

# FluoroSeal



## LINED BUTTERFLY VALVES

**ANSI/ASME/DIN/PED  
PFA LINED  
LUG AND WAFER TYPE**

Rated 150 psig/10 bar

## PRODUCT OVERVIEW

FluoroSeal

Due to its specially contoured disc profile, the FluoroSeal® fully PFA-lined butterfly valve offers high flow rates with minimal pressure drop throughout the entire range of disc rotation. Positive, bubble tight, bi-directional shut off is assured due to the elastomeric energized seat. With a standard live-loaded stem seal, tight control of fugitive emissions to atmosphere is maintained in both high cycle applications and those applications with temperature gradients. An engineered atmospheric seal at the stem prevents the ingress of foreign material into the packing chamber. Low operating torque is achieved via precision shaft bearings in combination with the spherical seat design. Excellent corrosion resistance is provided by the GF2P lined body and the securely anchored, PFA lined disc. A standard stem extension allows the valve to be installed in insulated applications without the need for a bolt on extension. An integral, one piece investment cast disc-shaft core eliminates lost motion during operation. A "Double D" drive shaft and ISO 5211 mounting pad allow for easy and cost effective automation.

### FluoroSeal® lined butterfly valves offer increased value by incorporating advanced design features:

- **ROBUST DESIGN AND CONSTRUCTION**

Superior standard material offering of A216 Gr. WCB two-piece carbon steel body and its one-piece disc/shaft in A995 Gr. CD4MCuN duplex stainless steel, the FluoroSeal lined butterfly valve is designed for long service life in difficult and demanding applications.

- **BI-DIRECTIONAL IN-LINE BUBBLE TIGHT SEALING**

With multiple sealing features and concentric design, the FluoroSeal lined butterfly valve offers bubble-tight in-line sealing in either direction, making it a true bi-directional valve.

- **GF2P BODY LINER**

The standard molecularly-enhanced GF2P body liner offers increased wear and chemical resistance, low creep, low cold flow, and low permeation properties, while ensuring tight in-line and atmospheric sealing over the life of the valve.

- **ENERGIZED BODY LINER SEAT**

The silicon backup seat (Viton available as an option) provides elastic loading to the GF2P liner, ensuring long term, robust, bubble-tight sealing over the life of the valve.



8" FluoroSeal ASME Class 150 Lined Butterfly Valve Wafer type with Pneumatic Actuator

- **MULTIPLE BEARINGS**

A series of teflon-coated journal bearings support the stem along its length, providing for low operating torque and precise stem alignment which ensures repeatable and robust stem sealing.

- **BLOW-OUT PROOF STEM (1)**

A hard shoulder on the stem ensures stem retention in case of failure.

- **ANTI-STATIC DEVICE (2)**

A press-fit metal disk ensures electrical continuity between the valve stem and body.

- **LIVE-LOADED STEM SEALS**

With both top and bottom live-loaded stem seals, the FluoroSeal lined butterfly valve offers excellent fugitive emissions resistance in high cycle applications as well as applications where large thermal gradients are encountered. The key to the design and sealing performance is due to the packing follower being integrally molded into the elastomeric backliner.

- **PFA-LINED ONE-PIECE DISC/STEM ASSEMBLY**

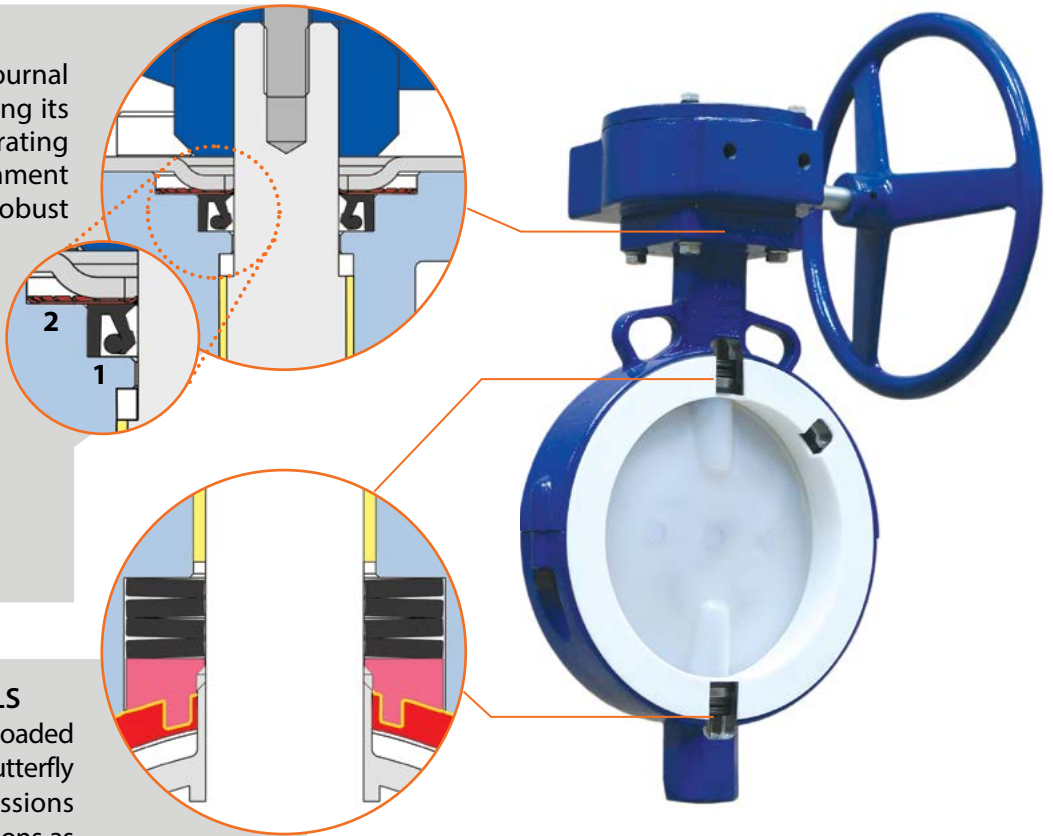
The standard PFA-lined disc/stem assembly offers low permeation properties and excellent wear resistance in demanding applications. Through a series of locking holes, the PFA lining is securely anchored to the disc/stem core eliminating liner delamination or collapse even in high vacuum applications. An unlined solid metal disc/stem is available in stainless steels, high nickel alloys, and exotics such as titanium.

- **END CAP**

An engineered Nitrile atmospheric seal at the stem prevents the ingress of foreign material into the packing chamber while providing additional stem sealing. Reinforced PTFE End Cap is offered as standard with Viton body liner selection.

- **LOW PROFILE DISC**

The one piece disc/shaft contour was optimized to minimize pressure drops while providing for high flow rates throughout the entire range of disc rotation.

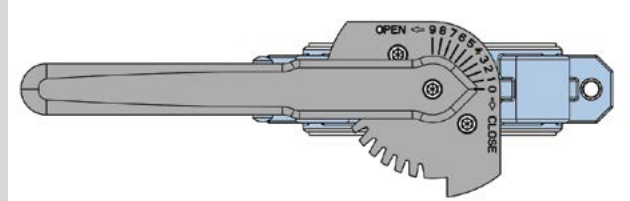


- **POSITIVE OPEN/CLOSED INDICATION**

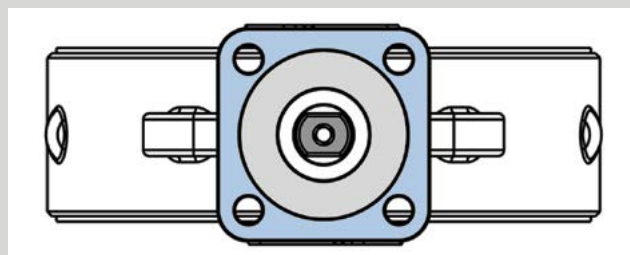
With the stem double-D flats parallel to the disc plane, the lever operates like a valve position indicator, parallel to the line when open, and perpendicular when closed.

- **ISO 5211 MOUNTING FLANGE**

For ease of actuation and standardized mounting hardware, all FluoroSeal® lined butterfly valves have ISO 5211 standard mounting flanges.



Positive Open/Closed Indication

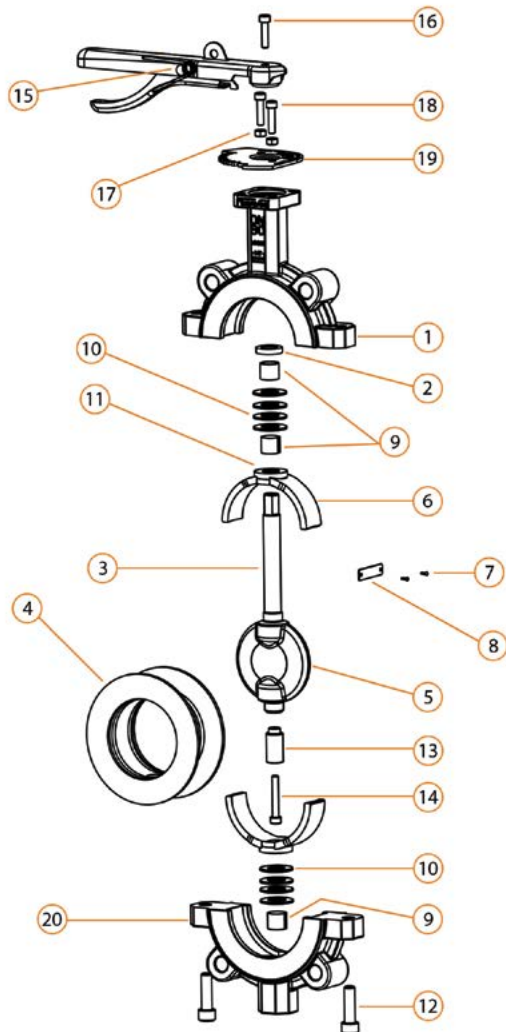


ISO 5211 Mounting Flange

## STANDARD CONFIGURATION

### LINED BUTTERFLY VALVE

Class 150: 2" to 24" / PN6: DN50 to DN600 / PN10: DN50 to DN600



### STANDARD CONFIGURATION

ASTM A216 Gr. WCB Body, ASTM A995 Gr. CD4McuN Disc/Stem, Body liner in GF2P (Molecularly Enhanced PTFE), Disc liner and Stem liner in Virgin unpigmented PFA lining, Silicon Back Liner, NBR Nitril Dust Seal ring, and ASTM A193 Gr. B7 Bolts.

### LIST OF COMPONENTS

No.	Description/Part
1	Upper body
2	Dust seal ring
3	Disc/Stem
4	Body Liner
5	Disc Lining
6	Backliner
7	Name Plate Screws
8	Name Plate
9	Bearing
10	Belleville Washer
11	Pusher
12	Body bolt
13	DN Bottom Stem
14	DN Bottom Stem Bolt
15	Wrench
16	Wrench Screw
17	Position Plate Nuts
18	Position Plate Screws
19	Position Plate
20	Lower body

### DESIGN AND TESTING STANDARDS

#### API 609

Specification for Butterfly Valves

#### ANSI B16.10

Face-to-Face and End-to-End Dimensions of Valves

#### ANSI B16.34/ EN 12516-1

Valves Flanged, Threaded, and Welded Ends

#### NACE MR0175/ ISO 15156

Sulphide Stress Cracking Resistant Metallic Material for Oilfield Equipment

#### EN 1092-1

Flanges and joints

#### ANSI B16.5

2" – 24" Pipe Flanges and Flanged Fittings

#### MSS SP-55

Quality Standard for Steel Castings for Valves

ASTM / ANSI / EN  
Materials

#### API 598

Testing

#### ISO 15848

Fugitive Emissions

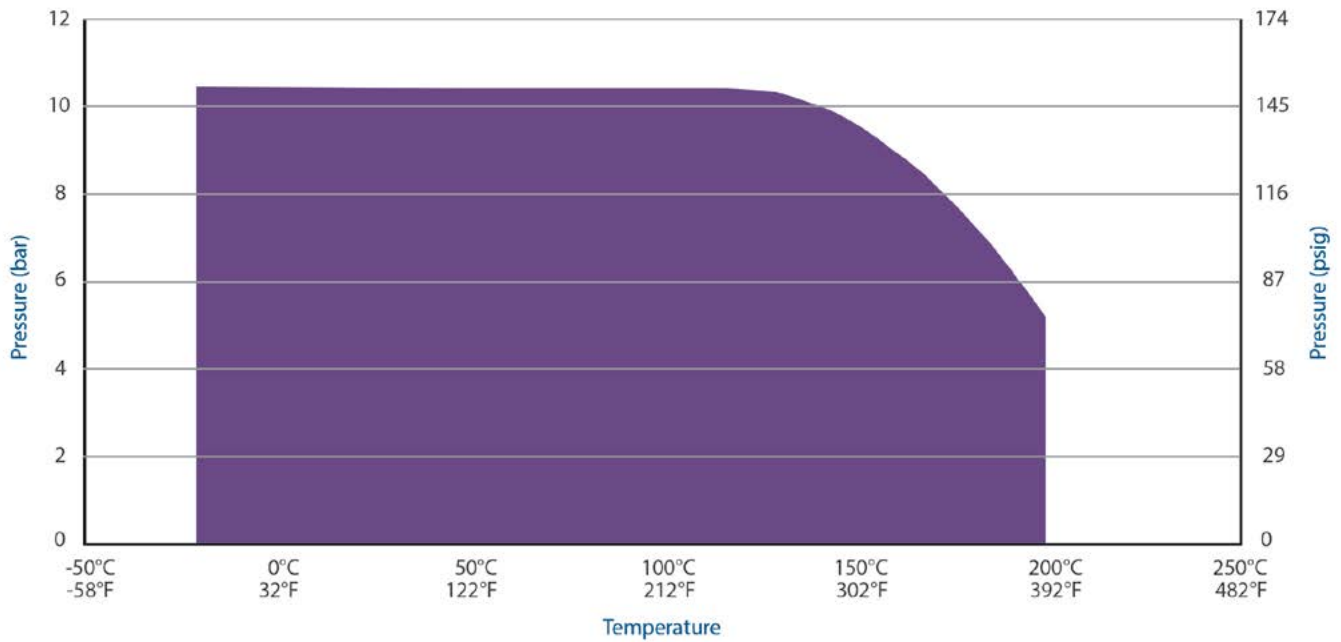
**VALVE OPERATING TORQUES**

Size		ISO Mounting Pattern	Operating Torque	
NPS	DN		(ft.lb)	(Nm)
2"	50	F05	15	20
2 1/2"	65	F05	18	25
3"	80	F05	33	45
4"	100	F07	44	60
5"	125	F07	63	85
6"	150	F07	103	140
8"	200	F10	140	190
10"	250	F10	236	320
12"	300	F10	310	420
14"	350	F12	369	500
16"	400	F12	406	550
18"	450	F14	457	620
20"	500	F14	502	680
24"	600	F14	701	950

**FLOW COEFFICIENT (Cv)**

Size		Degrees Open								
NPS	DN	10°	20°	30°	40°	50°	60°	70°	80°	90°
2"	50	0	7	21	39	72	105	151	195	222
2 1/2"	65	0	12	26	53	91	137	191	248	279
3"	80	0	19	37	80	141	224	310	392	458
4"	100	0	24	58	108	184	293	444	566	678
5"	125	0	42	93	196	293	525	747	943	1,175
6"	150	0	71	153	269	455	746	1,107	1,412	1,737
8"	200	0	108	264	536	925	1,367	2,108	2,793	3,536
10"	250	0	200	402	826	1,341	1,865	2,804	4,236	5,236
12"	300	0	304	603	1,151	1,993	3,095	4,595	6,917	8,368
14"	350	0	403	768	1,366	2,084	3,339	5,280	8,326	10,160
16"	400	0	596	1,147	1,712	2,844	4,908	7,595	10,734	13,161
18"	450	0	776	1,454	2,583	4,459	7,257	10,669	14,215	17,280
20"	500	0	1,036	1,875	3,453	6,207	9,458	13,682	18,055	20,883
24"	600	0	1,476	2,499	4,847	8,603	13,161	19,080	24,595	28,426

**OPERATING PRESSURE-TEMPERATURE CHART  
LINED BUTTERFLY VALVES**

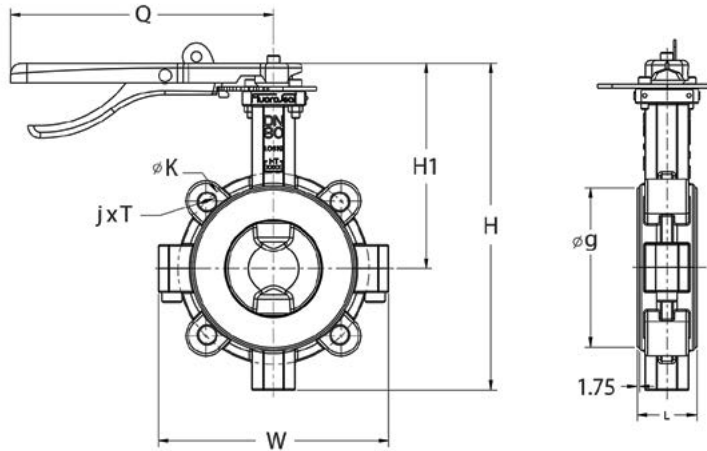


**NOTES:**

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



## LINED BUTTERFLY VALVE - LUG Class 150/PN 6/PN 10/PN 16

SIZE 2" to 8"  
(DN50-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"	50	1.7	44	6.6	168	7.9	200	5.8	147	4.8	120.7	3.5	90	5/8-11 UNC	4	8.3	210	9.8	4.4
2 1/2"	65	1.9	47	6.8	172	9.7	246	6.2	157	5.5	139.7	4.3	110	5/8-11 UNC	4	8.3	210	12.2	5.5
3"	80	1.9	47	7.2	184	10.3	261	6.5	164	6.0	152.4	5.0	126	5/8-11 UNC	4	8.3	210	13.1	5.9
4"	100	2.1	53	10.0	254	12.0	306	7.5	190	7.5	190.5	5.7	146	3/4-10 UNC	8	14.2	360	24.3	11.0
5"	125	2.2	57	11.0	280	13.0	331	8.0	202	8.5	215.9	6.9	176	3/4-10 UNC	8	14.2	360	29.8	13.5
6"	150	2.2	57	12.5	318	14.2	360	8.6	218	9.5	241.3	7.9	201	3/4-10 UNC	8	22.6	575	38.3	17.4
8"	200	2.4	61	15.6	396	17.0	432	9.9	252	11.8	298.5	10.1	256	3/4-10 UNC	8	22.6	575	52.0	23.6

### PN 6

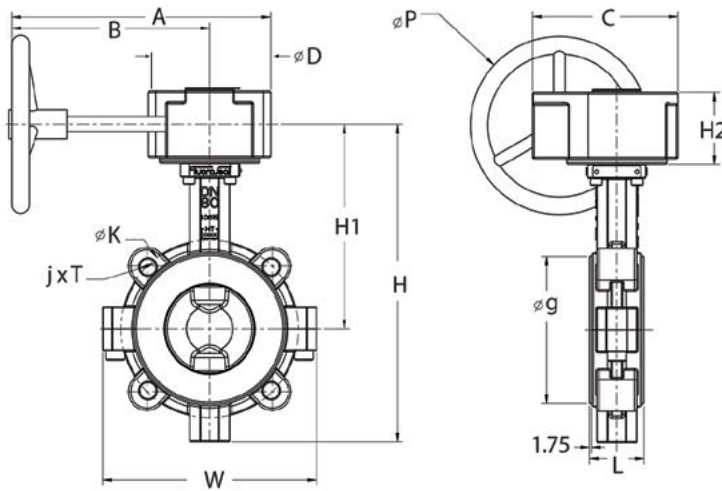
Size		L		W		H		H1		K		g		T	j	Q		Weight	
in	DN	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		No. of holes	in	mm	lb	Kg
2"	50	1.7	44	6.6	168	7.9	200	5.8	147	4.3	110	3.5	90	M12X1.75	4	8.3	210	9.8	4.4
2 1/2"	65	1.9	47	6.8	172	9.7	246	6.2	157	5.1	130	4.3	110	M12X1.75	4	8.3	210	12.2	5.5
3"	80	1.9	47	7.2	184	10.3	261	6.5	164	5.9	150	5.0	126	M16X2	4	8.3	210	13.1	5.9
4"	100	2.1	53	10.0	254	12.0	306	7.5	190	6.7	170	5.7	146	M16X2	8	14.2	360	24.3	11.0
5"	125	2.2	57	11.0	280	13.0	331	8.0	202	7.9	200	6.9	176	M16X2	8	14.2	360	29.8	13.5
6"	150	2.2	57	12.5	318	14.2	360	8.6	218	8.9	225	7.9	201	M16X2	8	22.6	575	38.3	17.4
8"	200	2.4	61	15.6	396	17.0	432	9.9	252	11.0	280	10.1	256	M20X2.5	8	22.6	575	52.0	23.6

### 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"	50	1.7	44	6.6	168	7.9	200	5.8	147	4.9	125	3.5	90	M16X2	4	8.3	210	9.8	4.4
2 1/2"	65	1.9	47	6.8	172	9.7	246	6.2	157	5.7	145	4.3	110	M16X2	8	8.3	210	12.2	5.5
3"	80	1.9	47	7.2	184	10.3	261	6.5	164	6.3	160	5.0	126	M16X2	8	8.3	210	13.1	5.9
4"	100	2.1	53	10.0	254	12.0	306	7.5	190	7.1	180	5.7	146	M16X2	8	14.2	360	24.3	11.0
5"	125	2.2	57	11.0	280	13.0	331	8.0	202	8.3	210	6.9	176	M16X2	8	14.2	360	29.8	13.5
6"	150	2.2	57	12.5	318	14.2	360	8.6	218	9.4	240	7.9	201	M16X2	8	22.6	575	38.3	17.4
8"	200	2.4	61	15.6	396	17.0	432	9.9	252	11.6	295	10.1	256	M20X2.5	8	22.6	575	52.0	23.6

### 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"	50	1.7	44	6.6	168	7.9	200	5.8	147	4.9	125	3.5	90	M16X2	4	8.3	210	9.8	4.4
2 1/2"	65	1.9	47	6.8	172	9.7	246	6.2	157	5.7	145	4.3	110	M16X2	8	8.3	210	12.2	5.5
3"	80	1.9	47	7.2	184	10.3	261	6.5	164	6.3	160	5.0	126	M16X2	8	8.3	210	13.1	5.9
4"	100	2.1	53	10.0	254	12.0	306	7.5	190	7.1	180	5.7	146	M16X2	8	14.2	360	24.3	11.0
5"	125	2.2	57	11.0	280	13.0	331	8.0	202	8.3	210	6.9	176	M16X2	8	14.2	360	29.8	13.5
6"	150	2.2	57	12.5	318	14.2	360	8.6	218	9.4	240	7.9	201	M16X2	8	22.6	575	38.3	17.4
8"	200	2.4	61	15.6	396	17.0	432	9.9	252	11.6	295	10.1	256	M20X2.5	12	22.6	575	52.0	23.6


**LINED BUTTERFLY VALVE - LUG**  
**Class 150/PN 6/PN 10/ PN 16**

 SIZE 8" to 24"  
 (DN200-DN600)

Enclosed Gear Operated

Actuators Optional on All Sizes

 Face-to-Face Dimensions to API 609,  
 ANSI B16.10, and EN 558-1

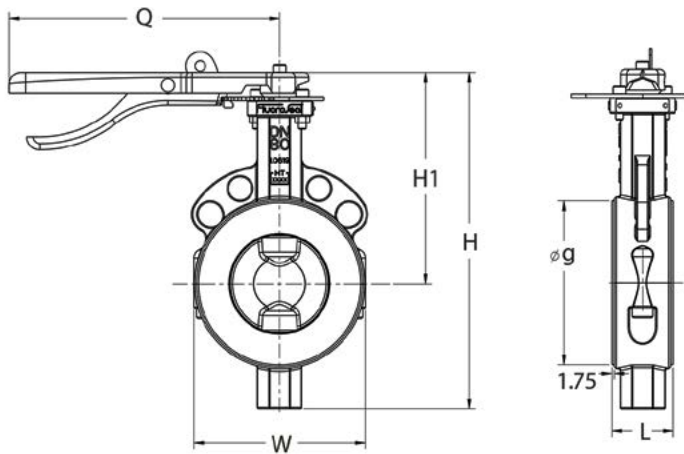
 Flanged End Dimensions to ANSI B16.5 and  
 EN 1092-1

ANSI CLASS 150																															
Size		L		W		H		H1		H2		K		g		T	j	A		B		C		D		P		Weight			
in	mm	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	lb	Kg
8"	200	2.4	61	15.6	396	17.5	445	10.4	265	3.1	78	11.8	298.5	10.1	256	3/4-10 UNC	8	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	82.8	37.6		
10"	250	2.7	69	18.7	474	19.8	504	11.6	295	3.1	78	14.3	362.0	12.1	307	7/8-9 UNC	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	117.9	53.5		
12"	300	3.1	79	22.3	566	22.8	579	13.2	335	3.1	78	17.0	431.8	14.3	363	7/8-9 UNC	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	164.0	74.4		
14"	350	3.1	79	23.5	598	26.6	675	14.9	379	3.1	78	18.8	476.3	16.3	413	1-8UNC	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	196.6	89.2		
16"	400	4.1	103	26.5	672	29.1	738	16.4	416	3.1	78	21.3	539.8	18.2	463	1-8UNC	16	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	302.6	137.3		
18"	450	4.5	115	28.4	722	32.2	818	18.0	457	3.1	80	22.8	577.9	20.4	518	1-8UNC	16	12.2	311	8.9	226	7.7	195	6.7	170	11.8	300	369.9	167.8		
20"	500	5.0	128	31.6	802	34.6	879	19.4	492	3.1	80	25.0	635.0	22.4	568	1-8UNC	20	12.2	311	8.9	226	7.7	195	6.7	170	11.8	300	501.4	227.4		
24"	600	6.1	155	36.6	930	40.3	1024	23.2	591	4.5	114	29.5	749.3	26.3	669	1 1/4-8UNC	20	16.5	418	11.3	288	11.4	290	10.2	260	15.0	380	859.9	390.0		

PN 6																															
Size		L		W		H		H1		H2		K		g		T	j	A		B		C		D		P		Weight			
in	DN	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	lb	Kg
8"	200	2.4	61	15.6	396	17.5	445	10.4	265	3.1	78	11.0	280	10.1	256	M20X2.5	8	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	82.8	37.6		
10"	250	2.7	69	18.7	474	19.8	504	11.6	295	3.1	78	13.2	335	12.1	307	M16X2	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	117.9	53.5		
12"	300	3.1	79	22.3	566	22.8	579	13.2	335	3.1	78	15.6	395	14.3	363	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	164.0	74.4		
14"	350	3.1	79	23.5	598	26.6	675	14.9	379	3.1	78	17.5	445	16.3	413	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	196.6	89.2		
16"	400	4.1	103	26.5	672	29.1	738	16.4	416	3.1	78	19.5	495	18.2	463	M20X2.5	16	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	302.6	137.3		
18"	450	4.5	115	28.4	722	32.2	818	18.0	457	3.1	80	21.7	550	20.4	518	M20X2.5	16	12.2	311	8.9	226	7.7	195	6.7	170	11.8	300	369.9	167.8		
20"	500	5.0	128	31.6	802	34.6	879	19.4	492	3.1	80	23.6	600	22.4	568	M20X2.5	20	12.2	311	8.9	226	7.7	195	6.7	170	11.8	300	501.4	227.4		
24"	600	6.1	155	36.6	930	40.3	1,024	23.2	591	4.5	114	27.8	705	26.3	669	M24X3	20	16.5	418	11.3	288	11.4	290	10.2	260	15.0	380	859.9	390.0		

PN 10																															
Size		L		W		H		H1		H2		K		g		T	j	A		B		C		D		P		Weight			
in	DN	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	lb	Kg
8"	200	2.4	61	15.6	396	17.5	445	10.4	265	3.1	78	11.6	295	10.1	256	M20X2.5	8	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	82.8	37.6		
10"	250	2.7	69	18.7	474	19.8	504	11.6	295	3.1	78	13.8	350	12.1	307	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	117.9	53.5		
12"	300	3.1	79	22.3	566	22.8	579	13.2	335	3.1	78	15.7	400	14.3	363	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	164.0	74.4		
14"	350	3.1	79	23.5	598	26.6	675	14.9	379	3.1	78	18.1	460	16.3	413	M20X2.5	16	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	196.6	89.2		
16"	400	4.1	103	26.5	672	29.1	738	16.4	416	3.1	78	20.3	515	18.2	463	M24X3	16	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	302.6	137.3		
18"	450	4.5	115	28.8	732	32.2	818	18.0	457	3.1	80	22.2	565	20.4	518	M24X3	20	12.2	311	8.9	226	7.7	195	6.7	170	11.8	300	369.9	167.8		
20"	500	5.0	128	31.6	802	34.6	879	19.4	492	3.1	80	24.4	620	22.4	568	M24X3	20	12.2	311	8.9	226	7.7	195	6.7	170	11.8	300	501.4	227.4		
24"	600	6.1	155	36.6	930	40.3	1,024	23.2	591	4.5	114	28.5	725	26.3	669	M27X3	20	16.5	418	11.3	288	11.4	290	10.2	260	15.0	380	859.9	390.0		

PN 16																															
Size		L		W		H		H1		H2		K		g		T	j	A		B		C		D		P		Weight			
in	DN	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	lb	Kg
8"	200	2.4	61	15.6	396	17.5	445	10.4	265	3.1	78	11.6	295	10.1	256	M20X2.5	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	82.8	37.6		
10"	250	2.7	69	18.7	474	19.8	504	11.6	295	3.1	78	13.8	355	12.1	307	M24X3	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	117.9	53.5		
12"	300	3.1	79	22.3	566	22.8	579	13.2	335	3.1	78	15.7	410	14.3	363	M24X3	12	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	164.0	74.4		
14"	350	3.1	79	23.5	598	26.6	675	14.9	379	3.1	78	18.5	470	16.3	413	M24X3	16	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	196.6	89.2		
16"	400	4.1	103	26.5	672	29.1	738	16.4	416	3.1	78	20.7	525	18.2	463	M27X3	16	12.2	310	9.3	235	6.9	174	6.0	152	11.8	300	302.6	137.3		
18"	450	4.5	115	28.8	732	32.2	818	18.0	457	3.1	80	23.0	585	20.4	518	M27X3	20	12.2	311	8.9	226	7.7	195	6.7	170	11.8	300	396.9	167.8		
20"	500	5.0	128	31.6	802	34.6	879	19.4	492	3.1	80	25.6	650	22.4	568	M30X3	20	12.2	311	8.9	226	7.7	195	6.7	170	11.8	300	501.4	227.4		
24"	600	6.1	155	36.6	930	40.3	1,024	23.2	591	4.5	114	30.3	770	26.3	669	M30X3	20	16.5	418	11.3	288	11.4	290	10.2	260	15.0	380	859.9	390.0		



**LINED BUTTERFLY VALVE - WAFER**  
**Class 150/PN 6/PN 10/ PN 16**

SIZE 2" to 4"  
 (DN50-DN100)

Wrench Operated

Actuators Optional on All Sizes

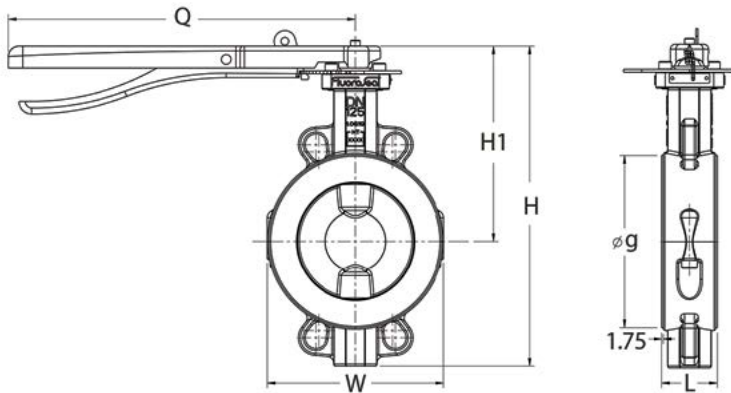
Face-to-Face Dimensions to API 609,

ANSI B16.10, and EN 558-1

Flanged End Dimensions to ANSI B16.5 and

EN 1092-1

ANSI CLASS 150/ PN 6/ 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"	50	1.7	44	3.8	96	7.9	200	5.8	147	3.5	90	8.3	210	6.4	2.9
2½"	65	1.9	47	4.6	116	9.7	246	6.2	157	4.3	110	8.3	210	8.9	4.0
3"	80	1.9	47	5.2	133	10.3	261	6.5	164	5.0	126	8.3	210	10.2	4.6
4"	100	2.1	53	6.1	156	12.0	306	7.5	190	5.7	146	14.2	360	16.0	7.3



**LINED BUTTERFLY VALVE - WAFER**  
**Class 150/PN 6/PN 10/ PN 16**

SIZE 5" to 8"  
 (DN125-DN200)

Wrench Operated

Actuators Optional on All Sizes

Face-to-Face Dimensions to API 609,

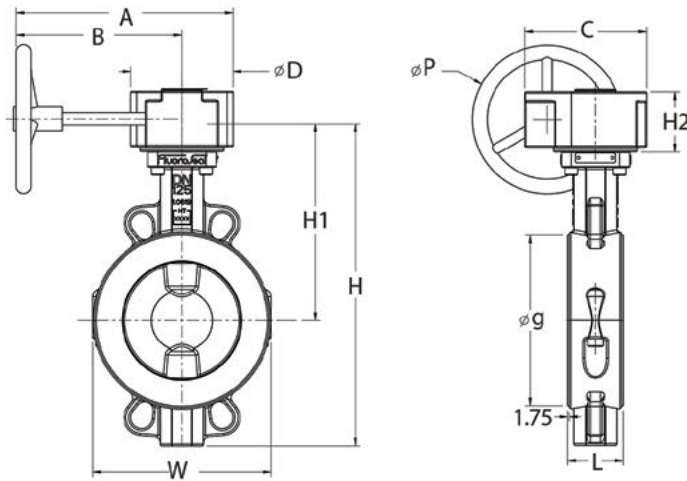
ANSI B16.10, and EN 558-1

Flanged End Dimensions to ANSI B16.5 and

EN 1092-1

ANSI CLASS 150/ PN 6/ 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
5"	125	2.2	57	7.2	183	13.0	331	8.0	202	6.9	176	14.2	360	21.3	9.7
6"	150	2.2	57	8.3	211	14.2	360	8.6	218	7.9	201	22.6	575	26.8	12.2
8"	200	2.4	61	10.7	271	17.0	432	9.9	252	10.1	256	22.6	575	36.6	16.6





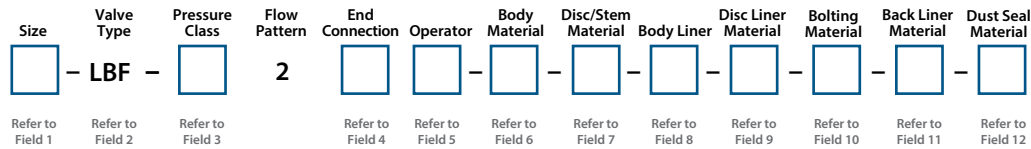
**LINED BUTTERFLY VALVE - WAFER**  
**Class 150/PN 6/PN 10/ PN 16**  
 SIZE 8" to 24"  
 (DN200-DN600)  
 Enclosed Gear Operated  
 Actuators Optional on All Sizes  
 Face-to-Face Dimensions to API 609,  
 ANSI B16.10, and EN 558-1  
 Flanged End Dimensions to ANSI B16.5 and  
 EN 1092-1

ANSI CLASS 150/ PN 6/ 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	2.4	61	10.7	271	17.5	445	10.4	265	10.1	256	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	67.5	30.6
10"	250	2.7	69	12.8	324	19.8	504	11.6	295	12.1	307	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	86.8	39.4
12"	300	3.1	79	15.0	382	22.8	579	13.2	335	14.3	363	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	117.1	53.1
14"	350	3.1	79	19.3	491	26.6	675	14.9	379	16.3	413	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	159.8	72.5
16"	400	4.1	103	21.8	553	29.1	738	16.4	416	18.2	463	12.2	310	9.3	235	6.9	174	6.0	152	3.1	78	11.8	300	219.6	99.6
18"	450	4.5	115	23.9	608	32.2	818	18.0	457	20.4	518	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	293.4	133.1
20"	500	5.0	128	25.9	658	34.6	879	19.4	492	22.4	568	12.2	311	8.9	226	7.7	195	6.7	170	3.1	80	11.8	300	354.9	161.0
24"	600	6.1	155	30.4	771	40.3	1,029	23.2	591	26.3	669	16.5	418	11.3	288	11.4	290	10.2	260	4.5	114	15.0	380	615.2	279.1

### NOTES:

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

# ORDERING INSTRUCTIONS



Field 1 - Size	
<b>Size Range</b>	2" to 24" or DN50 to DN600

Field 2 - Valve Type	
<b>Code</b>	LBF
<b>Type</b>	Lined Butterfly Valve

Field 3 - Pressure Class			
<b>Code</b>	15	DN10	DN16
<b>Type</b>	150	PN10	PN16

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

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

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

Field 7 - Disc/Stem Material
Refer to Table 1 - Available Materials

Field 8 - Body Liner Material				
<b>Code</b>	A	G	P	X
<b>Type</b>	PFA	GF2P	PTFE	Special

Field 9 - Disc Liner Material			
<b>Code</b>	0	1	X
<b>Type</b>	None	PFA (Standard)	Special

Field 10 - Bolting Material			
<b>Code</b>	1	2	X
<b>Type</b>	ASTM A193 Gr. B7	ASTM A193 Gr. B7M	Special

Field 11 - Back Liner Material		
<b>Code</b>	S	V
<b>Type</b>	Silicon (Standard)	Viton

Field 12 - Dust Seal Material			
<b>Code</b>	N	V	X
<b>Type</b>	NBR Nitril (Standard)	Viton	Special

Table 1 - Available Materials							
Code	Description	ASTM Designation	DIN	Code	Description	ASTM Designation	DIN
C1	Carbon Steel	ASTM A216 Gr. WCB	1.0619	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	2.4170
S3	316 Stainless Steel	ASTM A351 Gr. CF8M	1.4408	M1	MONEL	ASTM A494 Gr. M35-1	2.4365
S5	317 Stainless Steel	ASTM A351 Gr. CG8M		T2	Titanium (Comm. Pure)	ASTM B367 Gr. C2	3.7035
S6	317L Stainless Steel	ASTM A351 Gr. CG3M	1.4438	T3	Titanium	ASTM B367 Gr. C3	3.7031
S7	904L Stainless Steel	Cast grade	1.4584	T5	Titanium	ASTM B367 Gr. C5	
S8	Duplex Stainless steel	ASTM A995 Gr. CD4MCuN	1.4517	Z2	Zirconium	ASTM B752 Gr. 702C	
A2	Alloy 20	ASTM A351 Gr. CN7M	1.4500	Z5	Zirconium	ASTM B752 Gr. 705C	
H1	HASTELLOY B	ASTM A494 Gr. N7M	2.4882				
H2	HASTELLOY B 2	ASTM A494 Gr. N12MV	2.4685				
H3	HASTELLOY C	ASTM A494 Gr. CW6M	2.4883				
H4	HASTELLOY C 276	ASTM A494 Gr. CW12MW	2.4686				

## MODEL SELECTION EXAMPLE

Example: 6" LBF-152WF/WL-S3-S8-G-1-1-S-N  
 Description: FluoroSeal 6" API 609 Lined Butterfly Valve, Class 150, 2-Way Flow Pattern, Wafer Type, Wrench with locking device, Body in ASTM A351 Gr. CF8M, Disc and Stem in ASTM A995 Gr. CD4MCuM, Body Liner in GF2P, Disc Liner in PFA, Bolt in ASTM A193 Gr. B7, Back Liner in Silicon, and Dust Seal Ring in NBR Nitril.

## 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.

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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.

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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.

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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.



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