Figure 731 & 732

RESILIENT SEATED BUTTERFLY VALVE

Valve Features

FNW cartridge style resilient seated butterfly valves are designed to meet the rigorous requirements of industrial applications such as pulp and paper, water purification, power and utilities, chemical/ petrochemical, food and beverage, OEM and HVAC. Each valve is manufactured in accordance with independent standards specifications and is 100% tested in both directions of operation to assure bubble-tight service for many years.

Features:

- Designed for 125/150 lbs flanges
- Standard 316SS disc and stem offers superior strength and chemical resistance
- Mounting pad with square shaft permits direct mount actuation that reduces hysteresis and cost (2" TO 12")
- Ribbed one-piece body for high strength and minimum weight
- Secured stem retainer plate for blowout-proof protection and also allows operator removal with valve in line
- High strength two-piece stem eliminates taper pins and disc screws from flow path
- Rated to 255 PSI (2"-12"), 188 PSI (14"-24")
- Cartridge style seat permits easy change without special tools
- Molded o-ring eliminates the need for flange gasket
- Shell tested to 150% and seat tested to 110% of maximum working pressure
- Lug bodies for dead-end service rated at 200 PSI * (2"-12"), 150 PSI* (14"-24")
- Wafer bodies cast iron to 12", ductile iron to 24", and Ductile iron lug bodies to 24"
- Dual PTFE shaft bearings for reduced torque and improved stem alignment
- Vacuum rated to 29.9196"Hg (0.01 Torr)+
- Epoxy coated body
- Low maintenance design

Standards:

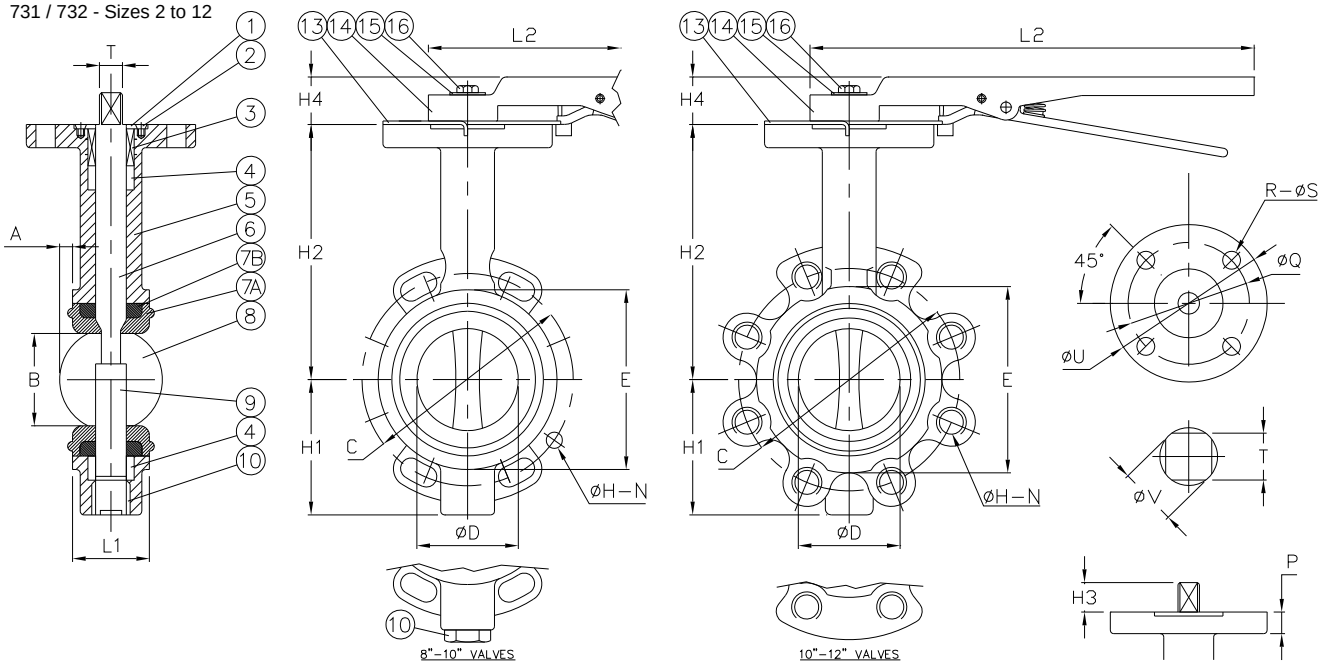
- Designed to: API 609A and MSS SP-67
- Seat Tested to: MSS SP-67
- Top Flange to: ISO 5211

* Lugged valve for dead-end service may only be used with weld neck or socket flanges. Not recommended for dead-end service of gas/air lines.

\+ 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.

Figure 731 & 732

731 / 732 - Sizes 2 to 12



731 / 732 - Sizes 14 to 24

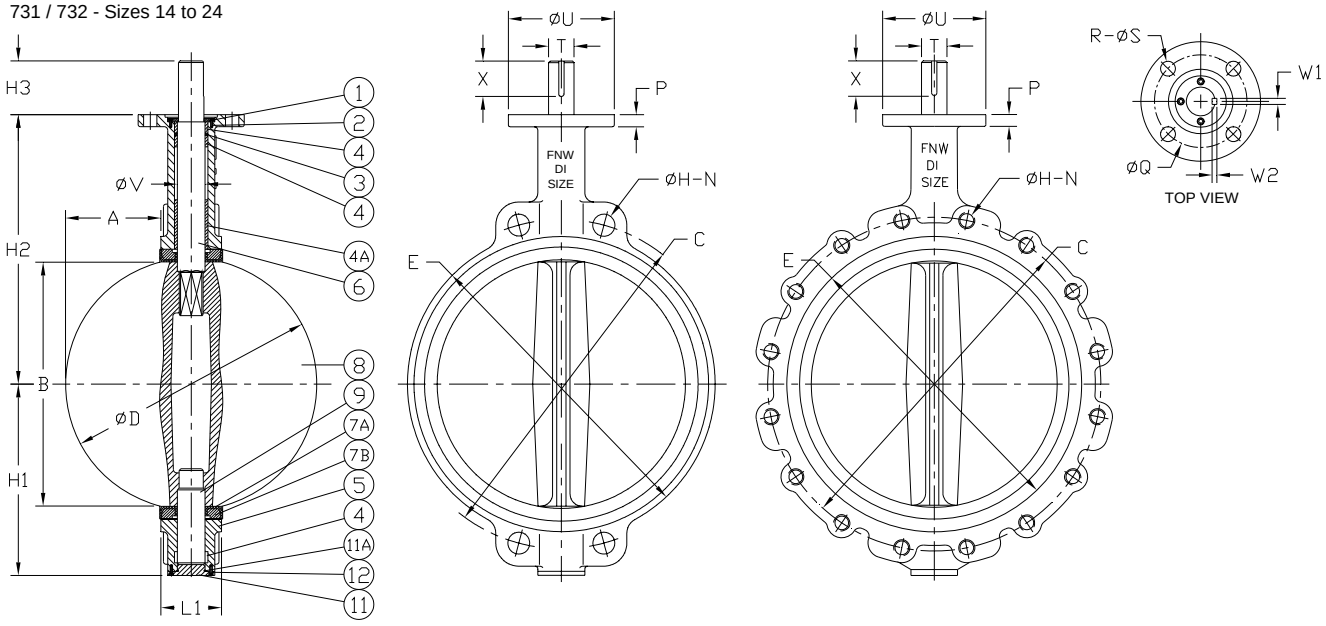


Figure 731 & 732

Dimensions (Inches) - 731 / 732 - Sizes 2 to 12

SIZE	A	B	ØD	E	H1	H2		H3	H4	L1	L2	C	ØH		N	P	ØQ	R	ØS	T	ØU	ØV
						731	732						731	732								
2"	0.18	1.93	1.99	3.66	2.77	5.06	4.94	0.60	1.06	1.69	11.37	4.75	0.75	5/8"-11	4	0.55	2.76	4	0.35	0.43	3.54	0.55
2-1/2"	0.41	2.52	2.61	4.25	2.95	5.36	5.20	0.60	1.06	1.81	11.37	5.50	0.75	5/8"-11	4	0.55	2.76	4	0.35	0.43	3.54	0.55
3"	0.67	3.03	3.11	4.96	3.67	5.64	6.07	0.60	1.06	1.81	11.37	6.00	0.75	5/8"-11	4	0.55	2.76	4	0.35	0.43	3.54	0.55
4"	0.94	3.82	3.92	5.91	4.18	6.41	6.54	0.70	1.06	2.05	11.37	7.50	0.75	5/8"-11	8	0.63	2.76	4	0.35	0.55	3.54	0.63
5"	1.36	4.80	4.89	6.97	4.69	7.34	7.13	0.70	1.06	2.20	11.37	8.50	0.87	3/4"-10	8	0.63	2.76	4	0.35	0.55	3.54	0.75
6"	1.86	5.83	5.89	8.19	5.48	7.98	7.84	0.75	1.06	2.20	11.37	9.50	0.87	3/4"-10	8	0.63	2.76	4	0.35	0.55	3.54	0.75
8"	2.69	7.62	7.70	10.20	6.51	9.34	9.26	0.81	1.02	2.36	17.83	11.75	0.87	3/4"-10	8	0.67	2.76	4	0.35	0.67	3.54	0.87
10"	3.52	9.65	9.72	12.48	7.86	11.13	10.50	0.81	1.02	2.68	17.83	14.25	0.98	7/8"-9	12	0.79	4.02	4	0.43	0.87	4.92	1.00
12"	4.28	11.54	11.63	14.61	9.47	12.27	12.15	0.95	1.02	3.07	17.83	17.00	0.98	7/8"-9	12	0.79	4.02	4	0.43	0.87	4.92	1.10

As of 12/2009, the indicated stem changes were instituted at the factory. If actuating, verify stem dimensions prior to fabrication.

Dimensions (Inches) - 731 / 732 - Sizes 14 to 24

SIZE	A	B	ØD	E		H1	H2	H3	L1	C	ØH		N	P	ØQ	R	ØS	T	ØU		ØV	W1	W2	X
				731	732						731	732							731	732				
14"	5.06	12.68	13.12	17.17	15.97	10.51	14.49	2.76	3.00	18.75	1.14	1"-8	12	0.748	4.02	4	0.47	1.10	4.92	5.51	1.24	0.39	0.20	2.36
16"	5.70	14.96	15.34	19.21	18.50	12.17	15.75	2.95	3.94	21.25	1.14	1"-8	16	0.787	5.51	4	0.71	1.26	6.89	7.76	1.49	0.39	0.20	2.36
18"	6.47	16.85	17.34	21.22	20.51	12.91	16.61	2.95	4.41	22.75	1.26	1-1/8"-7	16	0.787	5.51	4	0.71	1.50	6.89	7.76	1.69	0.47	0.20	2.36
20"	7.11	18.62	19.36	23.35	22.24	14.21	18.90	3.35	5.13	25.00	1.26	1-1/8"-7	20	0.866	6.50	4	0.87	1.77	8.27	8.27	1.80	0.47	0.20	2.76
24"	8.68	22.52	23.33	32.44	27.28	18.07	22.13	3.35	5.96	29.50	1.38	1-1/4"-7	20	0.866	6.50	4	0.87	2.13	8.27	8.27	2.13	0.55	0.20	2.76

Standard Materials

ITEM	DESCRIPTION	MATERIAL	QTY	REMARKS
1	RETAINING PLATE	ASTM A283D-A36, STEEL	1	GALVANIZED
2	RETAINING PLATE SCREW	ASTM A283D-A36, STEEL	2	GALVANIZED
			4	14" & LARGER, GALVANIZED
3	O-RING PACKING	EPDM	2	MOLDED IN 1 PIECE
			3	8 TO 12", MOLDED 1 PIECE
	STEM O-RING	ASTM D2000, NBR	1	14 TO 24"
4	STEM BUSHING	PTFE	2	2 TO 2-1/2", 1 UPPER, 1 LOWER
			3	3" & 14 - 24", 2 UPPER, 1 LOWER
			4	4" TO 12", 2 UPPER, 2 LOWER
4A	LONG STEM BUSHING	ASTM B584 C83600, BRONZE	1	14" & LARGER
5	BODY	ASTM A126, CAST IRON	1	FIG 731, 2 TO 12" ONLY
		ASTM A536 65-45-12, DUCTILE IRON		FIG 731, 14 TO 24", FIG 732, ALL
6	UPPER STEM	ASTM A276 SUS 316, STAINLESS	1	STANDARD
7A	SEAT *	EPDM OR BUNA	1	FIG 731/732 STANDARD
		VITON®		2 TO 12"

ITEM	DESCRIPTION	MATERIAL	QTY	REMARKS
7B	SEAT SUPPORT RING	PHENOL	1	2 TO 14", INTEGRAL TO SEAT
		ALUMINUM		16 TO 24", INTEGRAL TO SEAT
8	DISC	ASTM A351 CF8M, STAINLESS	1	STANDARD
9	LOWER STEM	ASTM A276 SUS 316, STAINLESS	1	STANDARD
10	PLUG	ASTM A283D-A36, STEEL	1	FIG 731/732
11	BOTTOM PLATE	ASTM A536 65-45-12, DUCTILE IRON	1	14" TO 24"
11A	BOTTOM PLATE O-RING	ASTM D2000, NBR	1	14" TO 24"
12	BOTTOM PLATE SCREW	ASTM A283D-A36, STEEL	2	QTY 4 ON 24"
13	LEVER STOP PLATE	ASTM A283D-A36, STEEL, NP	1	FOR 2 TO 12" 14" & LARGER, BARE
14	LEVER	ASTM A47 GRD 32510, MALLEABLE IRON	1	FOR 2 TO 12", 14" & LARGER, BARE
15	LEVER WASHER	ASTM A283D-A36, STEEL	1	2 TO 8", ZINC COATED
16	LEVER BOLT	ASTM A283D-A36, STEEL	1	2 TO 8", ZINC COATED

* Other seat materials and configurations available upon request

Seat Temperatures

Seat Material	Working Temp
EPDM	-22° to 230°F
Buna-N	-4° to 194°F
Viton®	-14° to 320°F

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, and pneumatic and electric operators, control accessories, stem extensions, and custom mounting hardware.

Contact FNW with your specific application needs.

Figure 731 & 732

Torque (in-lbs)

Size	Seat Material	
	EPDM & BUNA	VITON®
2	226	230
2-1/2	226	230
3	338	345
4	451	460
5	507	518
6	733	748
8	1,353	1,079
10	1,906	1,737
12	2,803	2,577
14	10,296	
16	13,466	
18	18,109	
20	22,366	
24	36,036	

1. All 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.

Weight

Size	Weight (Lbs)		
	Wafer	Lugged	Gear-Op
2	8.1	10.6	9.7
2-1/2	9.4	10.5	9.7
3	9.6	11.2	9.8
4	11.8	16.4	9.8
5	16.0	21.1	9.8
6	20.1	23.5	10.4
8	34.1	38.0	12.4
10	51.2	56.3	21.2
12	66.7	85.6	21.2
14	124	147	41.5
16	219	295	41.5
18	280	357	50.7
20	457	564	50.7
24	609	717	50.7

Cv (Flow Coefficient)

SIZE	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	1,100
6	96	140	245	400	785	1,010	1,615	1,910
8	165	245	410	685	1,275	1,715	2,670	3,185
10	255	380	650	1,130	2,100	2,700	4,250	4,900
12	370	540	950	1,570	3,050	3,950	5,950	7,350
14	450	750	1,300	2,210	4,080	5,610	8,078	11,200
16	640	900	1,720	2,790	5,000	7,650	10,770	12,900
18	730	1,250	2,295	3,700	7,050	9,180	13,900	17,500
20	910	1,595	2,850	4,630	8,600	11,500	17,540	22,400
24	1,250	2,290	4,000	6,090	12,500	16,500	23,590	28,300

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.

Figure Number Matrix

F N W 7 3 1 E G X

BODY MATERIAL
3 = CI (WAFER TO 12")
DI (WAFER, 14"-24")
DI (LUGGED)

BODY TYPE
1 = WAFER
2 = LUG

SEAT
E = EPDM
B = BUNA-N
V = VITON®

OPERATOR
BLANK = 10 POSITION LEVER (14"-24" BARE)
G = GEAR OPERATOR
A = ACTUATED (SPECIFY SEPARATELY)
S = STEM EXTENSION (SPECIFY LENGTH)
N = SQUARE OPERATING NUT (SPECIFY SIZE)
C = CHAIN WHEEL OPERATOR

SIZE CODES

2 = K	10 = 10
2-1/2 = L	12 = 12
3 = M	14 = 14
4 = P	16 = 16
5 = S	18 = 18
6 = U	20 = 20
8 = X	24 = 24

For other valve materials or configurations, contact FNW Valve at (503) 287-8383 for sales assistance.

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