

HIGH PERFORMANCE BUTTERFLY VALVES
750/751 WCB CARBON STEEL SERIES
850/851 CF8M STAINLESS STEEL SERIES
2" Through 12" Sizes, Class 150 Double Offset Valve



High Performance Butterfly Valve Features & Benefits

High Performance Butterfly Valves

Delta T High Performance Butterfly Valves are designed for demanding applications. Unique seat and body construction allows for easy configurability and maintenance, without compromising shut off capability or service life.

Series Designations

750 – CL150 WCB Carbon Steel Wafer Body

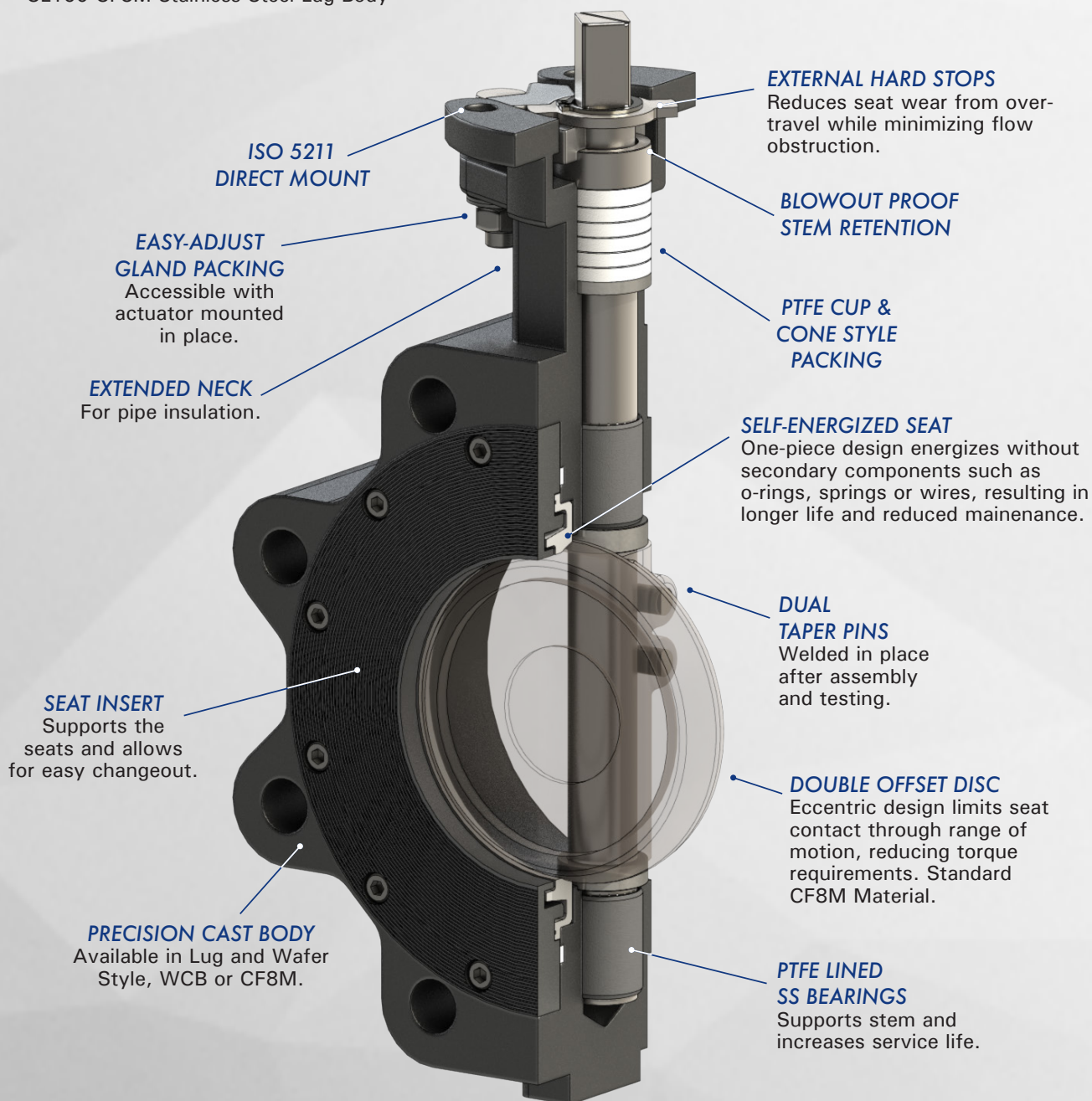
751 – CL150 WCB Carbon Steel Lug Body

850 – CL150 CF8M Stainless Steel Wafer Body

851 – CL150 CF8M Stainless Steel Lug Body

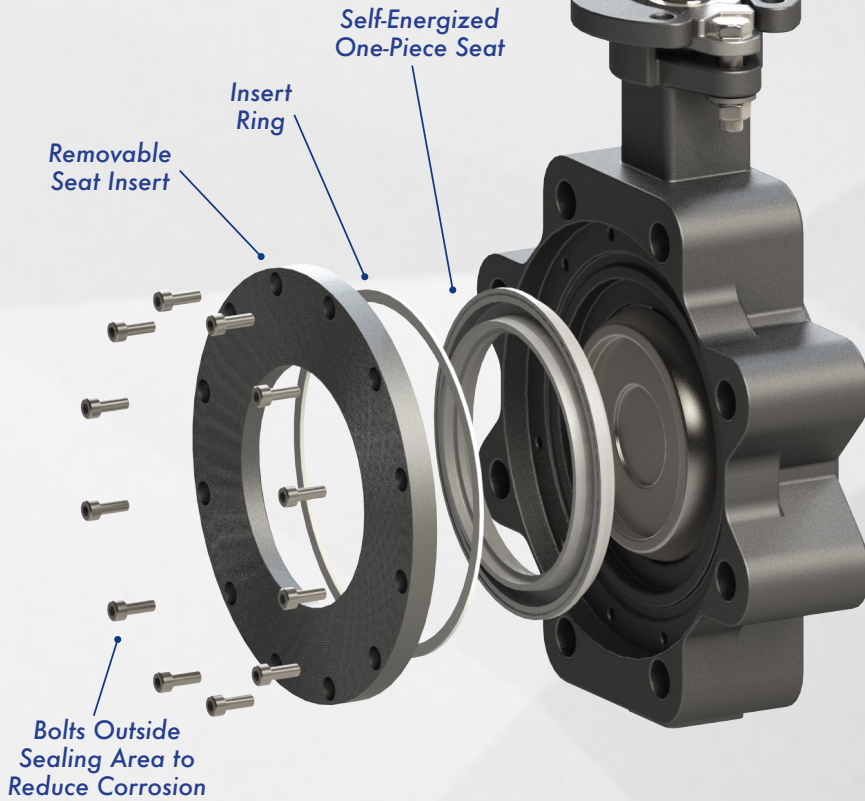
Features & Benefits

ANSI Class 150 Lug & Wafer Style
WCB or CF8M Body, Stainless Disc & Stem
15% Glass RTFE Standard
100% Virgin PTFE, TFM 1600 Seats Optional
Fire-Safe Seats Coming Soon
ISO 5211 Direct Mount
Double Offset “Secure Arc Seal” Technology
Bubble Tight Bi-Directional Shutoff
Suitable for Dead-End Service
Blow-out Proof Stem

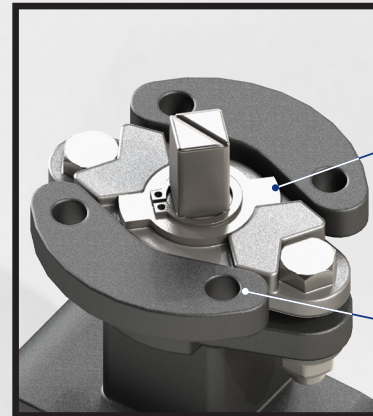


Easy Seat Changeout

Removable seat insert allows for quick seat changeout with minimal replacement parts, reducing maintenance time.



External Hard Stops

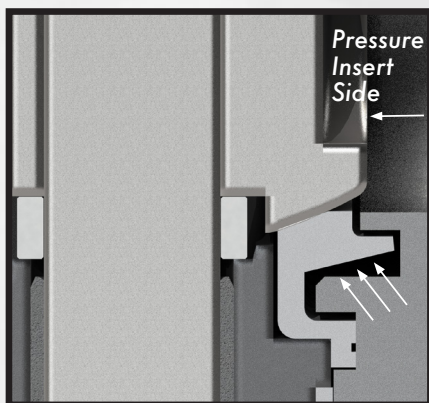


Less Flow Obstruction

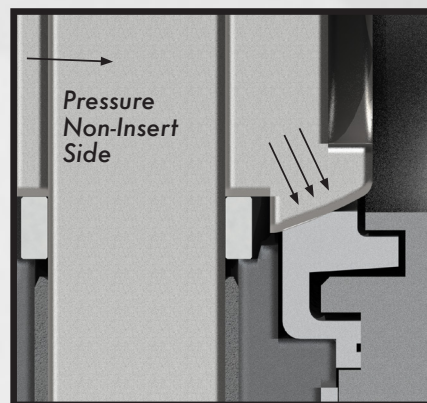


SAS Technology™ (Secure Arc Seal)

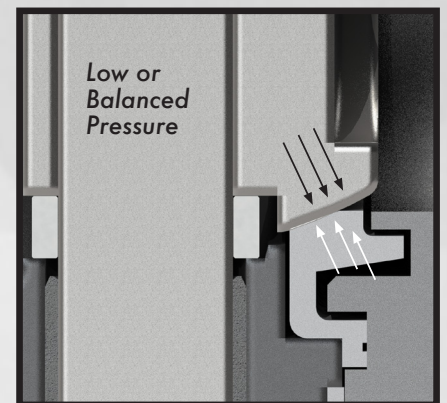
Secure Arc Seal Technology combines the benefits of an eccentric, double-offset disc with a one-piece, self-energizing seat design. The eccentric seating motion limits sliding contact between the disc and seat, reducing wear and torque requirements. The self-energizing seat is pressure assisted to ensure bubble tight sealing in both directions and does not rely on secondary components such as O-rings or springs, which simplifies maintenance and extends life.



Pressure on the insert side forces the seat harder into the disc, further improving the seal. The higher the pressure, the tighter the seal.



Pressure on the non-insert side forces the disc further into the self-energized seat, causing even tighter shutoff. The seat is contained securely by the seat insert to prevent excessive deflection.



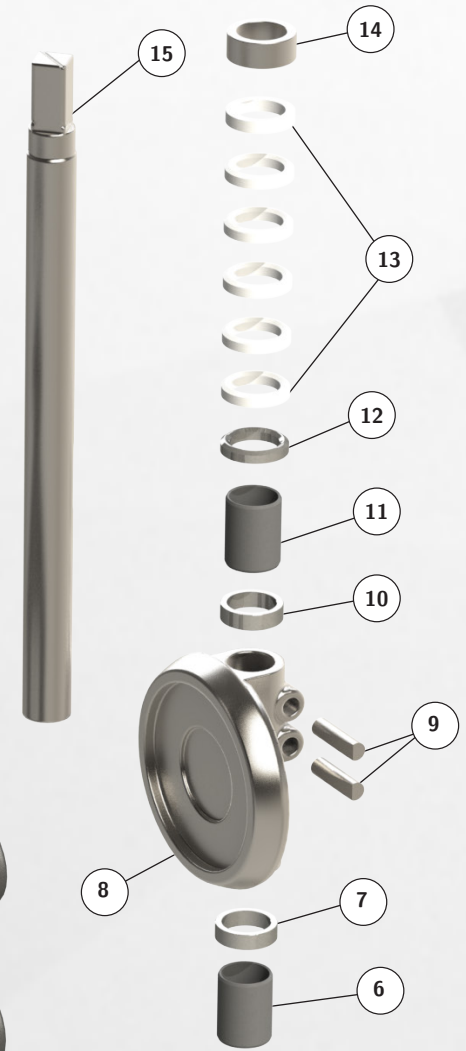
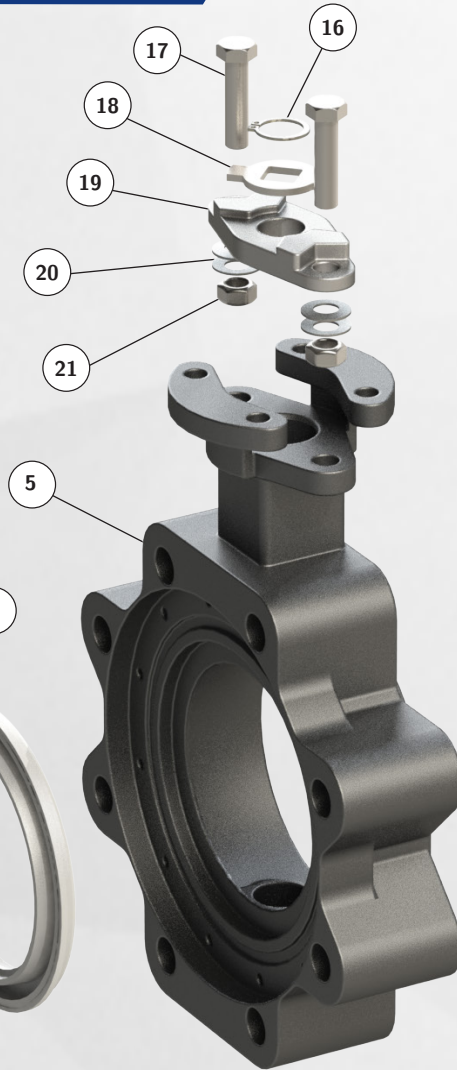
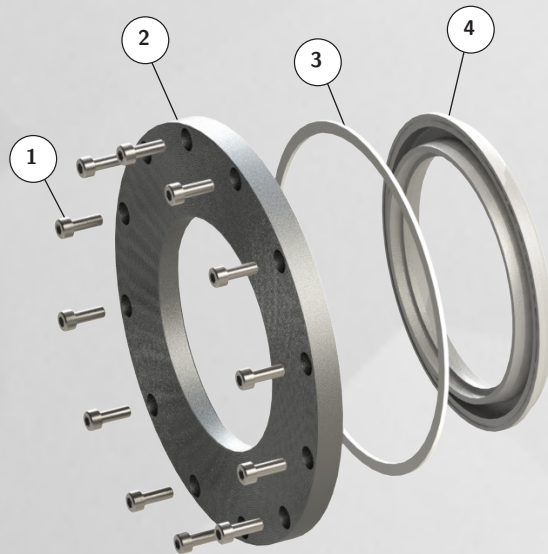
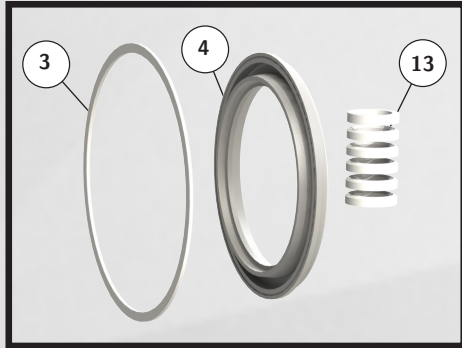
In the closed position, the self-energized seat is deflected by the disc, maintaining a positive seal by pushing back against the disc.

High Performance Butterfly Valve

Exploded View & Bill of Materials

Repair Kits Parts

Includes Insert Ring, Seat and Packing.



Bill of Materials

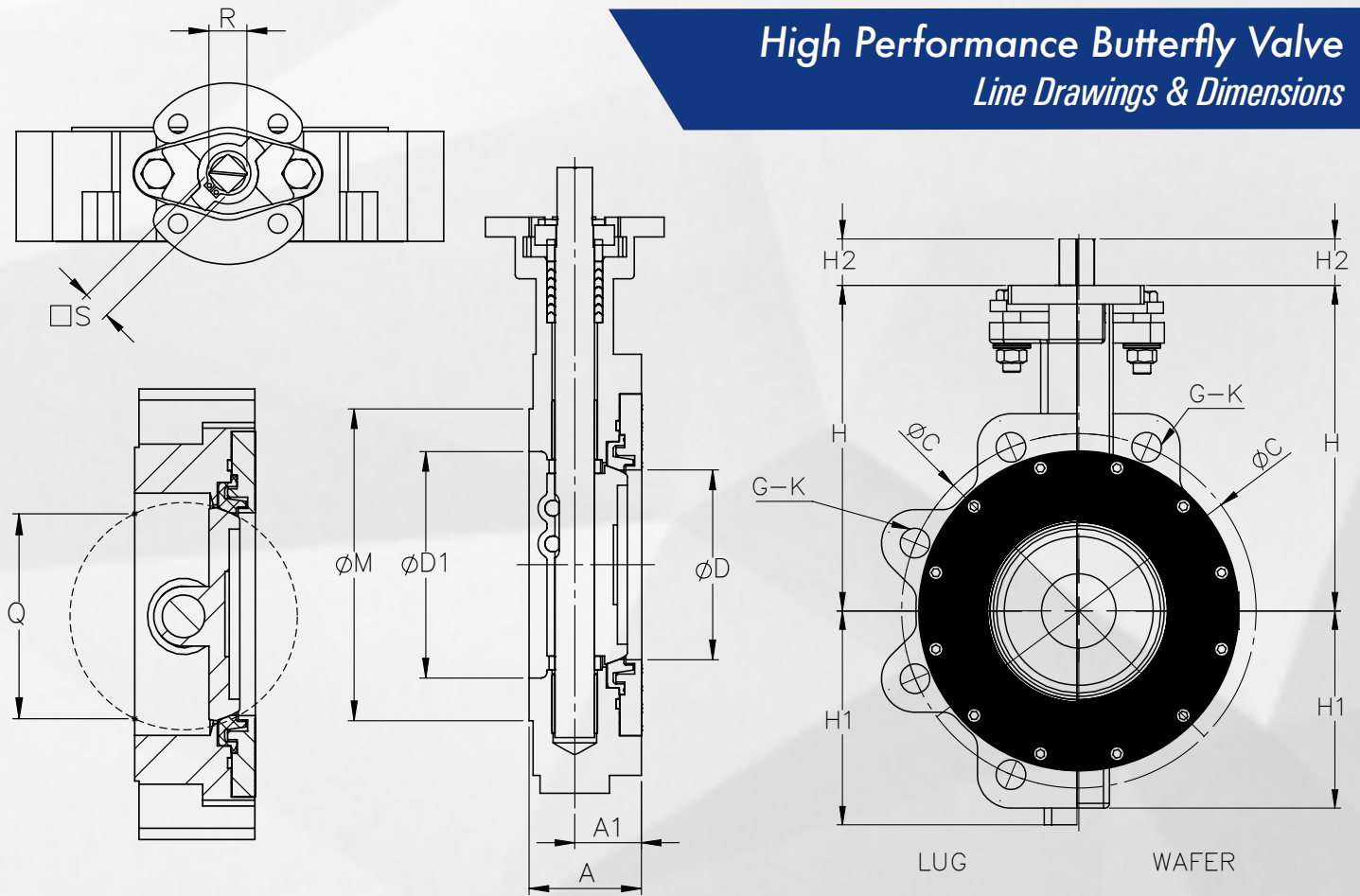
Item	Description	Materials
1	Insert Bolts	A193 GR.8
2	Seat Insert	ASTM A29 GR1045 (WCB) ASTM A240 GR316 (CF8M)
3	Insert Ring	PTFE
4	Seat	TFM/RTFE/PTFE
5	Body	A216 WCB or A351 CF8M
6	Lower Stem Bearing	SS/PTFE Lined
7	Lower Retaining Ring	304 SS
8	Disc	A351 CF8M
9	Disc Taper Pins	17-4 PH
10	Lower Retaining Ring	304SS

Item	Description	Materials
11	Upper Stem Bearing	SS/PTFE Lined
12	Packing Ring	304 SS
13	Packing	PTFE
14	Upper Retaining Ring	304 SS
15	Stem	17-4 PH
16	Snap Ring	W1-8
17	Gland Bolts	A193 GR.8
18	Stopper Plate	304 SS
19	Packing Gland	A351 CF8M
20	Spring Washers	301 SS
21	Gland Nuts	A194 GR.8



High Performance Butterfly Valve

Line Drawings & Dimensions



High Performance Butterfly Valves

Size	ISO 5211	A	A1	C	ØD	ØD1	G	K	H	H1	H2	M	Q	R	□S	Handle	Notch Plate
ANSI DN																	
2"	F07	1.81	1.14	4.75	1.81	2.28	5/8"-11 UNC	4	5.00	2.56	1.22	3.62	1.80	0.55	0.43	01	F07 HP Notch Plate
50		46	29	120.7	46	58			127	65	31	92	45.75	14	11		
2.5"	F07	1.93	1.06	5.50	2.32	2.72	5/8"-11 UNC	4	5.51	3.35	1.18	4.13	1.97	0.56	0.43		
65		49	27	139.5	59	69			140	85	30	105	50.13	14	11		
3"	F07	2.01	1.18	6.00	2.87	3.31	5/8"-11 UNC	4	5.91	3.74	1.30	5.00	2.80	0.71	0.55	02	
80		51	30	152.4	73	84			150	95	33	127	71	18	14		
4"	F07	2.22	1.32	8.50	3.76	4.17	5/8"-11 UNC	8	6.89	4.53	.98	6.18	3.71	0.74	0.55	03	F10 HP Notch Plate
100		56.5	33.5	190.5	95.5	106			175	115	25	157	94.19	19	14		
5"	F10	2.32	1.34	8.50	4.37	4.72	3/4"-10 UNC	8	7.87	5.68	1.30	7.32	4.21	0.74	0.55		
125		59	34	215.9	111	120			200	144.2	33	186	106.88	19	14		
6"	F10	2.36	1.38	9.50	5.59	6.06	3/4"-10 UNC	8	8.46	6.34	1.36	8.50	5.53	0.74	0.55		
150		60	35	241.5	142	154			215	161	34.5	216	140.36	19	14		
8"	F10	2.56	1.50	11.75	7.48	7.95	3/4"-10 UNC	8	9.65	7.38	1.32	10.67	7.48	1.02	0.75	04	
200		65	38	298.5	190	202			245	187.4	33.6	271	189.97	26	19		
10"	F12	2.83	1.655	14.25	9.29	9.76	7/8"-9 UNC	12	11.34	8.54	2.68	12.76	9.29	1.18	0.87	05	F12 HP Notch Plate
250		72	42	362	236	248			288	217	68	324	236	30	22		
12"	F12	3.27	1.85	17.00	11.11	11.65	7/8"-9 UNC	12	12.99	10.16	2.70	15.00	11.08	1.42	1.06	06	
300		83	47	431.8	282.2	296			330	258	68.5	381	281.33	36	27		

750/751 & 850/851 Butterfly Valves

Weights, Torques, & Service Factor Ratings

Weights

Size		750 Wafer		751 Lug		850 Wafer		851 Lug		Individual Handle		Individual Gear Operator	
ANSI	DN	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
2"	50	6.83	3.10	8.88	4.03	6.83	3.10	8.88	4.03	1.35	0.613	2.8	1.3
2.5"	65	9.46	4.29	11.64	5.28	9.46	4.29	11.64	5.28	1.35	0.613	2.8	1.3
3"	80	11.79	5.35	13.76	6.24	11.79	5.35	13.76	6.24	1.31	0.595	2.8	1.3
4"	100	19.51	8.85	26.39	11.97	19.51	8.85	26.39	11.97	1.31	0.595	2.8	1.3
5"	125	27.76	12.59	36.57	16.59	27.76	12.59	36.57	16.59	3.70	1.678	5.6	2.5
6"	150	32.17	14.59	42.61	19.33	32.17	14.59	42.61	19.33	3.70	1.678	5.6	2.5
8"	200	50.07	22.71	65.61	29.76	50.07	22.71	65.61	29.76	3.25	1.476	11.5	5.2
10"	250	80.00	36.29	102.21	46.36	80.00	36.29	102.21	46.36	7.57	3.432	11.5	5.2
12"	300	129.21	58.61	162.92	73.90	129.21	58.61	162.92	73.90	7.53	3.414	22.2	10.1



*Carbon Steel WG Valve Shown
Model # 080-751-BST

Seating Torques (in-lbs)

Size (in)	SHAFT DOWNSTREAM				SHAFT UPSTREAM			
	Pressure Differential (ΔP in PSI)				Pressure Differential (ΔP in PSI)			
	75 ΔP	150 ΔP	225 ΔP	285 ΔP	75 ΔP	150 ΔP	225 ΔP	285 ΔP
2	286	295	304	311	290	302	315	325
2-1/2	329	342	355	365	332	347	363	375
3	397	416	435	450	397	416	435	450
4	559	600	642	675	559	600	642	675
5	589	662	735	793	610	705	799	875
6	1021	1125	1230	1313	1057	1197	1338	1450
8	1360	1550	1740	1892	1441	1712	1983	2200
10	3598	3944	4290	4566	3778	4304	4830	5250
12	3767	4430	5093	5624	3866	4628	5390	6000

The torque values listed above do not include a safety factor. It is recommended that a safety factor of 20% be added to these numbers for standard self-lubricating service. For water, dry air, solvents, abrasives, powder, and dust service, see service factor guide chart below.

Service Factor Rating

Service Condition	Service Type	Media Type	Safety Factor	Multiplier
1	Ideal	Lubricating Oil	20%	1.20
2	Normal	Water	30%	1.30
3	Severe	Dry Air, Solvents	50%	1.50
4	Extreme	Abrasives	100%	2.00

This service factor chart is a suggested guide only. Actual service conditions will vary due to dynamic flow conditions and may require adjustments to the applied safety factor.



750/751 & 850/851 Butterfly Valves

Ordering Guidelines, Trim Codes, & Cv Values

Ordering Guideline

Size	Series	Trim	Operator
<input type="text"/>	- <input type="text"/>	- <input type="text"/>	- <input type="text"/>
020 = 2" 025 = 2.5" 030 = 3" 040 = 4" 050 = 5" 060 = 6" 080 = 8" 100 = 10" 120 = 12"	750 = CL150 WCB Wafer 751 = CL150 WCB Lug 850 = CL150 CF8M Wafer 851 = CL150 CF8M Lug	See Chart Below 	BST = Bare Stem HND = Lever Handle GOP = Manual Gear Operator HNS = 304SS Lever Handle GOS = 316SS Gear Operator ILP = Lever Handle W/ ILP

Trim Codes	Disc	Stem	Seat	Temperature Range	
821	CF8M	17-4	15% Glass RTFE	-20°F to 400°F	-29°C to 204°C
822	CF8M	316 SS	15% Glass RTFE	-20°F to 400°F	-29°C to 204°C
823	CF8M	17-4	100% Virgin PTFE	-20°F to 350°F	-29°C to 177°C
824	CF8M	316 SS	100% Virgin PTFE	-20°F to 350°F	-29°C to 177°C
825	CF8M	17-4	TFM 1600	-20°F to 500°F	-29°C to 260°C
826	CF8M	316 SS	TFM 1600	-20°F to 500°F	-29°C to 260°C
827	CF8M	17-4	Fire-Safe	-20°F to 500°F	-29°C to 260°C
828	CF8M	316 SS	Fire-Safe	-20°F to 500°F	-29°C to 260°C

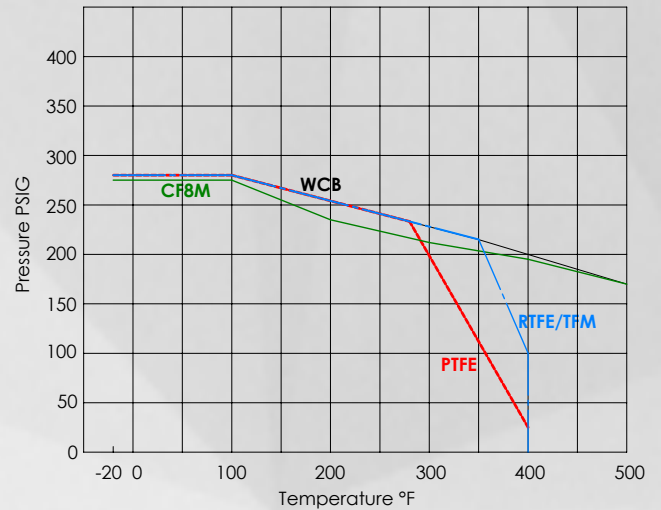
Cv Values

Valve Sizing Coefficients (US-GPM/ΔP)

Size (in)		Disc Position							
ANSI	DN	20°	30°	40°	50°	60°	70°	80°	90°
2"	50	5	8	12	18	29	43	60	62
2.5"	65	7	12	18	28	44	67	92	96
3"	80	12	21	31	48	75	113	157	163
4"	100	29	50	74	115	180	270	374	388
5"	125	49	84	124	192	300	450	623	647
6"	150	81	141	207	321	502	755	1045	1085
8"	200	164	283	416	645	1009	1517	2099	2180
10"	250	235	407	598	926	1449	2178	3014	3130
12"	300	370	641	942	1459	2283	3431	4748	4930

The valve sizing coefficient is referred to as "Cv" and is the rate of water flow in gallons per minute (GPM) through a given opening at a pressure drop (ΔP) of 1 PSI at standard room temperature. The recommended angle of opening for valve sizing is between 50° and 70° open.

Pressure Rating

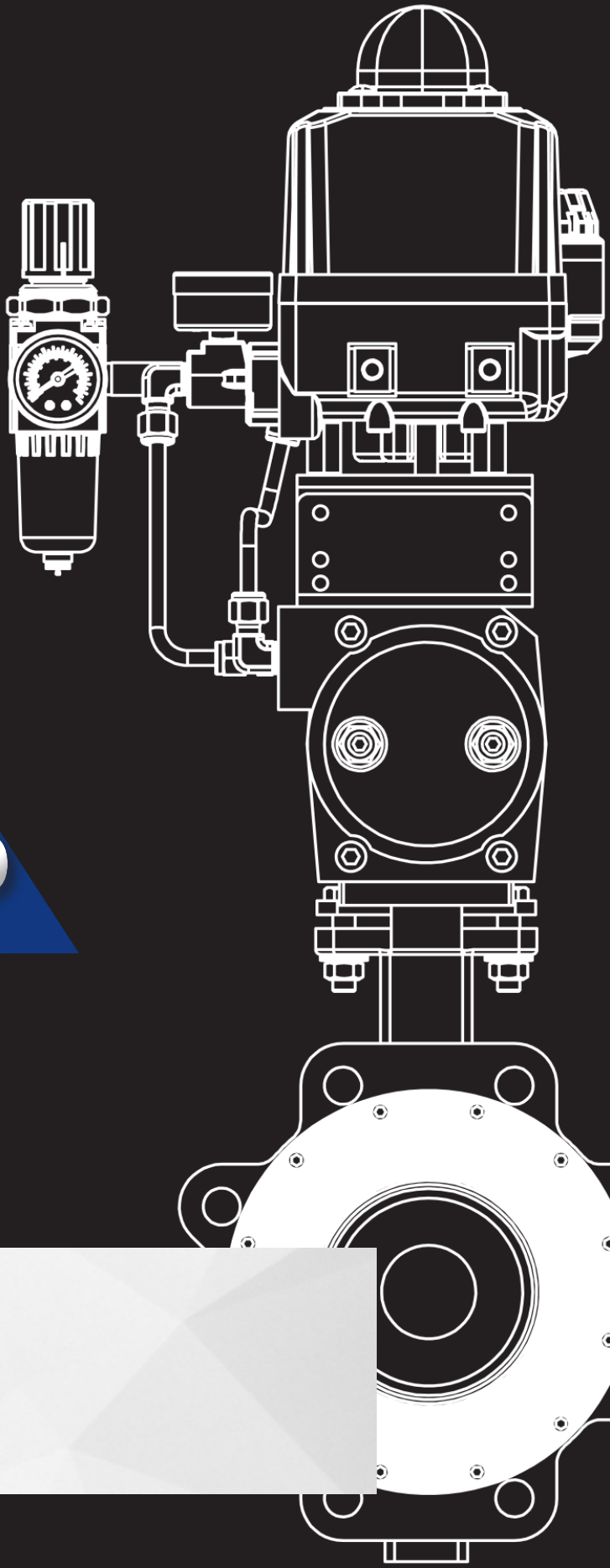


Standards and Compliance

ISO 5211 Industrial Valves Part-Turn Actuator Attachments	ASME B16.5 Steel Pipe Flanges and Flange Fittings	ASME B16.34 Steel Valves	MSS-SP-6 Finishes For Pipe Flanges	MSS-SP-25 Standard Markings For Valves	MSS-SP-68 High Pressure Butterfly Valves with Offset Design
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THE BRAND
BY WHICH
ALL OTHERS ARE
MEASURED

