SPECIFICATIONS

SERIES 800
BUTTERFLY VALVES

RESILIENT-SEATED BUTTERFLY VALVES

FNW resilient-seated butterfly valves are designed to meet the rigorous requirements of commercial and industrial applications, such as pulp & paper, water purification, power and utilities, chemical/petrochemical, food and beverage, OEM and HVAC. The FNW 800 Series butterfly valve features a vulcanized seat design that enhances durability and offers superior performance in end-of-line and vacuum applications. Each valve is manufactured in accordance with industry-standard specifications and is 100% tested in both directions of operation to assure bubble-tight service.

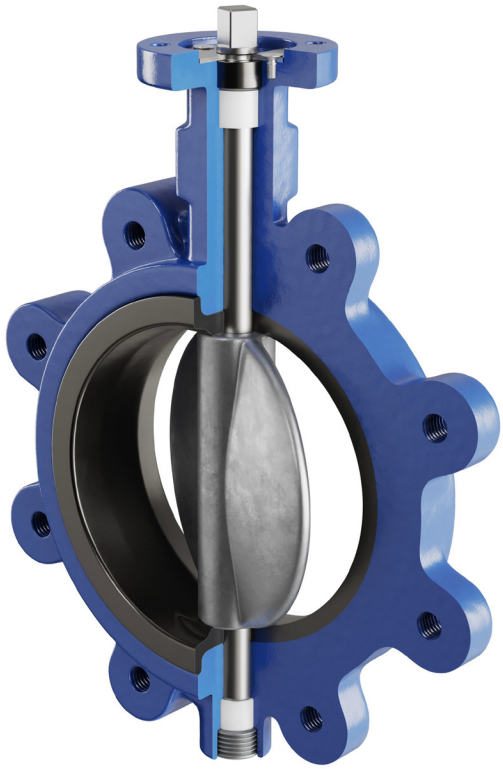

Fig. 832

FEATURES

- Bi-directional dead-end service at full-rated pressure
- Designed for 125/150-lb flanges
- Standard stainless steel disc and stem offer superior strength and chemical resistance
- Mounting pad with square shaft permits direct mount actuation that reduces hysteresis and cost (2"–12")
- Secured stem retainer plate for blowout-proof protection
- High-strength two-piece stem eliminates taper pins and disc screws from flow path
- Molded O-ring*
- Lockable handles
- Shell tested to 150% and seat tested to 110% of maximum working pressure
- Dual PTFE shaft bearings for reduced torque and improved stem alignment
- Vacuum rated to 29.9"Hg (0.01 Torr)†
- Epoxy-coated body
- Low-maintenance design
- Sizes 2"–24"

PRODUCT SPECIFICATIONS

Standards

- NSF 61 and NSF 372 certified*
  *Applies only to EPDM seated valves
- Design: API 609A and MSS SP-67
- Seat test: MSS SP-61
- Top flange: ISO 5211

PRESSURE RATING

Figure	2"–12"	14"–24"
832	255 psi	188 PSI
812	200 psi	150 PSI

Options

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

*Pressed collar-style angle face rings are not recommended due to the large radius of the inner diameter. Cast type angle face rings or stub ends should be used with light wall stainless steel piping. Prior to installation, always verify that the connecting piping flange face fully engages the valve seat face.

†Vacuum measurements are often made in inches of mercury below atmospheric pressure. The values calculated here assume standard atmospheric pressure of 29.92 inches of mercury.

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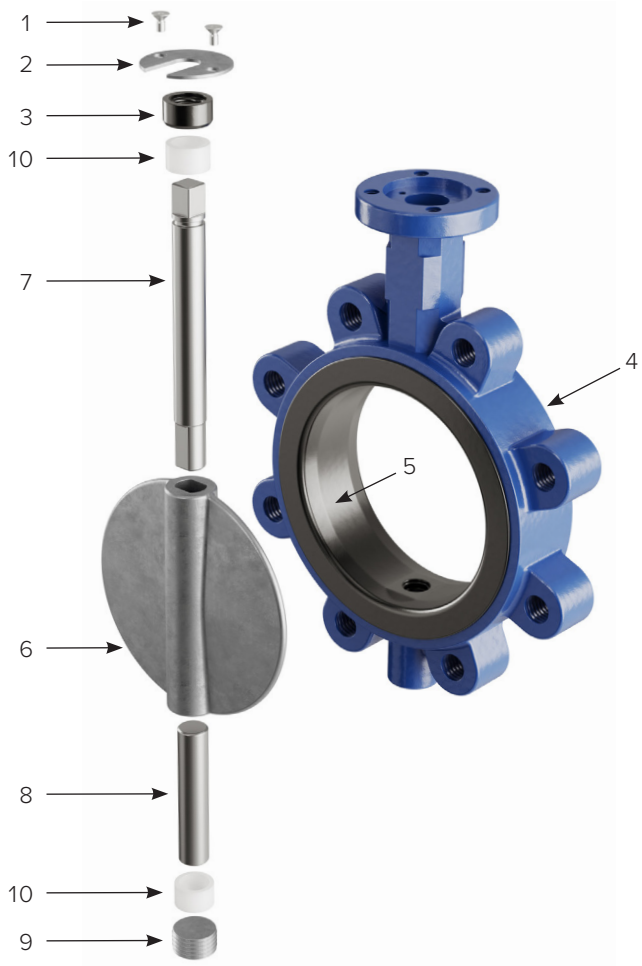


PART MATERIALS & QUANTITY

Ref #	Description	Material
1	Top Retainer Bolt	Zinc-plated Carbon Steel, A36
2	Retaining Plate	Zinc-plated Carbon Steel, A36
3	Ingress Seal	EPDM, Buna-N or Viton
4	Body	Ductile Iron, A536
5	Seat	EPDM Buna-N (NBR) Viton®
6	Disc	Stainless Steel, CF8M Aluminum Bronze, B148
7	Upper Stem	Stainless Steel 316
8	Lower Stem	Stainless Steel 316
9	Plug	Zinc-Plated Carbon Steel, A36
10	Bushing	PTFE

FIGURE NUMBER MATRIX

FNW8 ☐ DISC MATERIAL ☐ BODY STYLE ☐ OPERATOR ☐ SIZE

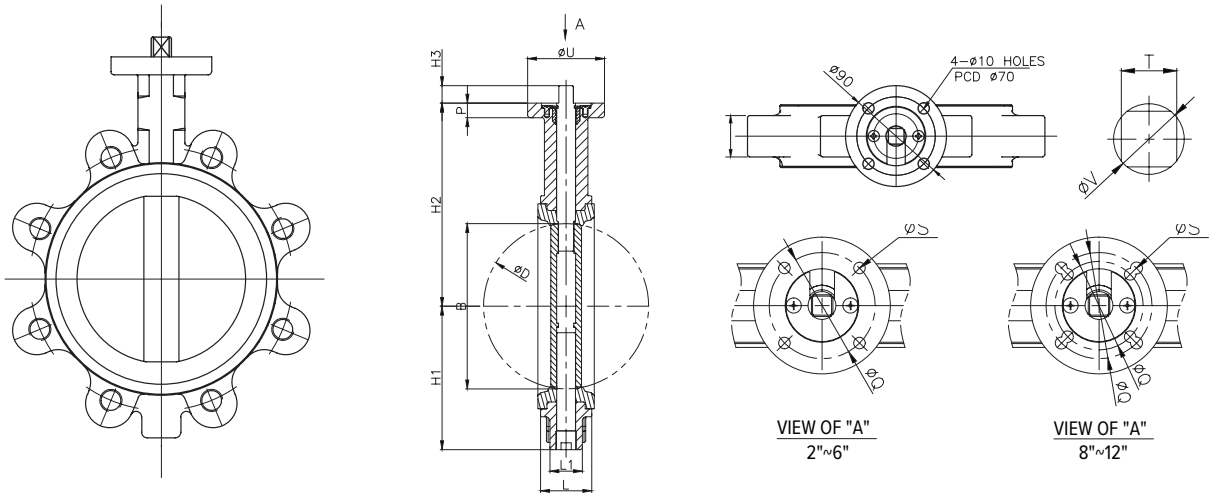
DISC MATERIAL	BODY STYLE	SEAT	OPERATOR	SIZE	
Aluminum Bronze = 1 Stainless Steel (2"-24") = 3	2 = Lug	EPDM = E Buna = B Viton = V	10-Position Lever Handle = Blank Gear Operator = G	2 = K 2-1/2 = I 3 = M 4 = P 5 = S 6 = U 8 = X	10 = 10 12 = 12 14 = 14 16 = 16 18 = 18 20 = 20 24 = 24

Example: Select one code from each category to build a complete valve order number: **FNW8XXXXX**

SERIES 800
BUTTERFLY VALVES

FNW

RESILIENT-SEATED BUTTERFLY VALVES



DIMENSIONS (IN.) SIZES 2" – 12"

Size (in.)	B	D	H1	H2	H3	P	U	T	Q	V	L1	L		ISO
2	1.93	2.05	2.77	4.94	0.6	0.55	3.54	0.43	2.76	0.55	1.06	1.69	0.39	F07
2-1/2	2.52	2.64	2.95	5.2	0.6	0.55	3.54	0.43	2.76	0.55	1.14	1.81	0.39	F07
3	3.03	3.15	3.67	6.07	0.6	0.55	3.54	0.43	2.76	0.55	1.18	1.81	0.39	F07
4	3.82	3.94	4.18	6.54	0.7	0.63	13.54	0.55	2.76	0.63	1.30	2.05	0.39	F07
5	4.80	4.92	4.69	7.13	0.7	0.63	3.54	0.55	2.76	0.71	1.38	2.20	0.39	F07
6	5.83	5.93	5.63	7.99	0.7	0.63	3.54	0.55	2.76	0.71	1.38	2.20	0.39	F07
8	7.62	7.74	6.5	9.26	0.81	0.67	4.92	0.67	2.76/4.02	0.87	1.50	2.36	0.39/0.47	F07/F10
10	9.62	9.72	7.86	10.5	0.81	0.79	5.91	0.87	4.02/4.92	1.00	2.28	2.68	0.47/0.55	F10/F12
12	11.54	11.63	9.47	12.15	0.95	0.79	5.91	0.87	4.02/4.92	1.10	1.97	3.07	0.47/0.55	F10/F12

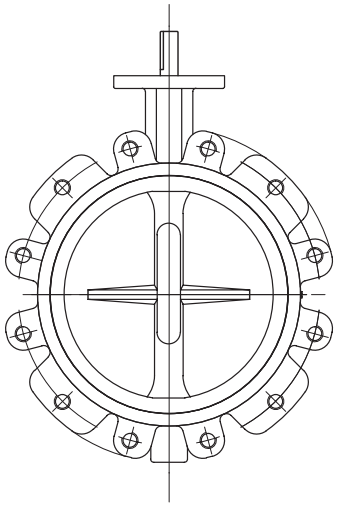
DIMENSIONS (MM) SIZES 2" – 12"

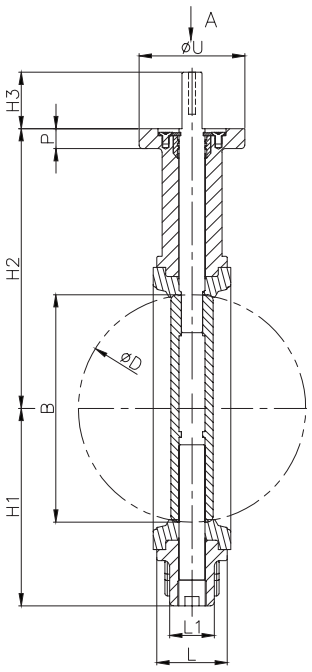
Size (in.)	B	D	H1	H2	H3	P	U	T	Q	V	L1	L	S	ISO
2	49.0	52.0	70.4	125.4	15.2	14	90	11	70	14	27	43	10	F07
2-1/2	64.0	67.0	75.0	132.1	15.2	14	90	11	70	14	29	46	10	F07
3	77.0	80.0	93.2	154.2	15.2	14	90	11	70	14	30	46	10	F07
4	97.0	100.0	106.2	166.2	17.7	16	90	14	70	16	33	52	10	F07
5	122.0	125.0	119.0	181.1	17.7	16	90	14	70	18	35	56	10	F07
6	148.0	150.5	143.0	203.0	17.7	16	90	14	70	18	35	56	10	F07
8	193.5	196.5	165.2	235.3	20.5	17	125	17	70/102	22	38	60	10/12	F07/F10
10	244.4	247.0	199.6	266.6	20.5	20	150	22	102/125	25.4	58	68	12/14	F10/F12
12	293.0	295.5	240.6	308.6	24.1	20	150	22	102/125	28	50	78	12/14	F10/F12

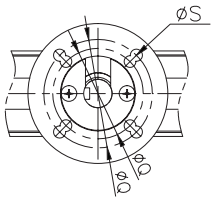
SERIES 800
BUTTERFLY VALVES

FNW®

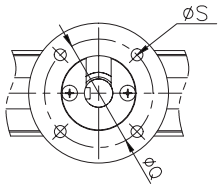
RESILIENT-SEATED BUTTERFLY VALVES



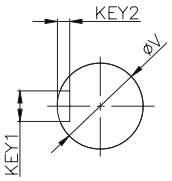




VIEW OF "A"
14"



VIEW OF "A"
16"~24"



STEM KEY

DIMENSIONS (IN.) SIZES 14" – 24"

Size (in.)	B	D	H1	H2	H3	P	U	Q	S	V	L1	L	K1	K2	ISO
14	12.85	12.99	10.41	13.60	2.76	0.79	6.89	4.92/5.51	0.55/0.71	1.10	2.28	3.07	0.39	0.20	F12/F14
16	14.84	14.92	11.75	13.76	3.15	0.91	6.89	5.51	0.71	1.26	2.60	4.02	0.39	0.20	F14
18	17.11	17.20	13.96	15.75	3.15	0.91	6.89	5.51	0.71	1.50	3.03	4.49	0.47	0.20	F14
20	19.15	19.29	15.14	17.32	3.54	0.91	8.27	6.50	0.87	1.77	3.23	5.00	0.47	0.20	F16
24	22.51	22.62	17.50	20.08	3.74	0.91	8.27	6.50	0.87	2.17	4.02	6.06	0.55	0.20	F16

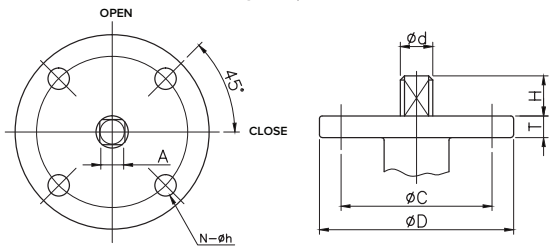
DIMENSIONS (MM) SIZES 14" – 24"

Size (in.)	B	D	H1	H2	H3	P	U	Q	S	V	L1	L	K1	K2	ISO
14	326.5	330.0	264.5	345.5	70	20	175	125/140	14/18	28	58	78	10	5	F12/F14
16	377.0	379.0	298.5	349.5	80	23	175	140	18	32	66	102	10	5	F14
18	434.5	437.0	354.5	400.0	80	23	175	140	18	38	77	114	12	5	F14
20	486.5	490.0	384.5	440.0	90	23	210	165	22	45	82	127	12	5	F16
24	571.7	574.5	444.5	510.0	95	23	210	165	22	55	102	154	14	5	F16

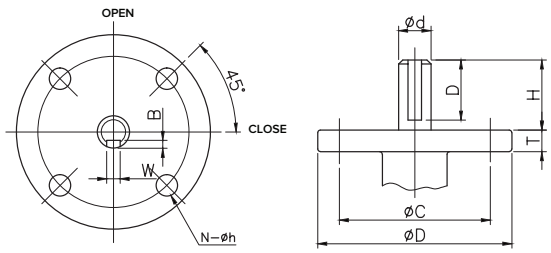
SERIES 800
BUTTERFLY VALVES

RESILIENT-SEATED BUTTERFLY VALVES

SIZE 1-1/2–12"



SIZE 14"–24"



DIMENSIONS (IN.) SIZES 2" – 24"

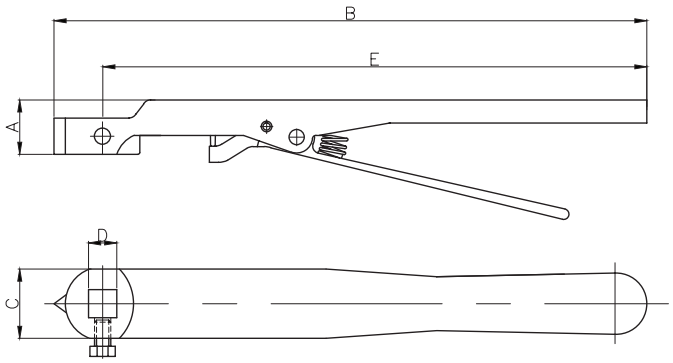
Size	Ød	T	ØC	N	Øh	A	ØD	B	W	H	D	ISO
2	0.55	0.55	2.76	4	0.39	0.43	3.54	–	–	0.60	–	F07
2–1/2	0.55	0.55	2.76	4	0.39	0.43	3.54	–	–	0.60	–	F07
3	0.55	0.55	2.76	4	0.39	0.43	3.54	–	–	0.60	–	F07
4	0.63	0.63	2.76	4	0.39	0.55	3.54	–	–	0.70	–	F07
5	0.71	0.63	2.76	4	0.39	0.55	3.54	–	–	0.70	–	F07
6	0.71	0.63	2.76	4	0.39	0.55	3.54	–	–	0.70	–	F07
8	0.87	0.67	2.76/4.01	4	0.39/0.47	0.67	4.92	–	–	0.81	–	F07/F10
10	1.00	0.79	4.01/4.92	4	0.47/0.55	0.87	5.91	–	–	0.81	–	F10/F12
12	1.10	0.79	4.01/4.92	4	0.47/0.55	0.87	5.91	–	–	0.95	–	F10/F12
14	1.10	0.79	4.92/5.51	4	0.55/0.71	–	6.89	0.20	0.39	2.76	2.36	F12/F14
16	1.26	0.91	5.51	4	0.71	–	6.89	0.20	0.39	3.15	2.36	F14
18	1.50	0.91	5.51	4	0.71	–	6.89	0.20	0.47	3.15	2.36	F14
20	1.77	0.91	6.50	4	0.87	–	8.27	0.20	0.47	3.54	2.76	F16
24	2.17	0.91	6.50	4	0.87	–	8.27	0.20	0.55	3.74	2.76	F16

DIMENSIONS (MM) SIZES 2" – 24"

Size (in.)	Ød	T	ØC	N	Øh	A	ØD	B	W	H	D	ISO
2	14	14	70	4	10	11	90	–	–	15.2	–	F07
2–1/2	14	14	70	4	10	11	90	–	–	15.2	–	F07
3	14	14	70	4	10	11	90	–	–	15.2	–	F07
4	16	16	70	4	10	14	90	–	–	17.7	–	F07
5	18	16	70	4	10	14	90	–	–	17.7	–	F07
6	18	16	70	4	10	14	90	–	–	17.7	–	F07
8	22	17	70/102	4	10/12	17	125	–	–	20.5	–	F07/F10
10	25.4	20	102/125	4	12/14	22	150	–	–	20.5	–	F10/F12
12	28	20	102/125	4	12/14	22	150	–	–	24.1	–	F10/F12
14	28	20	125/140	4	14/18	–	175	5	10	70	60	F12/F14
16	32	23	140	4	18	–	175	5	10	80	60	F14
18	38	23	140	4	18	–	175	5	12	80	60	F14
20	45	23	165	4	22	–	210	5	12	90	70	F16
24	55	23	165	4	22	–	210	5	14	95	70	F16

RESILIENT-SEATED BUTTERFLY VALVES

10-Position Lever Handle



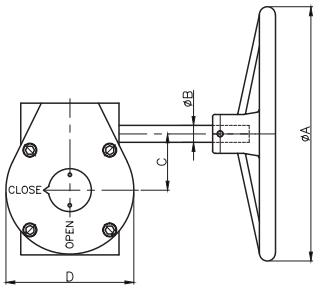
DIMENSIONS (IN.)

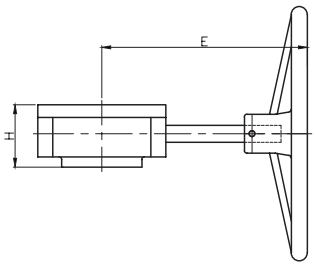
Size	A	B	C	D	E
2–3	1.06	11.37	1.34	0.43	10.64
4–6	1.06	11.37	1.34	0.55	10.64
8	0.91	16.93	1.77	0.67	16.99

DIMENSIONS (MM)

Size (in.)	A	B	C	D	E
2–3	27	288.7	34	11	270.2
4–6	27	288.7	34	14	270.2
8	23	430	45	17	431.5

Manual Gear Operator





DIMENSIONS (IN)

Size	OA	OB	C	D	E	H
2–3	5.79	0.63	1.83	4.09	6	2.83
4–6	5.79	0.63	1.83	4.09	6	2.83
8	11.22	0.75	2.48	5.65	9.07	2.76
10	11.22	0.75	2.48	5.65	9.07	2.76
12	11.22	0.75	3.25	6.06	8.76	2.95
14	11.22	0.75	3.25	6.06	11.81	3.27
16	11.22	0.75	3.25	6.06	11.81	3.27
18	15.43	0.75	3.25	6.06	12.6	3.15
20	15.43	0.98	4.67	10	12.99	4.37
24	15.43	0.98	4.67	10	12.99	4.37

DIMENSIONS (MM)

Size (in.)	OA	OB	C	D	E	H
2–3	147	16	46.5	104	152.5	72
4–6	147	16	46.5	104	152.5	72
8	285	19	63	143.5	230.5	70
10	285	19	63	143.5	230.5	70
12	285	19	82.5	154	222.5	75
14	285	19	82.5	154	300	83
16	285	19	82.5	154	300	83
18	392	19	82.5	154	320	80
20	392	25	118.5	254	330	111
24	392	25	118.5	254	330	111

SERIES 800
BUTTERFLY VALVES

FNW®

RESILIENT-SEATED BUTTERFLY VALVES

WEIGHT (LBS)

Size (in.)	Lug/Lever	Lug/Gear
2	8.0	16.0
2-1/2	9.9	18.0
3	10.3	18.4
4	15.3	23.5
5	19.4	27.6
6	21.5	29.7
8	36.1	51.7
10	—	74.8
12	—	103.0
14	—	146.2
16	—	196.0
18	—	268.3
20	—	367.8
24	—	522.6

TORQUE (IN-LBS)

Size (in.)	EPDM & BUNA Seat	VITON Seat
2	367	477
2-1/2	367	477
3	480	624
4	593	771
5	649	844
6	971	1262
8	1896	2465
10	4006	5208
12	4627	6015
14	13385	17401
16	17506	22758
18	23542	30605
20	29076	37799
24	46874	60901

SEAT TEMPERATURES

Seat Material	Working Temperature
EPDM	-22° – 230°F (-30° – 110°C)
Buna-N	-4° – 194°F (-20° – 90°C)
Viton	-14° – 320°F (-25°– 160°C)

1. All unseating torques based on non-corrosive clean, wet or lubricating service at ambient temperatures. Contact FNW for dry or application specific torque.
2. For line velocities greater than 15 FPS, dynamic torque must be taken into consideration.
3. All torques are based on maximum pressure differential for the valve.
4. Torque values shown are reflective of a 30% safety factor.

CV (FLOW COEFFICIENT)

Size (in.)	Degrees of Disc Opening							
	20°	30°	40°	50°	60°	70°	80°	90°
2	8	9	18	28	55	72	110	135
2-1/2	10	15	27	44	85	110	168	210
3	15	23	39	65	130	165	250	310
4	27	41	71	115	230	300	465	540
5	58	86	150	245	480	610	980	1100
6	96	140	245	400	785	1010	1615	1910
8	165	245	410	685	1275	1715	2670	3185
10	255	380	650	1130	2100	2700	4250	4900
12	370	540	950	1570	3050	3950	5950	7350
14	450	750	1300	2210	4080	5610	8078	11200
16	640	900	1720	2790	5000	7650	10770	12900
18	730	1250	2295	3700	7050	9180	13900	17500
20	910	1595	2850	4630	8600	11500	17540	22400
24	1250	2290	4000	6090	12500	16500	23590	28300

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.