

Offset Disc – Butterfly Valve Series 8700



Series 8700 butterfly valve with 10 position lever lock

Series 8700 butterfly valve with gear operator

The Series 8700 Gruvlok Offset Disc Butterfly Valve is designed for use in commercial grooved-end piping systems 2" through 8".

The Offset Disc design allows for low operating torque while providing a bubble tight seal from full vacuum to 400psi when the valve is closed. The valve is rated for dead-end service to a full pressure rating of 400 psi.

The valve body is a two-piece bolted design that is fully field serviceable. The body has an integral mounting base compliant with ISO 5211 for gear operator or handle actuation, while providing room for a minimum of 2" of pipe insulation.

The valve is designed and manufactured to meet or exceed the requirements of MSS SP-67.



2" - 8" Series 8700

Contact an ASC Engineered Solutions Sales Representative for specific recommendations on seat material.

Material Specifications

Body

Ductile Iron conforming to ASTM A 536, Grade 65-45-12

End Cap

Ductile Iron conforming to ASTM A 536, Grade 65-45-12

Disc

Ductile Iron conforming to ASTM A 536 Grades 65-45-12 with electroless nickel plating. Optional: Stainless Steel conforming to ASTM A351 Gr CF8M

Seat Ring

Properties as specified in accordance with ASTM D 2000.

- Grade EP (EPDM): Service Temperature Range -40°F to +250°F (-40°C to +121°C)

Recommended for water service, dilute acids, alkalis, oil-free air and many chemical services. Not For Use in Petroleum Services.

- Grade T (Nitrile): Service Temperature Range -20°F to +180°F (-29°C to +82°C).

Recommended for petroleum products, air with oil vapors, vegetable oils and mineral oils.

Not For Use in Hot Water Services.

Upper and Lower Shaft

Type 410 Stainless Steel

O-Rings

Compatible with seat ring material

Seal Gland

C36000 Brass

Top and Bottom Bearings

Sintered Bronze

Cap Screws

Alloy Steel Class 12.9

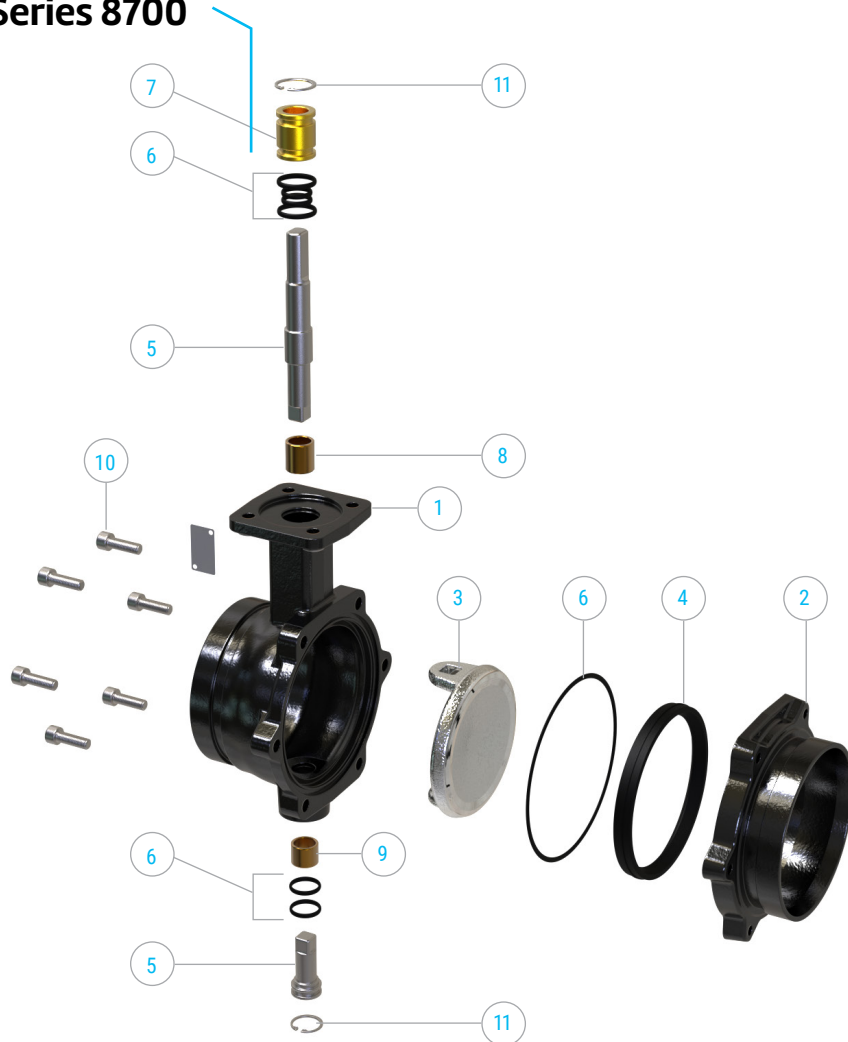
Retaining Rings

PH 15-7 Mo Stainless Steel



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

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Material Specifications

- 1 Body** Ductile Iron conforming to ASTM A 536, Grade 65-45-12
- 2 End Cap** Ductile Iron conforming to ASTM A 536, Grade 65-45-12
- 3 Disc** Ductile Iron conforming to ASTM A 536 Grades 65-45-12 with electroless nickel plating. Optional: Stainless Steel conforming to ASTM A351 Gr CF8M
- 4 Seat Ring** Properties as specified in accordance with ASTM D 2000.
 - Grade EP (EPDM): Service Temperature Range -40°F to +250°F (-40°C to +121°C) Recommended for water service, dilute acids, alkalies, oil-free air and many chemical services. Not For Use in Petroleum Services.
 - Grade T (Nitrile): Service Temperature Range -20°F to +180°F (-29°C to +82°C). Recommended for petroleum products, air with oil vapors, vegetable oils and mineral oils. Not For Use in Hot Water Services.
- 5 Upper and Lower Shaft**
Type 410 Stainless Steel
- 6 O-Rings** Compatible with seat ring material
- 7 Seal Gland** C36000 Brass
- 8 + 9 Top and Bottom Bearings** Sintered Bronze
- 10 Cap Screws** Alloy Steel Class 12.9
- 11 Retaining Rings** PH 15-7 Mo Stainless Steel

Gruvlok Butterfly Valve Series 8700 (Ordering Information)

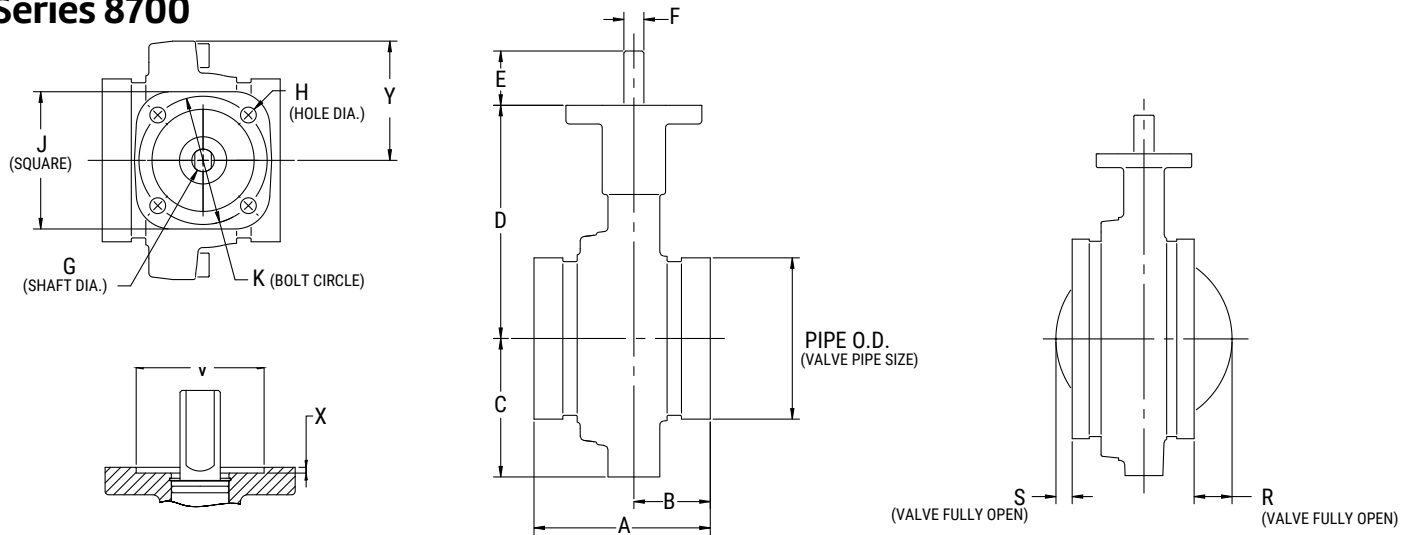
Sample Part Number 87020-20-1--->	87	020	-	2	0	-	1
	Series	Size		Seals	Operator		Disc
	87	020		1 - Nitrile	0 - Bare Stem		1 - Nickel Plated Ductile
		025		2 - EPDM	1 - 10 Pos. L/Lock		2 - Stainless Steel
		030			2 - Gear Operator		
		040					
		050					
		060					
		080					



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Series 8700 Butterfly – Bare Stem * Valve Size (ANSI/DN)

Size	Dimensions																Weight LB/Kg
	OD	A	B	C	D	E	F	G	J	K	H	R	S	V	Y	X	
	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm
2	2.375	3.21	1.47	2.08	4.188	1.18	0.434	0.563	2.95	2.756	0.339	NA	NA	2.165	1.8125	0.125	3.7
50	60.3	81.5	37.3	52.8	106.4	30	11	14.3	74.9	70	8.6	NA	NA	55	46	3.2	1.7
2½	2.875	3.83	1.658	2.251	4.375	1.18	0.434	0.563	2.95	2.756	0.339	NA	NA	2.165	2.115	0.125	4.78
65	73	97.3	42.1	57.2	111.1	30	11	14.3	74.9	70	8.6	NA	NA	55	53.7	3.2	2.2
3	3.5	3.83	1.658	3.01	5.06	1.18	0.434	0.625	2.95	2.756	0.339	NA	NA	2.165	2.56	0.125	6.56
80	88.9	97.3	42.1	76.5	128.5	30	11	15.9	74.9	70	8.6	NA	NA	55	65	3.2	3
4	4.5	4.625	2.1	3.406	5.375	1.18	0.434	0.625	2.95	2.756	0.339	NA	NA	2.165	3.125	0.125	9.54
100	114.3	117.5	5.3	86.5	136.5	30	11	15.9	74.9	70	8.6	NA	NA	55	79.4	3.2	4.3
5	5.563	5.813	2.75	4.375	5.875	1.18	0.434	0.709	2.95	2.756	0.339	NA	NA	2.165	3.713	0.125	17.79
125	141.3	147.7	69.9	111.1	149.2	30	11	18	74.9	70	8.6	NA	NA	55	94.3	3.2	8.1
6	6.625	5.813	2.75	4.875	6.375	1.18	0.434	0.709	2.95	2.756	0.339	0.183	NA	2.165	4.184	0.125	21.37
150	168.3	147.7	69.9	123.8	161.9	30	11	18	74.9	70	8.6	4.6	NA	55	106.3	3.2	9.7
8	8.625	5.27	2.168	5.908	8	1.67	0.625	0.875	4.125	4.016	0.413	1.637	0.701	2.756	5.168	0.125	33.7
200	219.1	133.9	55.1	150.1	203.2	42.4	15.9	22.2	104	102	10.5	41.6	17.8	70	131.3	3.2	15.3

Overall Dimensions							
in/mm	2	2½	3	4	5	6	8
	50	65	80	100	125	150	200
Height	7.448	7.806	9.25	9.961	11.43	12.43	15.578
	189.2	198.3	235.0	253.0	290.3	315.7	395.7
Length	3.21	3.83	3.83	4.625	5.813	5.813	5.27
	81.5	97.3	97.3	117.5	147.7	147.7	133.9
Width	3.625	4.23	5.12	6.25	7.426	8.368	10.336
	92.1	107.4	130.0	158.6	188.6	212.5	262.5

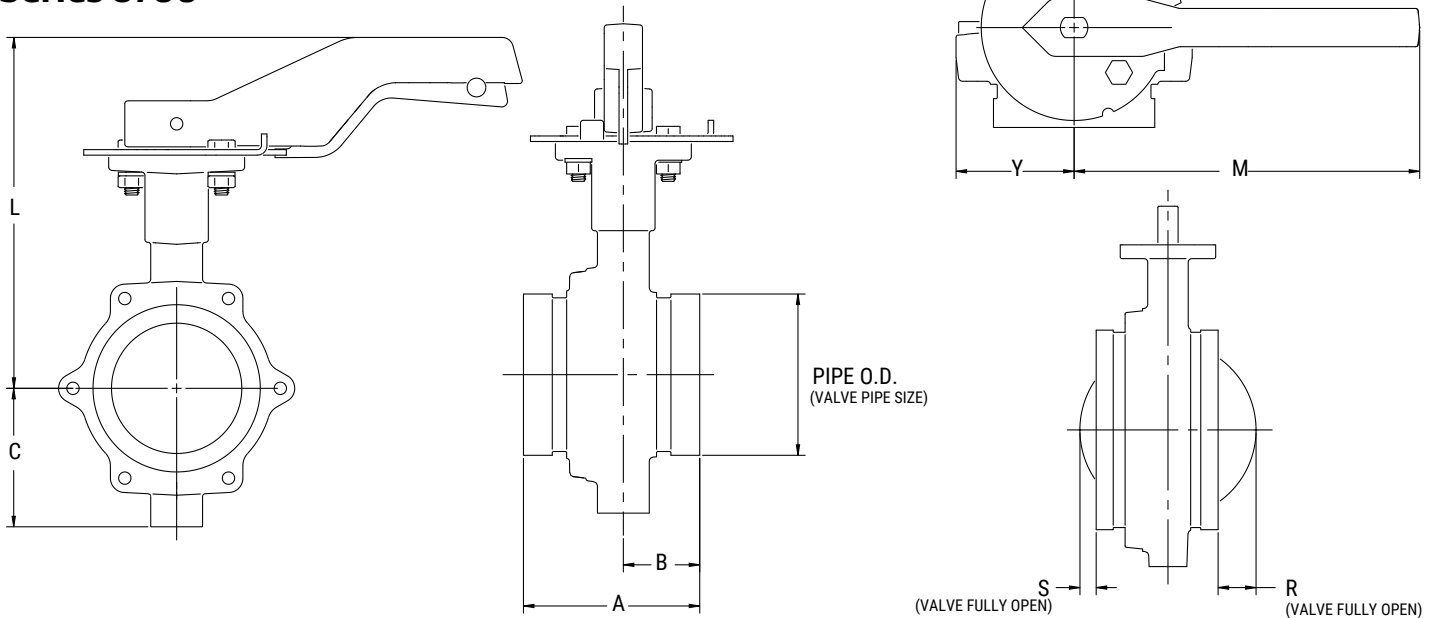
* Note: It is the sole responsibility of the end user to ensure that a suitable actuator is properly installed on the valve prior to placing it into service. Failure to do so may result in improper operation or equipment damage.



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Series 8700 Butterfly – Lever Operated – Valve Size (ANSI/DN)

Size	Dimensions										Weight LB/Kg	
	OD	A	B	C	L	M	R	S	T	Y		
	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	
2 50	2.375 60.3	3.21 81.5	1.47 37.3	2.08 52.8	6.683 169.7	7.5 190.5	NA	NA	4.315 109.6	1.8125 46	6.05 2.8	
2½ 65	2.875 73	3.83 97.3	1.658 42.1	2.251 57.2	6.905 175.4	7.5 190.5	NA	NA	4.315 109.6	2.115 53.7	7.12 3.2	
3 80	3.5 88.9	3.83 97.3	1.658 42.1	3.01 76.5	7.62 193.5	7.5 190.5	NA	NA	4.315 109.6	2.56 65	8.93 4.1	
4 100	4.5 114.3	4.625 117.5	2.1 53.3	3.406 86.5	7.87 199.9	7.5 190.5	NA	NA	4.315 109.6	3.125 79.4	11.9 5.4	
5 125	5.563 171.0	5.813 147.7	2.75 69.9	4.375 111.1	8.37 212.6	10.7 271.8	NA	NA	4.315 109.6	3.713 94.3	20.62 9.4	
6 150	6.625 168.3	5.813 147.7	2.75 69.9	4.875 123.8	8.93 226.8	10.7 271.8	0.183 4.6	NA	4.315 109.6	4.184 106.3	24.2 11	
8 200	8.625 219.1	5.27 133.9	2.168 55.1	5.908 150.1	10.805 274.4	14.98 380.5	1.637 41.6	0.701 17.8	5.886 149.5	5.168 131.3	39.18 17.8	

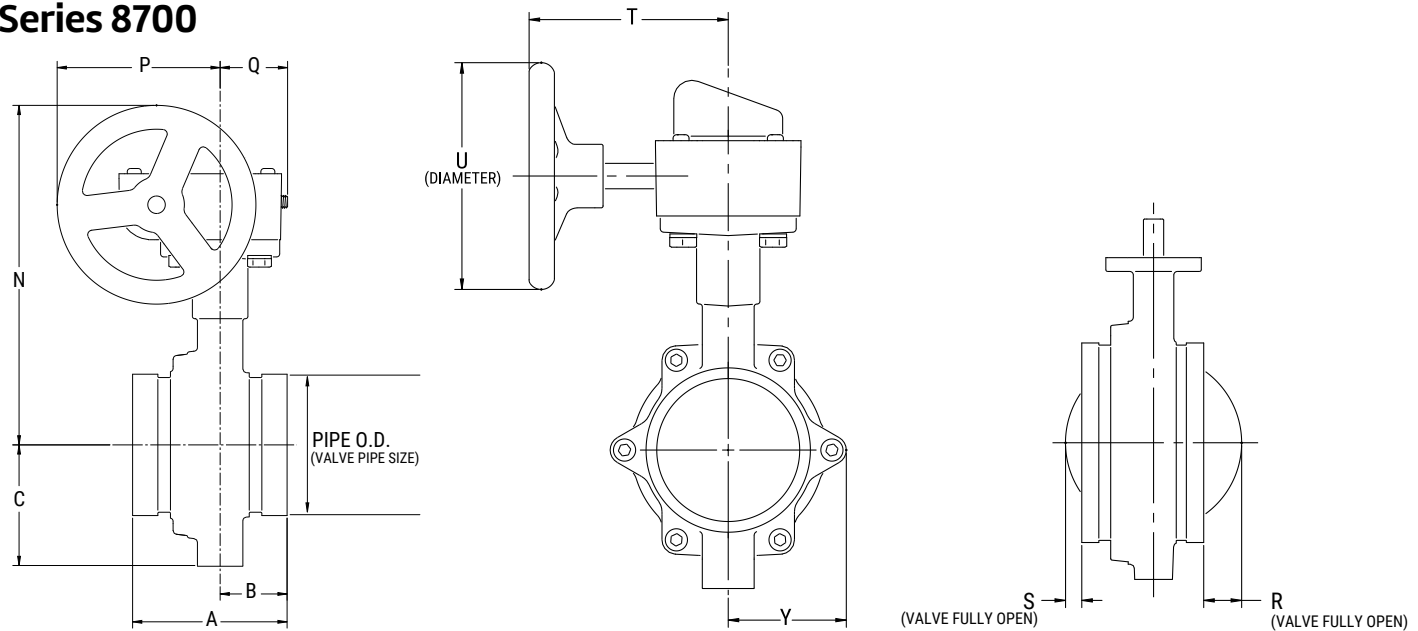
Overall Dimensions							
	2	2½	3	4	5	6	8
in/mm	50	65	80	100	125	150	200
Height	8.763 222.6	9.156 232.6	10.63 270.0	11.276 286.4	12.745 323.7	13.805 350.6	16.713 424.5
Length	3.21 81.5	3.83 97.3	3.83 97.3	4.625 117.5	5.813 147.7	5.813 147.7	5.27 133.9
Width	9.313 236.5	9.615 244.2	10.060 255.5	10.625 269.9	14.413 366.1	14.884 378.1	20.148 511.8



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Offset Disc – Butterfly Valve Series 8700



Series 8700 Butterfly – Gear Operated – Valve Size (ANSI/DN)

Size	Dimensions												Weight LB/Kg
	OD	A	B	C	N	P	Q	R	S	T	U	Y	
	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	
2	2.375	3.21	1.47	2.08	7.534	4.035	1.649	NA	NA	4.315	4.92	1.8125	9.71
50	60.3	81.5	37.3	52.8	191.4	102.5	41.9	NA	NA	109.6	125	46	4.4
2½	2.875	3.83	1.658	2.251	7.721	4.035	1.649	NA	NA	4.315	4.92	2.115	10.79
65	73	97.3	42.1	57.2	196.1	102.5	41.9	NA	NA	109.6	125	53.7	4.9
3	3.5	3.83	1.658	3.01	8.406	4.035	1.649	NA	NA	4.315	4.92	2.56	12.58
80	88.9	97.3	42.1	76.5	213.5	102.5	41.9	NA	NA	109.6	125	65	5.7
4	4.5	4.625	2.1	3.406	8.721	4.035	1.649	NA	NA	4.315	4.92	3.125	15.56
100	114.3	117.5	53.3	86.5	221.5	102.5	41.9	NA	NA	109.6	125	79.4	7.1
5	5.563	5.813	2.75	4.375	9.22	4.035	1.649	NA	NA	4.315	4.92	3.713	23.8
125	141.3	147.7	69.9	111.1	234.2	102.5	41.9	NA	NA	109.6	125	94.3	10.8
6	6.625	5.813	2.75	4.875	9.72	4.035	1.649	0.183	NA	4.315	4.92	4.184	27.39
150	168.3	147.7	69.9	123.8	246.9	102.5	41.9	4.6	NA	109.6	125	106.3	12.5
8	8.625	5.27	2.168	5.908	11.976	5.325	2.063	1.637	0.701	5.886	5.906	5.168	44.8
200	219.1	133.9	55.1	150.1	304.2	135.3	52.4	41.6	17.88	149.5	150	131.3	20.4

Overall Dimensions							
in./mm	2	2½	3	4	5	6	8
	50	65	80	100	125	150	200
Height	9.614 244.2	9.972 253.3	11.416 290.0	12.127 308.0	13.595 345.3	14.595 370.7	17.884 454.3
Length	5.505 139.8	5.693 144.6	5.693 144.6	6.135 155.8	6.785 172.3	6.785 172.3	7.493 190.3
Width	6.128 156.6	6.430 163.3	6.875 174.6	7.440 189.0	8.028 203.9	8.499 215.9	11.054 280.8



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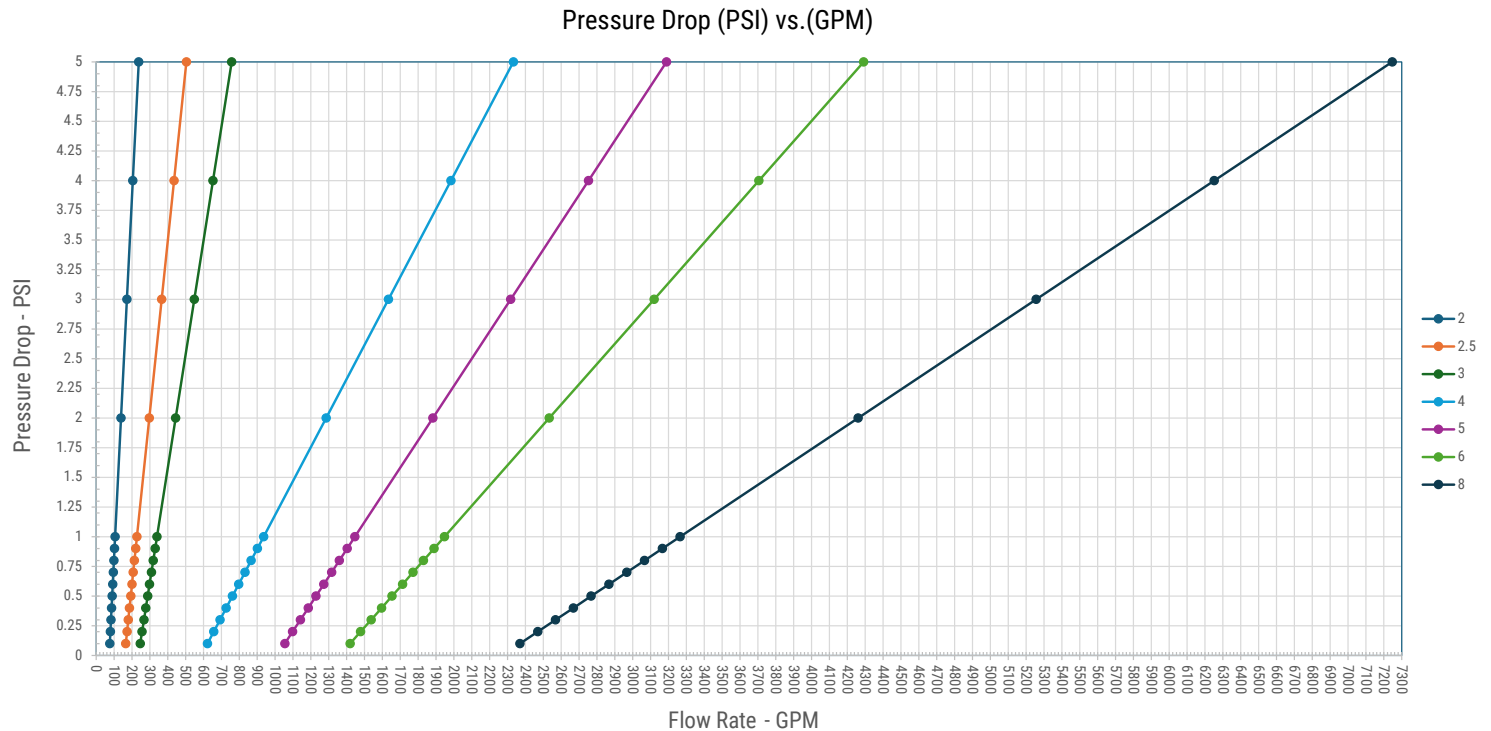
Cv Values

Valve Size	Disc Position (Degrees Open)								
	90°	80°	70°	60°	50°	40°	30°	20°	10°
In./mm	90°	80°	70°	60°	50°	40°	30°	20°	10°
2 50	104	79	54	32	21	12	7	4	2
2½ 65	221	168	115	69	44	26	14	7	4
3 80	464	354	242	144	92	54	30	15	8
4 100	929	708	484	288	184	108	60	30	15
5 125	1400	1068	730	435	278	163	91	46	23
6 150	1883	1435	981	585	374	220	123	61	31
8 200	3170	2415	1652	989	623	370	206	103	52

The equivalent feet of pipe is based on the Hazen and Williams formula and the flow rates typically used with each size valve.

Valve Size	Headloss	
	Equivalent Feet of Pipe	
In./mm	SCH 10	SCH 40
2 50	9.1	7.4
2½ 65	7.3	5.3
3 80	6.5	4.8
4 100	8.2	6.2
5 125	11.8	8.8
6 150	14.8	12.3
8 200	21.7	17.6

C=120



Offset Disc – Butterfly Valve Series 8700

Torque Values

Differential Pressure-PSI	Torque - In-lbs								
	50	100	150	200	250	300	350	400	
Valve Size	2	53	60	68	77	86	97	110	124
	2½	65	73	83	93	105	119	134	151
	3	113	127	143	162	183	206	232	262
	4	142	161	181	204	231	260	293	331
	5	178	200	226	255	288	325	366	413
	6	316	357	402	454	512	578	652	735
	8	454	512	578	652	735	829	935	1055

These values are valid for water and lubricating fluid service only. Contact ASC Engineered Solutions for information on torques for dry and non-lubricating fluid service