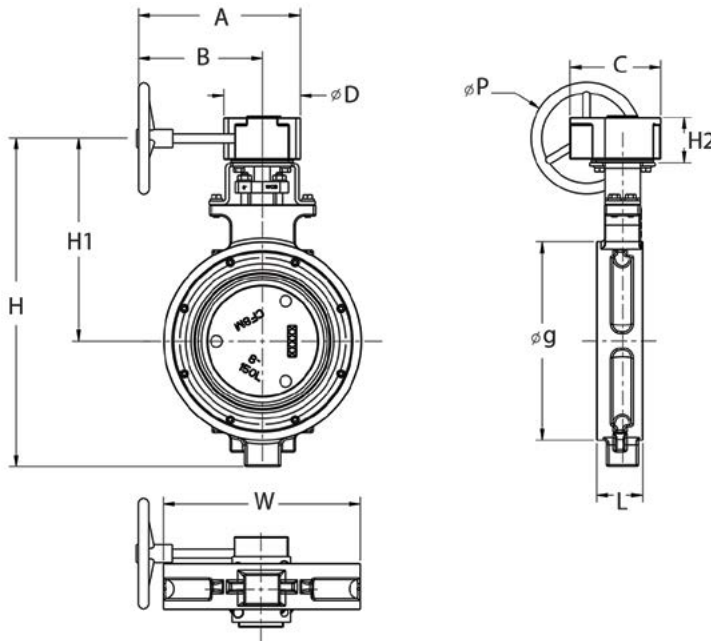
**ANSI CLASS 150/PN 10/ PN 16**

Size		L		W		H		H1		g		Q		Weight	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2 ½"	65	1.9	49	5.7	146	11.6	295	7.8	197	4.7	119	11.0	280	16.1	7.3
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	5.2	132	11.0	280	18.1	8.2
4"	100	2.1	54	6.2	157	13.8	350	8.6	219	6.2	157	11.0	280	22.5	10.2
5"	125	2.5	64	7.4	188	13.7	348	8.7	220	7.4	188	11.0	280	29.1	13.2
6"	150	2.2	57	8.5	216	14.6	371	9.4	238	8.5	216	11.0	280	35.7	16.2
8"	200	2.5	64	10.7	272	17.8	451	11.0	279	10.7	272	22.4	570	51.6	23.4

**ANSI CLASS 300/PN 25**

Size		L		W		H		H1		g		Q		Weight	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2 ½"	65	1.9	49	5.7	146	11.6	295	7.8	197	4.7	119	11.0	280	16.1	7.3
3"	80	1.9	49	5.7	146	12.7	323	8.2	208	5.2	132	11.0	280	18.1	8.2
4"	100	2.1	54	6.2	157	14.1	357	8.6	219	6.2	157	11.0	280	22.5	10.2
6"	150	2.3	59	8.5	216	14.6	371	9.4	238	8.5	216	11.0	280	37.1	16.8
8"	200	2.9	73	10.6	270	17.8	451	11.0	279	10.7	272	22.4	570	66.1	30.0





**HIGH PERFORMANCE BUTTERFLY VALVE  
 WAFER - CLASS 150 & 300/PN 10/  
 PN 16/PN 25  
 SIZE 8" to 14"  
 (DN200-DN350)  
 Enclosed Gear Operated  
 Actuators Optional on All Sizes  
 Face-to-Face Dimensions to API 609,  
 ANSI B16.10, and EN 558-1  
 Flanged End Dimensions to ANSI B16.5 and  
 EN 1092-1**

**ANSI CLASS 150/PN 10/ PN 16**

Size		L		W		H		H1		g		A		B		C		D		H2		P		Weight	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
8"	200	2.5	64	10.7	272	17.9	454	11.1	282	10.7	272	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150	85.5	38.8
10"	250	2.8	71	12.9	327	21.7	552	13.5	342	12.8	324	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	122.8	55.7
12"	300	3.2	81	15.0	381	24.4	620	14.6	371	15.0	381	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	160.0	72.6
14"	350	3.6	92	18.7	475	28.4	721	16.5	420	16.3	413	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	207.3	94.0

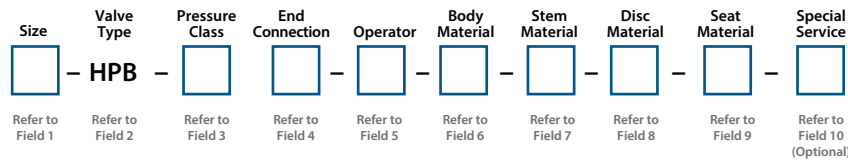
**ANSI CLASS 300/ PN 25**

Size		L		W		H		H1		g		A		B		C		D		H2		P		Weight	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
8"	200	2.9	73	10.6	270	17.9	454	11.1	282	10.7	272	8.4	213	6.7	170	4.9	125	4.1	105	2.4	62	5.9	150	100.0	45.4
10"	250	3.3	83	12.8	324	21.7	552	13.5	342	12.8	324	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	147.3	66.8
12"	300	3.6	92	15.0	381	24.4	620	14.6	371	15.0	381	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	199.8	90.6
14"	350	4.6	117	19.3	490	28.3	718	16.5	420	16.4	416	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	395.2	179.3

**NOTES:**

1. The information on this catalog is provided for general informational purposes only.
2. Customization for specific applications is available upon request.
3. For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.
4. We reserve the right to make changes without prior notice.

# ORDERING INSTRUCTIONS



Field 1 - Size	
<b>Size Range</b>	2" to 14"

Field 2 - Valve Type	
<b>Code</b>	<b>Type</b>
HPB	High Performance Butterfly Valve

Field 3 - Pressure Class					
<b>Code</b>	15	30	D10	D16	D25
<b>Type</b>	150	300	PN10	PN16	PN25

Field 4 - End Connection			
<b>Code</b>	LF	DF	WF
<b>Type</b>	Lug (Single Flange)	Double Flange	Wafer

Field 5 - Operator				
<b>Code</b>	A	WL	WX	B
<b>Type</b>	Actuated	Wrench+ Locking Device (Standard)	Wrench + Locking Device + Stem Extension	Bare Stem
<b>Code</b>	EG		EX	
<b>Type</b>	Enclosed Gear + Locking Device		Enclosed Gear + Locking Device + Stem Extension	

Field 6 - Body Material	
Refer to Table 1 - Available Materials	

Field 7 - Shaft Material	
<b>Code</b>	00 (Standard)
<b>Type</b>	ASTM A564 Gr. 630 (17-4PH)

or refer to Table 1 - Available Materials

Field 8 - Disc Material	
Refer to Table 1 - Available Materials	

Field 9 - Seat Material					
<b>Code</b>	G	R	H	U	X
<b>Type</b>	GF2P	RTFE	Hi-Temp	UHMWPE	Special

Field 10 - Special Service ( a combination of Special Service can be used ) - Optional						
<b>Code</b>	V	CL	OX	NA	S	FE
<b>Type</b>	Vacuum Service	Chlorine	Oxygen	NACE MR-01-75 Service	Steam Service	Fugitive Emission Stem Seal
<b>Code</b>	TC	X				
<b>Type</b>	Abrasive Service	Special				

Table 1 - Available Materials							
Code	Description	ASTM Designation	DIN	Code	Description	ASTM Designation	DIN
C1	Carbon Steel	ASTM A216 Gr. WCB	1.0619	H3	HASTELLOY C	ASTM A494 Gr. CW6M	2.4883
C2	Carbon St. Low Temp.	ASTM A352 Gr. LCB	1.6220	H4	HASTELLOY C 276	ASTM A494 Gr. CW12MW	2.4686
C3	Carbon St. Low Temp.	ASTM A352 Gr. LCC	1.7219	I6	INCONEL	ASTM A494 Gr. CY40	2.4816
S1	304 Stainless Steel	ASTM A351 Gr. CF8	1.4308	N1	Nickel	ASTM A494 Gr. CZ-100	2.4816
S2	304L Stainless Steel	ASTM A351 Gr. CF3	1.4309	M1	MONEL	ASTM A494 Gr. M35-1	2.4365
S3	316 Stainless Steel	ASTM A351 Gr. CF8M	1.4408	T2	Titanium (Comm. Pure)	ASTM B367 Gr. C2	3.7035
S4	316L Stainless Steel	ASTM A351 Gr. CF3M	1.4409	T3	Titanium	ASTM B367 Gr. C3	3.7031
S5	317 Stainless Steel	ASTM A351 Gr. CG8M		T5	Titanium	ASTM B367 Gr. C5	
S6	317L Stainless Steel	ASTM A351 Gr. CG3M		Z2	Zirconium	ASTM B752 Gr. 702C	
S7	904L Stainless Steel	Cast grade	1.4584	Z5	Zirconium	ASTM B752 Gr. 705C	
A2	Alloy 20	ASTM A351 Gr. CN7M	1.4500	00	Alloy 17-4	ASTM A564 Gr. 630 (17-4PH)	1.4542
CD	CD4MCuN	ASTM A995 Gr. 1B	1.4463				
H1	HASTELLOY B	ASTM A494 Gr. N7M	2.4882				
H2	HASTELLOY B 2	ASTM A494 Gr. N12MV	2.4685				

## MODEL SELECTION EXAMPLE

Example: 2"HPB-15WF/WL-C1-S1-C2-G-V

Description: FluoroSeal 2" API 609 High Performance Butterfly Valve, Class 150, Wafer Type, Wrench Operated, body in ASTM A216 Gr. WCB, seat in GF2P, disc in ASTM A352 Gr. LCB, shaft in ASTM A351 Gr. CF8, and Vacuum Service.

## NOTES:

1. For all technical parameters of the product please refer to this catalog, additional information can be obtained from your local FluoroSeal sales office or authorized representative.
2. Customization for specific applications is available upon request.
3. For different materials, not listed in the above tables, please specify.
4. Special material configurations upon request with (X) shown in the model number.

**CONTROLLING PROVISIONS**

These terms and conditions shall control with respect to any purchase order or sale of FluoroSeal Inc.'s products. No waiver, alteration or modification of these terms and conditions whether on Buyer's purchase order or otherwise, shall be valid unless the waiver, alteration or modification is specifically accepted in writing and signed by an authorized representative of FluoroSeal Inc.

**DELIVERY**

FluoroSeal Inc. will make every effort to complete delivery of products as indicated on its acceptance of an order, but FluoroSeal Inc. assumes no responsibility or liability, and will accept no back charge, for loss or damage due to delay or inability to deliver caused by acts of God, war, labor difficulties, accident, delays of carriers, by contractors or suppliers, inability to obtain materials, shortages of fuel and energy, or any other causes of any kind whatever beyond the control of FluoroSeal Inc. FluoroSeal Inc. may terminate any contract of sale of its products without liability of any nature, by written notice to Buyer, in the event that the delay in delivery or performance resulting from any of the aforesaid causes shall continue for a period of sixty (60) days. Under no circumstances shall FluoroSeal Inc. be liable for any special or consequential damages or for loss, damage, or expense (whether or not based on negligence) directly or indirectly arising from delays or failure to give notice of delay.

**WARRANTY**

FluoroSeal Inc. warrants for one year from the date of shipment its manufactured products to the extent that FluoroSeal Inc. will replace those having defects in material or workmanship when used for the purpose and in the manner which FluoroSeal Inc. recommends. If FluoroSeal Inc.'s examination discloses to its satisfaction that the products are defective and an adjustment is required, the amount of such adjustment shall not exceed the net sale price of the defective product(s) - no allowance will be made for labor or expense for 3rd party repair or replacement of defective products or damage resulting from same. FluoroSeal Inc. warrants other manufacturers products which it sells to the extent of the warranties and terms & conditions of their respective makers. Where engineering design or fabrication work is supplied, Buyer's acceptance of FluoroSeal Inc.'s design or of delivery of work shall relieve FluoroSeal Inc. of all further obligation, other than expressed in FluoroSeal Inc.'s product warranty.

THIS IS FLUOROSEAL INC.'S SOLE WARRANTY. FLUOROSEAL INC. MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORE STATED OBLIGATION ARE HEREBY DISCLAIMED BY FLUOROSEAL INC. AND EXCLUDED FROM THIS WARRANTY.

FluoroSeal Inc. neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or products. This warranty shall not apply to any products or parts of products which (a) have been repaired or altered outside of FluoroSeal Inc.'s factory, in any manner; (b) have been subjected to misuse, negligence or accidents; (c) have been used in a manner contrary to FluoroSeal Inc.'s instructions or recommendations. FluoroSeal Inc. shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives.

**LIABILITY**

FluoroSeal Inc. will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by FluoroSeal Inc. under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer. Any litigation will be interpreted in accordance with the laws of the Province of Québec, Canada and any suit, action or

proceeding relating to these terms and conditions may be instituted in any competent court sitting in the district of Montréal, Québec, Canada.

**RETURNS**

FluoroSeal Inc. cannot accept return of any product(s) unless its written permission has been first obtained, in which case same will be credited subject to the following: (a) all material returned must, on its arrival at FluoroSeal Inc.'s plant, be found to be in first-class condition; if not, cost of putting in saleable condition will be deducted from credit memoranda; (b) a handling charge deduction will be made from all credit memoranda issued for material returned; (c) transportation charges, if not prepaid, will be deducted from credit memoranda.

**SHIPMENTS**

All products sent out will be carefully examined, counted and packed. The cost of any special packing or special handling caused by Buyer's requirements or requests shall be added to the amount of the order. No claim for shortages will be allowed unless made in writing within ten (10) days of receipt of a shipment. Claims for products damaged or lost in transit should be made to the carrier, as FluoroSeal Inc.'s responsibility ceases, and title passes, on delivery to the carrier.

**SPECIAL PRODUCTS**

Orders covering special or non-standard products are not subject to cancellation except on such terms as FluoroSeal Inc. may specify on application.

**PRICES AND DESIGNS**

Prices and designs are subject to change without notice. All prices are F.O.B. Point of Shipment, unless otherwise stated.

**TAXES**

The amount of any sales, excise or other taxes, if any, applicable to the products, shall be added to the purchase price and shall be paid by Buyer unless Buyer provides FluoroSeal Inc. with an exemption certificate acceptable to the taxing authorities.

**NUCLEAR PLANTS**

Where the products, engineering design or fabrication is for nuclear plant applications, Buyer agrees (a) to take all necessary steps to add FluoroSeal Inc. as an insured supplier under the American Nuclear Insurers (ANI) pool and under the Mutual Atomic Energy Reinsurance Pool (MAERP) for property damage and liability insurance and if necessary steps could have been taken, but are not taken, Buyer shall hold FluoroSeal Inc. harmless against all such losses which could have been thus covered; (b) Buyer agrees to hold FluoroSeal Inc. harmless with respect to any personal injury or death, property damage or any other loss in a nuclear incident which is caused directly or indirectly by defective design, material, or workmanship, furnished by FluoroSeal Inc. and which is covered by insurance maintained by Buyer (or which could be so covered but with respect to which Buyer has elected to self-insure), and further agrees to waive subrogation by its carriers of such insurance against FluoroSeal Inc.; (c) as to nuclear hazards for which Buyer cannot obtain insurance coverage, the liability of FluoroSeal Inc. for any personal injury or death, property damage or any other loss directly caused by defective design, material, or workmanship furnished by FluoroSeal Inc. shall not exceed the value of the material furnished by FluoroSeal Inc. at the time of the loss occurrence.



#### EMEA

Broksøvej 79  
DK-4690 Skuderløse, Haslev  
Denmark  
T: +45 56 36 36 36  
F: +45 56 36 36 00  
[emeasales@fluorosealgroup.com](mailto:emeasales@fluorosealgroup.com)

Ziad Bou Dagher 2 Bldg. 4th Floor,  
Jounieh-Beirut Highway, Dbaye  
Beirut, Lebanon  
T: +1 (514) 394-1056  
F: +1 (514) 739-5452  
[emeasales@fluorosealgroup.com](mailto:emeasales@fluorosealgroup.com)

#### ASIA PACIFIC

**FluoroSeal Suzhou**  
1319 Jinfeng South Road  
Suzhou 215101, China  
T: +86 512 66389383  
F: +86 512 66569571  
[apsales@fluorosealgroup.com](mailto:apsales@fluorosealgroup.com)

#### USA

**FluoroSeal U.S.A.**  
13350 South Gessner Rd.  
Missouri City, TX, USA 77489  
T: +1 (281) 741-7855  
F: +1 (281) 741-3345  
[sales@fluorosealgroup.com](mailto:sales@fluorosealgroup.com)

#### HEADQUARTERS

**FluoroSeal Inc.**  
1875 46e Avenue  
Lachine, QC, Canada H8T 2N8  
TF: 1 888-269-0220  
T: +1 (514) 739-0220  
F: +1 (514) 739-5452  
[sales@fluorosealgroup.com](mailto:sales@fluorosealgroup.com)

[www.fluorosealvalves.com](http://www.fluorosealvalves.com)