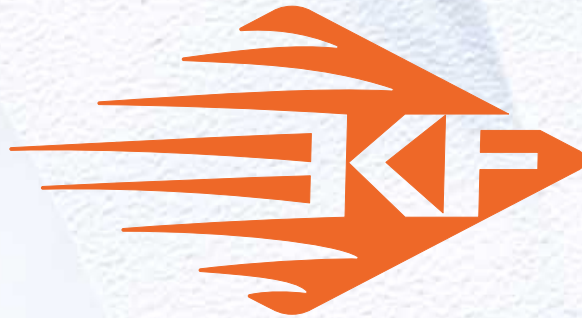
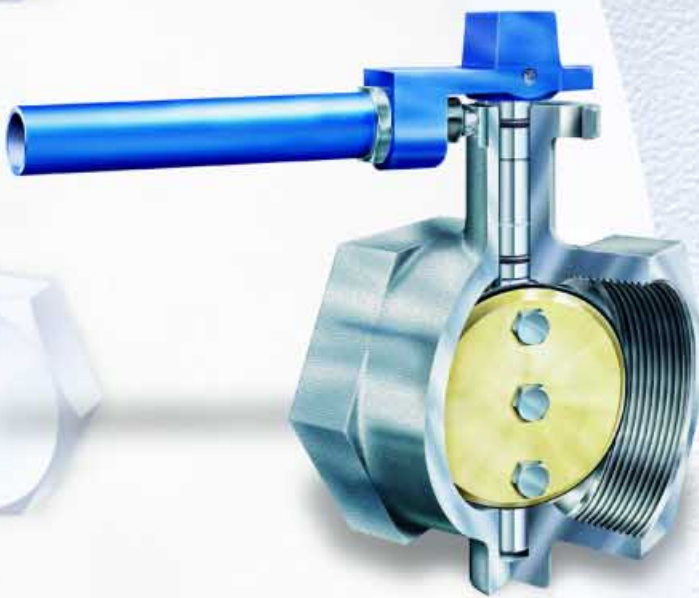


# KF Butterfly Valves



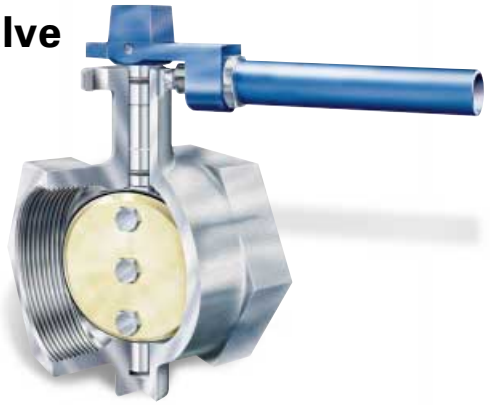
**KF Industries**



Superior Fluid Control Products  
A Brand of **CIRCOR** Energy Products, Inc.

# KF Hale Series 2200 Body Style Butterfly Valve

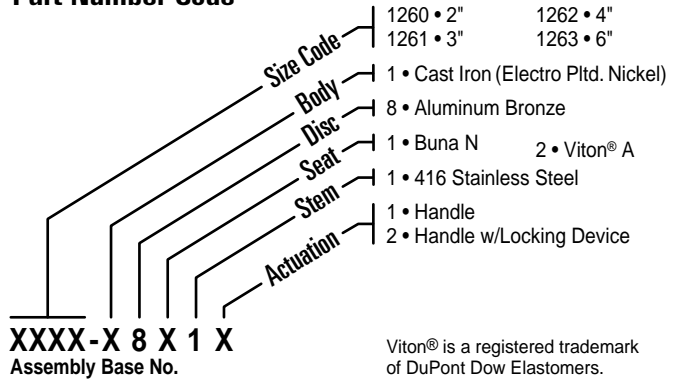
The Series 2200 Body Style Butterfly Valve is the most cost effective and readily available control valve for threaded pipe applications, tank batteries, hook-ups and storage tanks. The 2200 Butterfly Valve is suitable for a wide range of applications and allows for smooth operation in varying temperatures and harsh environments.



## General Design Features

- Lockable Handle, designed with locking holes in flange and handle cap to be easily locked in full open or full closed position.
- Maximum size stem diameter on all valves offers greater strength and increases the life of the valve.
- Standard polished bronze disc with replaceable Buna N o-ring. An optional fluoroelastomer o-ring material is also available. Both disc and stem o-rings are easily replaced in the field.
- A one-piece cast iron, nickel plated body for corrosion resistance, rated at 200# WOG maximum working pressure. Trim for salt water is also available.

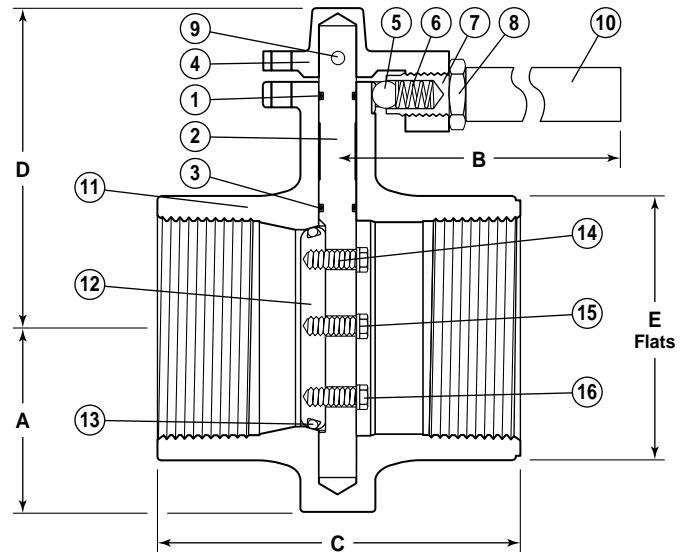
## Part Number Code



## Parts List

Part No.	Description	Material
1	Stem O-Ring	Buna N or Viton®
2	Stem	416 Stainless Steel
3	Stem O-Ring	Buna N or Viton®
4	Handle	Ductile Iron
5	Handle Ball	440C Stainless Steel
6	Handle Spring	302 Spring Steel
7	Handle Stub	Carbon Steel
8	Handle Lock Nut	Steel, Zinc Plated
9	Handle Pin	Steel, Zinc Plated
10	Handle Extension	Carbon Steel
11	Body	ASTM A126 Gray Iron
12	Disc	B148 954, Aluminum Bronze
13	Disc O-Ring	Buna N or Viton®
14*	Disc Stud	18-8 Stainless Steel
15	Disc Lock Washer	18-8 Stainless Steel
16	Disc Lock Nut	304 Stainless Steel, ASTM A194 8A

\*Bolt used instead of stud and nut on some sizes. Disc stud seal required on 3" and 4" sizes.



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### Series BG Butterfly Valve

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## Dimensional Data (in., mm)

Size (in.)	Dimension (in., mm)											
	Weight		A		B		C		D		E	
	lbs.	kg	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
2	7.7	3.49	23/16	55.6	8	201.6	4 1/4	108.0	4 3/4	120.7	3	76.2
3	11	4.99	23/4	69.9	8	201.6	4 7/8	123.8	6 1/16	154.0	4 1/16	103.2
4	18	8.16	3 11/16	96.8	8	201.6	5 1/8	130.2	6 3/8	161.9	5 5/16	134.9
6	42	19.05	4 3/4	120.7	13	330.2	7	177.8	9 5/8	244.5	7 3/4	196.9



## KF Series BG Resilient Seated Butterfly Valves

The KF Series BG resilient seated butterfly valve is available in sizes 2" thru 36", wafer or lug style body design. These Butterfly Valves were designed to meet the stringent requirements for Oil & Gas and Industrial applications, or wherever positive shut-off is required for liquids, gases and slurries.

Incorporating 200 psi pressure rating for 2" thru 12" and 150 psi pressure rating for 14" thru 36", the Series BG is constructed of a Ductile Iron Body, Ductile Iron Disc and 416 Stainless Steel Shaft. Optional materials are available to meet your specific application needs. The KF Series BG Butterfly Valve is rated bubble-tight in vacuum service to one inch of Mercury Absolute (29 inches of Mercury Vacuum).

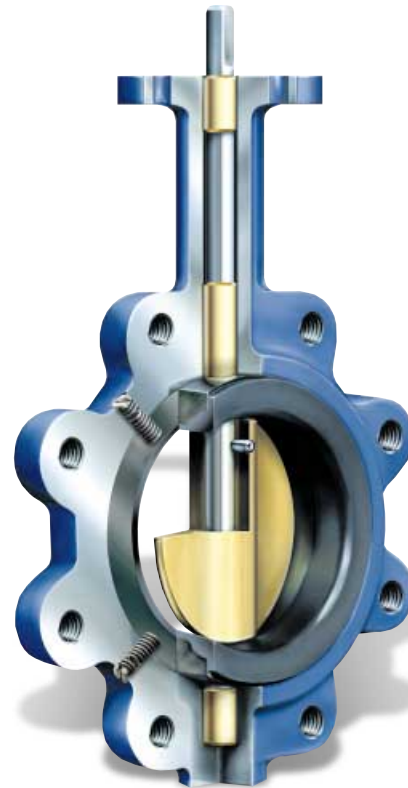
### General Design Features

- Nameplate is permanently attached providing disc, seat, and shaft material specifications for quick reference.
- Disc is attached to shaft by precision taper pins minimizing flow turbulence, resulting in higher Cv ratings.
- All BG Lug Style Valves are suitable for Bi-Directional Dead End Service at full rated pressure.
- Disc edge is machined and polished 360° to assure leak-proof positive shut-off while minimizing torque.
- Phenolic Backed Seat provides additional support making it non-collapsible. No flange gaskets needed. 360° sealing protects components from media and provides primary shaft seal. Available in Buna N and Viton®.
- ISO 5211 Mounting Pad designed for easy adaptation of pneumatic or electric actuators, gear operators and handles. (2"-10" direct mountable)
- Available in Lug and Wafer styles. For use between ANSI 125 and 150 flanges. Face-to-Face dimensions of 2"-14" and 24" valves comply with API 609 and MSS SP67. Valves are designed to accommodate 2" of insulation. Standard body material is A536 65-45-12 Ductile Iron.
- PTFE Bushings (2" - 12"), Stem design utilizes Fiberglass reinforced bushings to provide maximum stem support, centralized alignment of the stem and reduced operating torque.
- Bronze Bushings (14" - 36"), Shaft design utilizes Bronze bushings which provides for maximum shaft support and centralized alignment of one-piece shaft.

The KF Series BG Lug Style Butterfly Valves are suitable for **Dead End Service** at maximum pressure ratings by securing the phenolic backed seat with four screws that anchor the seat to the body. The phenolic back prevents the seat from collapsing or dislodging.

Available seat materials include Buna N and Viton®A. In addition to the above features, the Series BG mounting pad design can easily accommodate actuation.

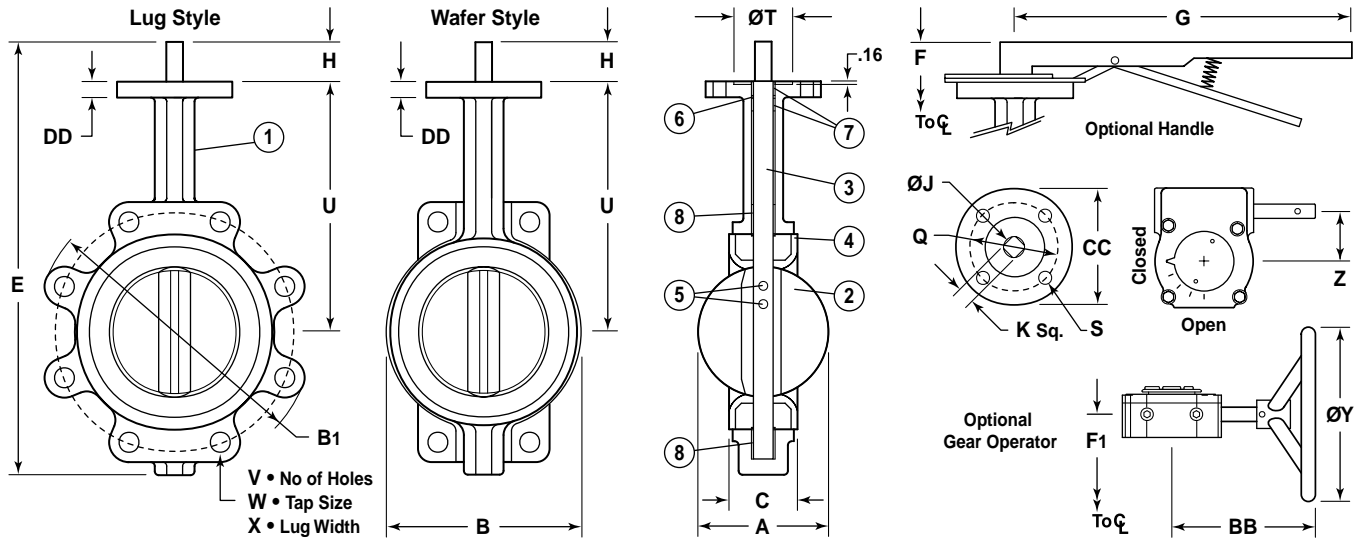
The KF Series BG butterfly valves are designed and manufactured for use with ANSI 125 or 150 Class flanges and to comply with API 609 (except for the 16"-20" face-to-face dimension). All valves are seat-tested at 110% of rated pressure. Compliant to Coast Guard 46CFR Subpart 56.20 Category B.



- The bi-directional shaft seal prevents external contamination of stem area while providing back-up for the primary shaft seal formed by the disc/seat interface.
- The one-piece shaft design delivers positive disc-to-seat location while offering maximum strength. 431 Stainless Steel is standard with Aluminum Bronze, Ductile Iron, and 14"-36" Stainless Steel discs. 316 Stainless Steel shaft is standard with Stainless Steel disc. (2"-12" only).



# KF Series BG Resilient Seated Butterfly Valves



## Dimensional Data (in.), 2"-10"

Size (in.)	Dimension (in.)																						
	A	B	B1	C*	E	F	F1	G	H	J	K	Q	S	T	U	V	W	X	Y	Z	BB	CC	DD
2	2.08	3.94	6.25	1.66	10.75	7.60	7.87	10.50	1.26	.50	.429/.425	1.969	4 x .276	1.388	6.34	4	5/8-11	1.25	6	1.77	7.56	3.03	.50
2.5	2.54	4.72	7.25	1.76	11.65	8.15	8.42	10.50	1.26	.50	.429/.425	1.969	4 x .276	1.388	6.89	4	5/8-11	1.38	6	1.77	7.56	3.03	.50
3	3.10	5.00	7.75	1.78	12.12	8.39	8.66	10.50	1.26	.50	.429/.425	1.969	4 x .276	1.388	7.13	4	5/8-11	1.38	6	1.77	7.56	3.03	.60
4	4.10	6.14	8.75	2.05	13.62	9.13	9.63	10.50	1.26	.63	.429/.425	2.756	4 x .394	2.175	7.87	8	5/8-11	1.50	6	1.77	7.56	3.62	.50
5	4.86	7.48	10.00	2.14	14.65	9.65	10.15	10.50	1.26	.75	.547/.543	2.756	4 x .394	2.175	8.39	8	3/4-10	1.75	12	1.77	7.25	3.62	.50
6	6.13	8.35	11.50	2.19	15.63	10.16	10.66	10.50	1.26	.75	.547/.543	2.756	4 x .394	2.175	8.90	8	3/4-10	1.75	12	1.77	7.25	3.62	.60
8	7.97	10.55	13.75	2.39	18.90	12.01	12.01	14.00	1.77	.88	.665/.660	4.016	4 x .472	2.766	10.24	8	3/4-10	2.13	12	2.60	10.57	5.00	.60
10	9.86	10.79	16.25	2.58	21.26	13.27	13.27	14.00	1.77	1.13	.862/.857	4.016	4 x .472	2.766	11.50	12	7/8-9	2.25	18	2.60	11.37	5.00	.70

\*C Dimension shown is compressed (installed) face-to-face dimension.

## Dimensional Data (mm), 2"-10"

Size (in.)	Dimension (mm)																						
	A	B	B1	C*	E	F	F1	G	H	J	K	Q	S	T	U	V	W	X	Y	Z	BB	CC	DD
2	52.8	100.1	158.8	42.2	273.1	193.0	199.9	266.7	32.3	12.7	10.90/10.80	50.0	4 x 7.0	35.3	161.0	4	5/8-11	31.8	152.4	45.0	192.0	77.0	12.7
2.5	64.5	119.9	184.2	44.7	295.9	207.0	213.9	266.7	32.3	12.7	10.90/10.80	50.0	4 x 7.0	35.3	175.0	4	5/8-11	35.1	152.4	45.0	192.0	77.0	12.7
3	78.7	127.0	196.9	45.2	307.8	213.1	220.0	266.7	32.3	12.7	10.90/10.80	50.0	4 x 7.0	35.3	181.1	4	5/8-11	35.1	152.4	45.0	192.0	77.0	15.2
4	104.1	156.0	222.3	52.1	345.9	231.9	244.6	266.7	32.3	16.0	10.90/10.80	70.0	4 x 10.0	55.2	199.9	8	5/8-11	38.1	152.4	45.0	192.0	91.9	12.7
5	123.4	190.0	254.0	54.4	372.1	245.1	257.8	266.7	32.3	19.1	13.89/13.79	70.0	4 x 10.0	55.2	213.1	8	3/4-10	44.5	304.8	45.0	184.2	91.9	12.7
6	155.7	212.1	292.1	55.6	397.0	258.1	270.8	266.7	32.3	19.1	13.89/13.79	70.0	4 x 10.0	55.2	226.1	8	3/4-10	44.5	304.8	45.0	184.2	91.9	15.2
8	202.4	268.0	349.3	60.7	480.1	305.1	305.1	355.6	45.0	22.4	16.89/16.76	102.0	4 x 12.0	70.3	260.1	8	3/4-10	54.1	304.8	66.0	268.5	127.0	15.2
10	250.4	274.1	412.8	65.5	540.0	337.1	337.1	355.6	45.0	28.7	21.89/21.77	102.0	4 x 12.0	70.3	292.1	12	7/8-9	57.2	457.2	66.0	268.5	127.0	17.8

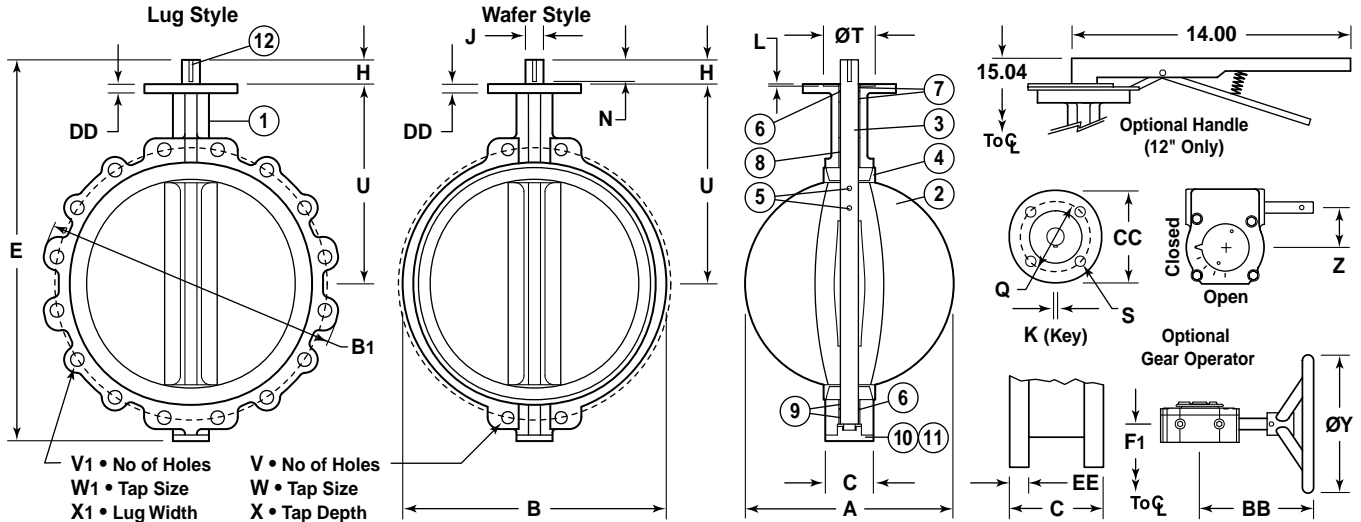
\*C Dimension shown is compressed (installed) face-to-face dimension.

## Parts List

Part No.	Description	Material
1	Body	Ductile Iron, ASTM A536 65-45-12
2	Disc	Ductile Iron, Aluminum Bronze, 316SS
3	Shaft	431SS, 316SS
4	Seat	Buna N, Viton®
5	Disc Pin(s)	316SS
6	Weather Seal	Buna
7	Short Bushings	PTFE Lined Composite
8	Long Bushings	PTFE Lined Composite



# KF Series BG Resilient Seated Butterfly Valves



## Dimensional Data (in.), 12"-36"

Size (in.)	Dimension (in.)																										
	A	B	B1	C*	E	F1	H	J	K	L	N	Q	S	T	U	V	V1	W	W1	X	X1	Y	Z	BB	CC	DD	EE
12	11.87	15.88	19.00	3.03	24.57	15.26	1.77	1.25	.25 sq.	.16	1.00	4.02	4 x .47	2.77	13.27	—	12	—	7/8-9	—	2.25	16	3.07	13.40	5.80	.80	—
14	13.14	17.16	20.75	3.01	26.77	17.11	1.77	1.25	.25 sq.	.16	1.00	4.02	4 x .47	2.77	14.49	4	12	1.06	1-8	thru	2.25	16	4.72	16.79	5.80	.80	—
16	15.36	19.21	23.00	3.41	29.94	18.37	2.02	1.30	.31 sq.	.20	1.57	5.51	4 x .71	3.95	15.75	4	16	1.06	1-8	thru	3.38	24	4.72	17.54	7.80	.80	—
18	17.37	21.22	25.00	4.16	31.55	19.56	2.02	1.50	.37 sq.	.20	1.81	5.51	4 x .71	3.95	16.61	4	16	1.25	1 1/8-7	thru	4.00	18	4.72	14.28	7.80	.80	—
20	19.35	23.35	27.75	5.19	35.65	21.85	2.53	1.62	.37 sq.	.20	1.81	5.51	4 x .71	3.95	18.90	4	20	1.25	1 1/8-7	thru	5.00	24	4.72	14.78	7.80	1.00	—
24	23.33	32.12	32.75	5.98	42.97	25.36	2.76	2.00	.50 sq.	.24	2.36	6.50	4 x .91	5.13	22.13	4	20	1.38	1 1/4-7	thru	5.75	12	7.09	14.73	11.00	1.00	—
30	29.29	38.75	38.75	6.57	50.63	29.21	3.25	2.50	.63 sq.	.24	2.63	10.00	8 x .71	7.89	25.98	4	28	1 1/4-7	1 1/4-7	2.00	thru	18	7.09	15.53	11.80	1.10	2.13
36	34.04	46.00	46.00	7.99	58.82	31.85	4.65	2.95	.79 sq.	.24	3.94	10.00	8 x .71	7.89	28.35	4	32	1 1/2-6	1 1/2-6	2.25	thru	18	8.86	18.50	11.80	1.30	2.36

\*C Dimension shown is compressed (installed) face-to-face dimension.

## Dimensional Data (mm), 12"-36"

Size (in.)	Dimension (mm)																											
	A	B	B1	C*	E	F1	H	J	K	L	N	Q	S	T	U	V	V1	W	W1	X	X1	Y	Z	BB	CC	DD	EE	
12	301.5	403.4	482.6	77.0	624.1	387.6	45.0	31.8	6.4 sq.	4.1	25.4	102.1	4 x 11.9	70.4	337.1	—	12	—	7/8-9	—	57.2	406.4	78.0	340.4	147.3	20.3	—	
14	333.8	435.9	527.1	76.5	680.0	434.6	45.0	31.8	6.4 sq.	4.1	25.4	102.1	4 x 11.9	70.4	368.0	4	12	26.9	1-8	thru	57.2	406.4	119.9	426.5	147.3	20.3	—	
16	390.1	487.9	584.2	86.6	760.5	466.6	51.3	33.0	7.9 sq.	5.1	39.9	140.0	4 x 18.0	100.3	400.1	4	16	26.9	1-8	thru	85.9	609.6	119.9	445.5	198.1	20.3	—	
18	441.2	539.0	635.0	105.7	801.4	496.8	51.3	38.1	9.4 sq.	5.1	46.0	140.0	4 x 18.0	100.3	421.9	4	16	31.8	1 1/8-7	thru	101.6	457.2	119.9	362.7	198.1	20.3	—	
20	491.5	593.1	704.9	131.8	905.5	555.0	64.3	41.1	9.4 sq.	5.1	46.0	140.0	4 x 18.0	100.3	480.1	4	20	31.8	1 1/8-7	thru	127.0	609.6	119.9	375.4	198.1	25.4	—	
24	592.6	815.8	831.9	151.9	1091.4	644.1	70.1	50.8	12.7 sq.	6.1	59.9	165.1	4 x 23.1	130.3	562.1	4	20	35.1	1 1/4-7	thru	146.1	304.8	180.1	374.1	279.4	25.4	—	
30	744.0	984.3	984.3	166.9	1286.0	741.9	82.6	63.5	16.0 sq.	6.1	66.8	254.0	8 x 18.0	200.4	659.9	4	28	1 1/4-7	1 1/4-7	50.8	thru	457.2	180.1	394.5	299.7	27.9	54.1	
36	864.6	1168.4	1168.4	202.9	1494.0	809.0	118.1	74.9	20.1 sq.	6.1	100.1	254.0	8 x 18.0	200.4	720.1	4	32	1 1/2-6	1 1/2-6	57.2	thru	457.2	225.0	469.9	299.7	33.0	59.9	

\*C Dimension shown is compressed (installed) face-to-face dimension.

## Parts List

Part No.	Description	Material
1	Body	Ductile Iron, ASTM A536 65-45-12
2	Disc	Ductile Iron, Aluminum Bronze, 316SS
3	Shaft	431SS, 316SS (12" only)
4	Seat	Buna N, Viton®
5	Disc Pin(s)	316SS
6	Weather Seal	Buna

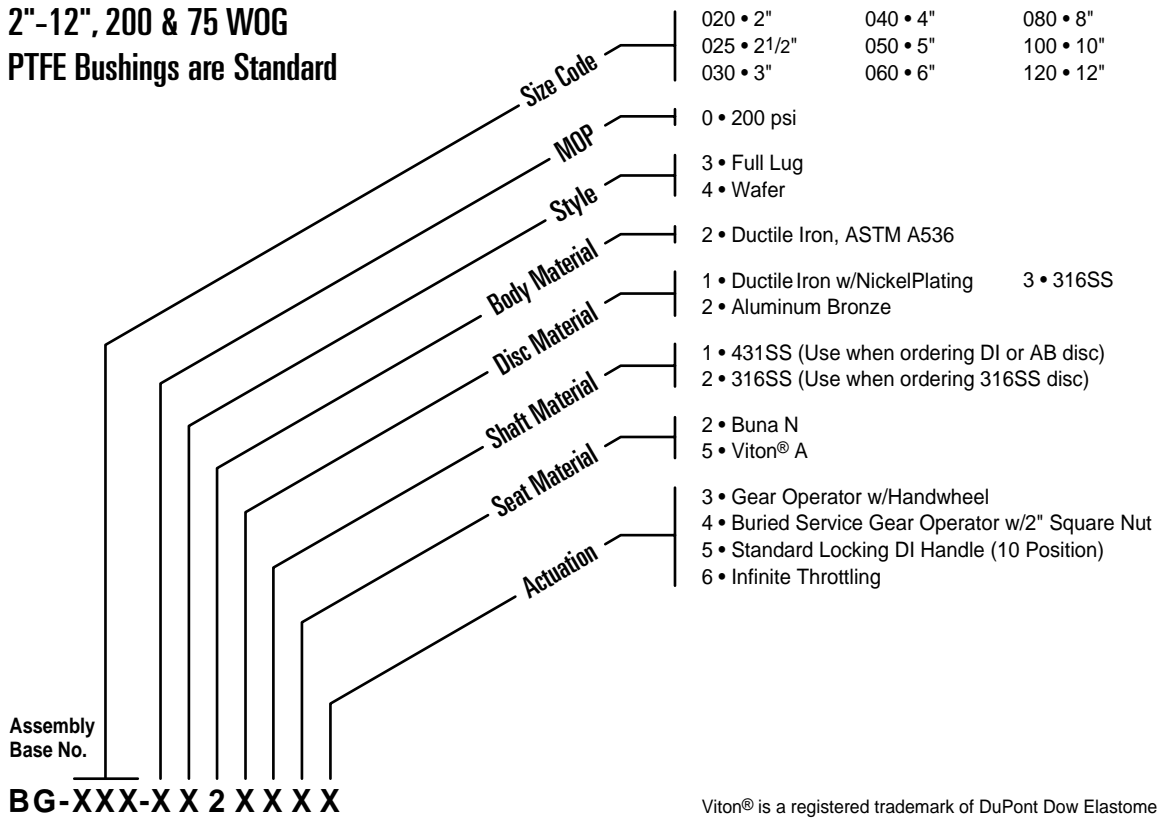
Part No.	Description	Material
7	Short Bushings	PTFE Lined Composite (12") Luberized Bronze (14"-36")
8	Long Bushings	
9	Bottom Bushings	
10	End Cap	Carbon Steel
11	Screw	Carbon Steel
12	Key	Carbon Steel



# KF Series BG Resilient Seated Butterfly Valves

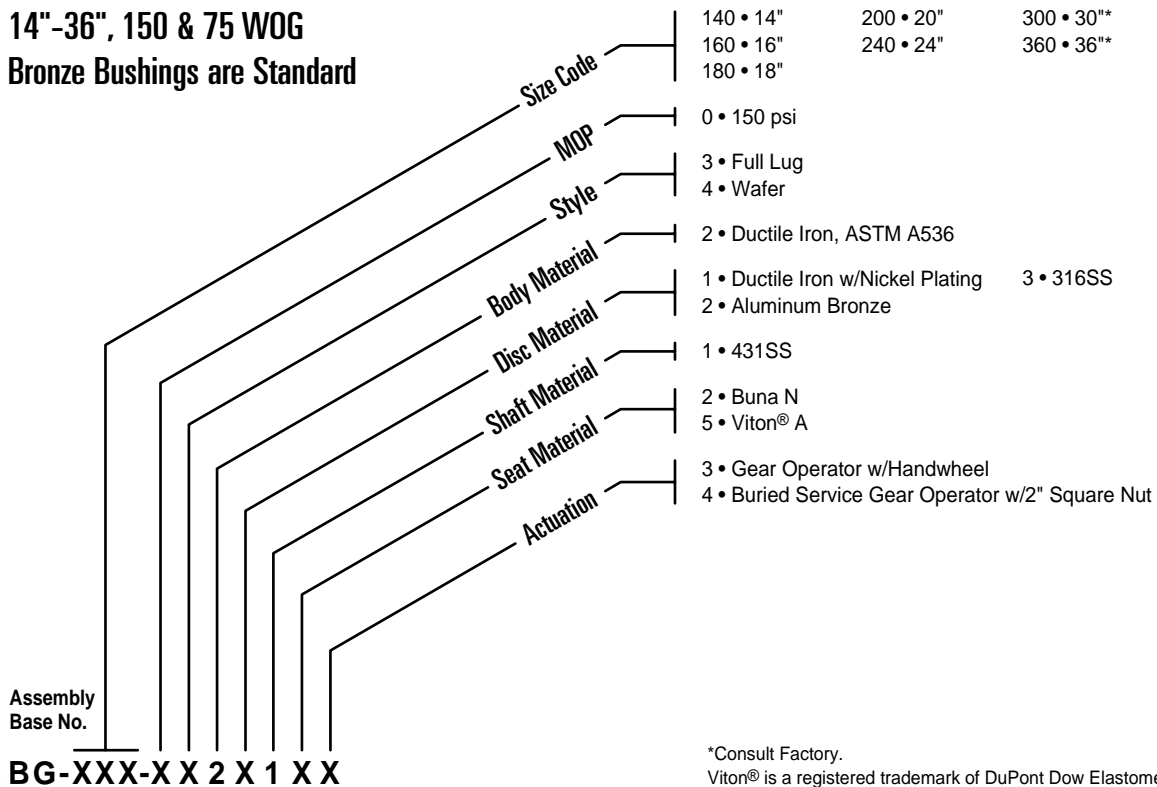
## Part Number Code

2"-12", 200 & 75 WOG  
PTFE Bushings are Standard



Viton® is a registered trademark of DuPont Dow Elastomers.

14"-36", 150 & 75 WOG  
Bronze Bushings are Standard



\*Consult Factory.

Viton® is a registered trademark of DuPont Dow Elastomers.



# Series BG Butterfly Valves, Actuation and Engineering Data

## Gear Operators

Size (in.)	Weatherproof	Buried Service
2-3	GA-02F05A1061	GA-02F05A1993
4	GA-02F07A1061	GA-02F07A1993
5-6	GA-02F07B1121	GA-02F07B1993
8	GA-03F10A1121	GA-03F10A1993
10	GA-03F10B1181	GA-03F10B1993
12	GA-05F10C9161	GA-05F10C9993
14	GA-08F10C9161	GA-08F10C9993

Size (in.)	Weatherproof	Buried Service
16	GA-08F14A9241	GA-08F14A9993
18	GA-29F14B9181	GA-29F14B9993
20	GA-29F14C9241	GA-29F14C9993
24	GA-35F16A9121	GA-35F16A9993
30	GA-35F25A9181	GA-35F25A9993
36	GA-45F25B9181	GA-45F25B9993

## Operating Torque (in-lbs.)

Valve Size (in.)	200 psi (150 psi 14"-36")	
	Lubricating Service	Non-Lubricating Service
2	129	206
2 1/2	181	301
3	260	431
4	406	670
5	636	1038
6	897	1481
8	1581	2623
10	2660	4399

Valve Size (in.)	200 psi (150 psi 14"-36")	
	Lubricating Service	Non-Lubricating Service
12	4107	6603
14	4819	7955
16	6847	9546
18	9452	15,571
20	12,296	20,271
24	20,077	33,057
30	38,280	58,470
36	54,281	82,973

Note: Lubricating (previously defined as wet) service applies only where a non-drying "oily" media is present. Non-lubricating (previously defined as dry) service applies where the media does not lubricate the elastomer of the seat. Water service in general is regarded as non-lubricating.

## Mounting Kit Part Numbers for M5 Actuator

Valve Size (in.)	Part No. Prefix	PA/PAS Model No.								
		100	200	300	500,700,1030	1400	2200, 2900	4100	5800	9000
2-3	1272-	02F0501921	02F0502911	02F0502911	02F0505911	02F0514921	—	—	—	—
4	1272-	—	04F0702921	04F0703911	04F0705911	04F0714911	04F0714911	—	—	—
5	1272-	—	—	05F0703911	05F0705911	05F0714911	05F0714911	05F0741921	—	—
6	1272-	—	—	05F0703911	05F0705911	05F0714911	05F0714911	05F0741921	—	—
8	1272-	—	—	—	08F1005921	08F1014911	08F1014911	08F1041911	08F1041911	—
10	1272-	—	—	—	—	10F1014911	10F1014911	10F1041911	10F1041911	10F1090921

## Flow Coefficients (C<sub>v</sub>)

Size (in.)	Bore	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
2	2.038	0.06	2	3	5	7	11	15	21	27	36	44	57	70	88	105	110	115
2 1/2	2.495	0.1	3	6	9	12	19	25	35	45	60	75	97	119	149	178	187	196
3	3.060	0.2	5	9	14	18	29	39	55	70	93	116	150	183	229	275	289	302
4	4.066	0.3	9	17	27	36	57	78	109	139	185	230	297	364	455	546	573	600
5	4.811	0.5	15	29	45	61	97	133	185	237	315	392	506	620	775	930	976	1022
6	6.065	0.8	23	45	70	95	150	205	286	366	486	605	782	958	1198	1437	1508	1579
8	7.911	2	46	89	139	188	298	408	568	727	965	1202	1553	1903	2379	2854	2995	3136
10	9.801	3	77	151	236	320	507	694	966	1237	1642	2047	2644	3240	4050	4859	5100	5340
12	11.812	4	119	234	365	495	784	1072	1492	1911	2537	3162	4084	5005	6256	7507	7879	8250
14	13.078	6	172	338	527	715	1132	1549	2155	2761	3665	4568	5899	7230	9037	10,844	11,381	11,917
16	15.298	8	236	464	724	983	1557	2130	2964	3797	5040	6282	8112	9942	12,428	14,913	15,651	16,388
18	17.310	11	313	615	959	1302	2062	2822	3925	5028	6674	8320	10,744	13,168	16,460	19,752	20,729	21,705
20	19.294	14	403	791	1233	1674	2651	3628	5047	6465	8582	10,698	13,815	16,931	21,164	25,396	26,652	27,908
24	23.271	22	622	1222	1905	2587	4096	5605	7797	9989	13,259	16,528	21,343	26,157	32,697	39,236	41,176	43,116
30	29.231	35	981	1928	3005	4082	6463	8844	11,685	14,526	18,371	22,216	28,625	35,033	43,792	52,550	55,335	58,121
36	33.983	47	1326	2606	4061	5517	8735	11,953	16,370	20,788	27,139	33,491	43,019	52,546	65,539	78,531	82,453	86,375



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