

LARGE DIAMETER U-BODY RESILIENT SEATED BUTTERFLY VALVE

Features:

- Maximum Working Pressure of 150 PSI
- Compatible with ANSI 125/150 Flanges
- Bi-Directional Bubble Tight Shut-Off
- Cartridge Seat Design
- High Strength Stainless Steel Taper Pins Securing Disc to Stem
- Primary & Secondary Seals (Interference Fit of Disc to Seat and Stem Through Seat)
- Available with Ductile Iron (Nickel Plated) or Cast Stainless Steel Discs*
- Available with EPDM or NBR (Buna) Seat Material
- Two-Stage Gear Operator Standard
- Dead-End Service Capable to 100 PSI**

Standards:

- Flange Design: ANSI B16.1
- Face to Face Dimension: MSS SP-67
- Pressure Tested to:
 - Seat: 165 PSI
 - Shell: 225 PSI

Options

FNW offers many options and modifications for valves. These include, but are not limited to: Actuation including chain wheels, square drive nuts, and pneumatic and electric operators. Also available are various control accessories, stem extensions, and custom mounting hardware. Contact FNW with your specific application needs.

* Other materials and configurations are available by special order. Contact FNW for further assistance.

** Dead-end service capability is limited to the valve in the closed position only. Opening the valve without a downstream flange can cause the seat to shift.



Standard Materials

Ref. No.	Description	Material		Qty
		Ductile Iron Disc	Stainless Steel Disc	
1	Gear Operator	Case, A126 Cl. B, Gear, ASTM A536 65-45-12		1
2	Bottom Plate	Ductile Iron, ASTM A536 65-45-12		1
3	Bottom Plate Screw	Steel, ASTM A283D A36		4
4	Bottom Plate O-ring	Rubber, ASTM D2000 NBR		1
5	Gasket	Steel		1
6	Bearing	Bronze ASTM B584 C83600		1
7	Lower Bushing	Bronze ASTM B584 C83600		1
8	Body	Ductile Iron, ASTM A536 65-45-12		1
9	Seat	Rubber, ASTM D2000 EPDM or NBR		1
10	Lower Shaft	Stainless, ASTM A582 S41600	Stainless, ASTM A276 S31600	1
11	Disc	Ductile Iron, ASTM A536 65-45-12 (Nickel Plated)	Stainless, ASTM A351 CF8M	1
12	Taper Pin	Stainless, ASTM A564 S17400		3
13	Upper Shaft	Stainless, ASTM A582 S41600	Stainless, ASTM A276 S31600	1
14	Long Bushing	ASTM A584 C83600		1
15	Name Plate	Aluminum		1
16	Short Bushing	Bronze ASTM B584 C83600		4
17	O-ring	Rubber, ASTM D2000 EPDM		3
18	Key	Steel		2

Seat Temperatures

Seat Material	Working Temperature
EPDM	-22° to 230°F (-30°C to 110°C)
Buna-N	-4° to 194°F (-20°C to 90°C)

Figure Number Matrix

F N W 7 5 2 E D S G 30				
SEAT	DISC MATERIAL	STEM MATERIAL	OPERATOR	SIZE CODE
E = EPDM B = Buna-N	D = Ductile Iron S = Stainless Steel	S = 416SS w/DI Disc 316SS w/SS Disc	G = Gear Operator (STANDARD)	28 30 32 36 40 42 48
Other materials and operators are available on a price-on-availability basis. Contact FNW for additional assistance.				

Weights

Size	Weight (Lbs)
28	1,272
30	1,279
32	1,715
36	1,984
40	2,712
42	2,923
48	3,505

Torque

Size	Torque (in-lbs)
28	28,958
30	33,336
32	38,124
36	46,528
40	78,993
42	79,864
48	111,112

Cv (Flow Coefficients)

The size of butterfly valve used for control purposes should be calculated on the basis of the operating characteristics. In order to achieve optimum control, the flow coefficient (Cv) of a valve needs to be considered. Cv is the volume of water in U.S. gallons per minute that passes through the valve at a pressure drop of 1 PSI at 68°F. Flow for a given Cv is typically calculated from the following formula.

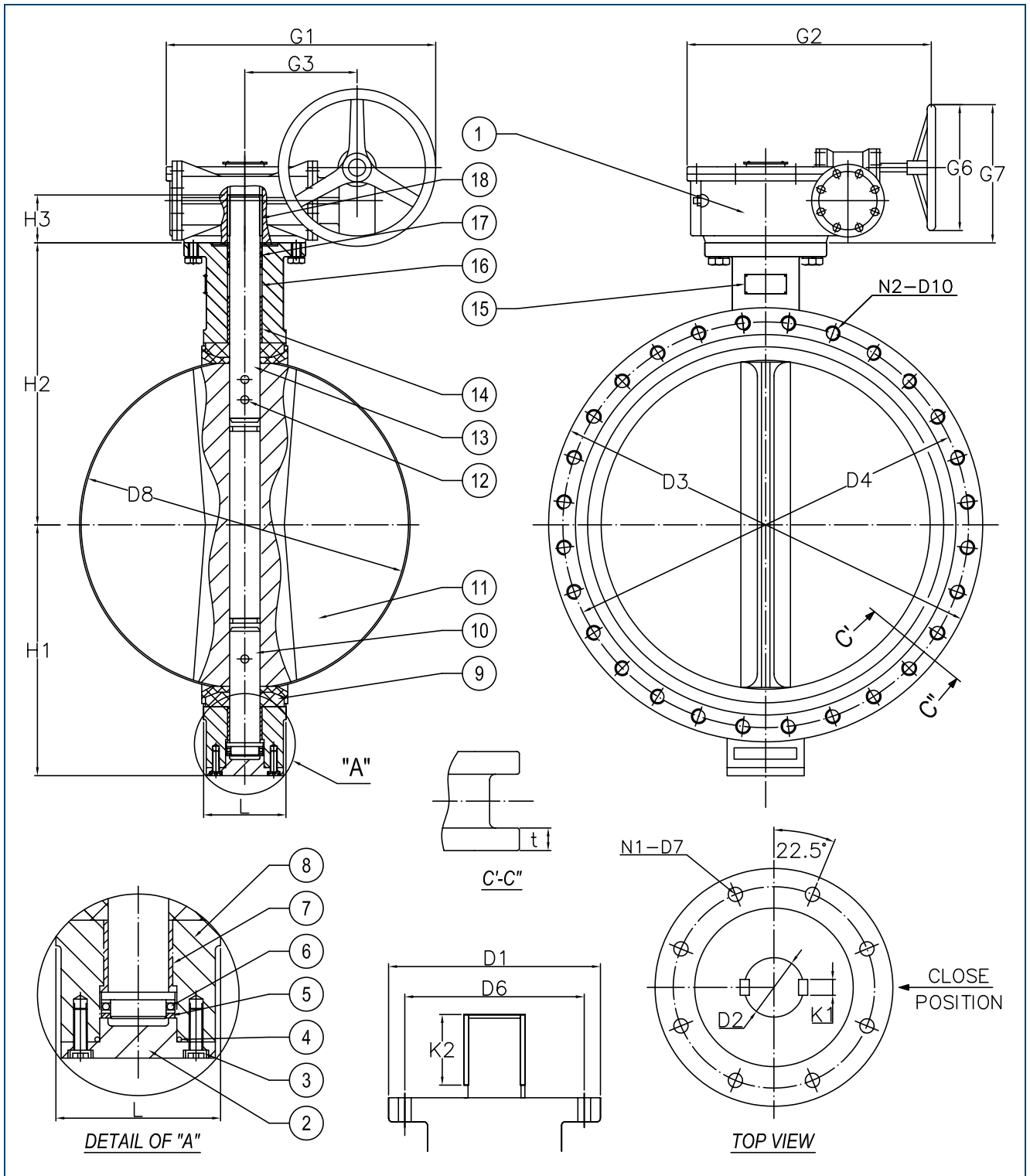
$$Q = Cv \times \sqrt{\frac{\Delta P \times 62.4}{D}}$$

Where:

- Q = Valve flow rate in gallons per minute (US GPM)
- ΔP = Pounds per square inch (PSI) pressure drop across valve
- 62.4 = Conversion factor for fluids computed in relation to water
- D = Density of fluids in pounds per cubic foot

1. When sizing actuators, application specific multipliers should be considered.
2. High pressure differentials should take dynamic torque into consideration.

Size	Cv by Disc Degrees Open								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
28	30	1,663	3,522	7,630	12,599	20,036	30,482	46,899	58,696
30	35	1,912	4,050	8,142	13,152	20,411	31,226	47,562	63,328
32	45	2,387	4,791	8,736	13,788	20,613	31,395	48,117	68,250
36	60	3,021	6,063	11,055	17,449	26,086	39,731	60,895	86,375
40	84	4,183	8,395	15,307	24,159	36,166	55,084	84,425	119,750
42	93	4,601	9,235	16,838	26,575	39,783	60,592	92,868	131,725
48	121	5,981	12,001	21,890	34,548	51,718	78,770	120,728	171,243



Dimensions (inches)

Size	D1	D2	D3	D4	N2	D10 (UNC-2B)	D6	N1	D7	D8	L	H1	H2	H3	t	K1	K2	G1	G2	G3	G6	G7
28	11.81	2.49	36.50	34.00	24	1-1/4-7	10.00	8	0.71	27.36	6.42	20.47	24.57	2.60	2.13	0.71	2.48	21.28	19.13	7.66	15.75	13.54
30	11.81	2.49	38.74	36.00	28	1-1/4-7	10.00	8	0.71	29.29	6.57	22.05	25.98	2.60	2.13	0.71	2.48	21.28	19.13	7.66	15.75	13.54
32	11.81	2.49	41.73	38.50	24	1-1/2-6	10.00	8	0.71	31.30	7.40	23.27	26.46	2.60	2.40	0.71	2.48	21.28	19.13	7.66	15.75	13.54
36	11.81	2.95	45.98	42.76	32	1-1/2-6	10.00	8	0.71	34.06	7.99	25.83	28.35	4.65	2.40	0.79	3.94	24.96	21.65	9.72	15.75	15.24
40	11.81	3.35	50.75	47.25	28	1-1/2-6	10.00	8	0.71	37.99	8.50	28.39	31.50	5.91	2.52	0.79	3.94	24.96	21.65	9.72	15.75	15.24
42	13.78	3.74	52.99	49.49	36	1-1/2-6	11.73	8	0.87	40.55	9.88	30.59	33.78	5.91	2.64	0.98	5.51	31.89	25.59	12.60	17.72	18.62
48	13.78	4.13	59.49	56.00	44	1-1/2-6	11.73	8	0.87	45.67	10.87	34.02	37.05	5.91	2.76	1.10	5.51	31.89	25.59	12.60	17.72	18.62

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