

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 & 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 are 100% tested in both directions of operation to assure bubble-tight service.

FEATURES

- Bi-directional dead-end service at full rated pressure
- Designed for 125/150 lbs 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)¹
- 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

*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.

¹Vacuum 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.



Fig. 832

PRESSURE RATING

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

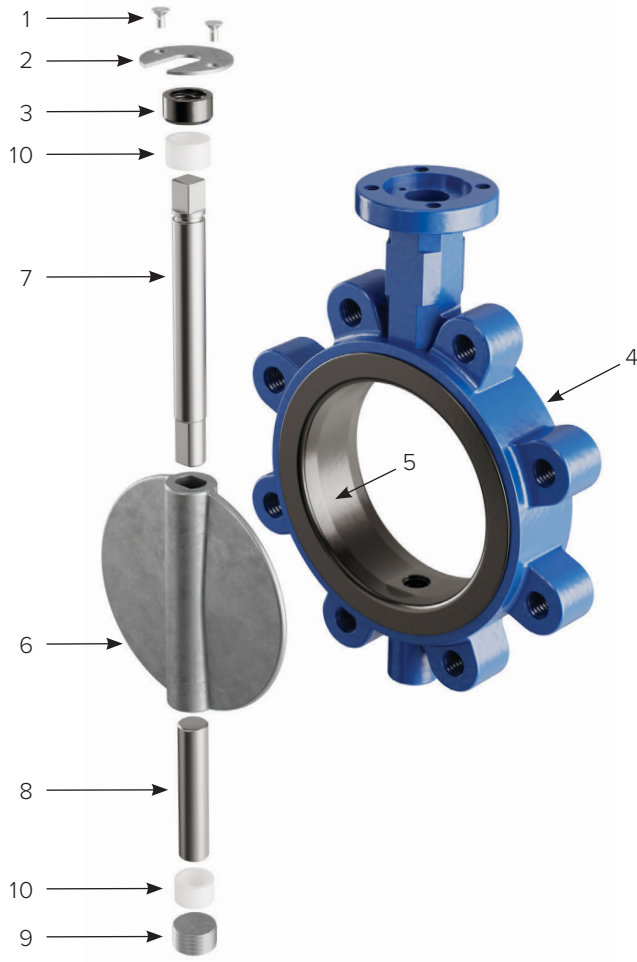
Options

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, and pneumatic and electric operators, control accessories, stem extensions, and custom mounting hardware. Contact FNW with your specific application needs.

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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

FNW						
SERIES	DISC MATERIAL	BODY STYLE	SEAT	OPERATOR	SIZE	
8 = 800	1 = Aluminum Bronze 3 = Stainless Steel (2"-24")	2 = Lug	E = EPDM B = Buna V = Viton	Blank = 10 Position Lever Handle G = Gear Operator	K = 2	10
					L = 2.5	12
					M = 3	14
					P = 4	16
					S = 5	18
					U = 6	20
					X = 8	24

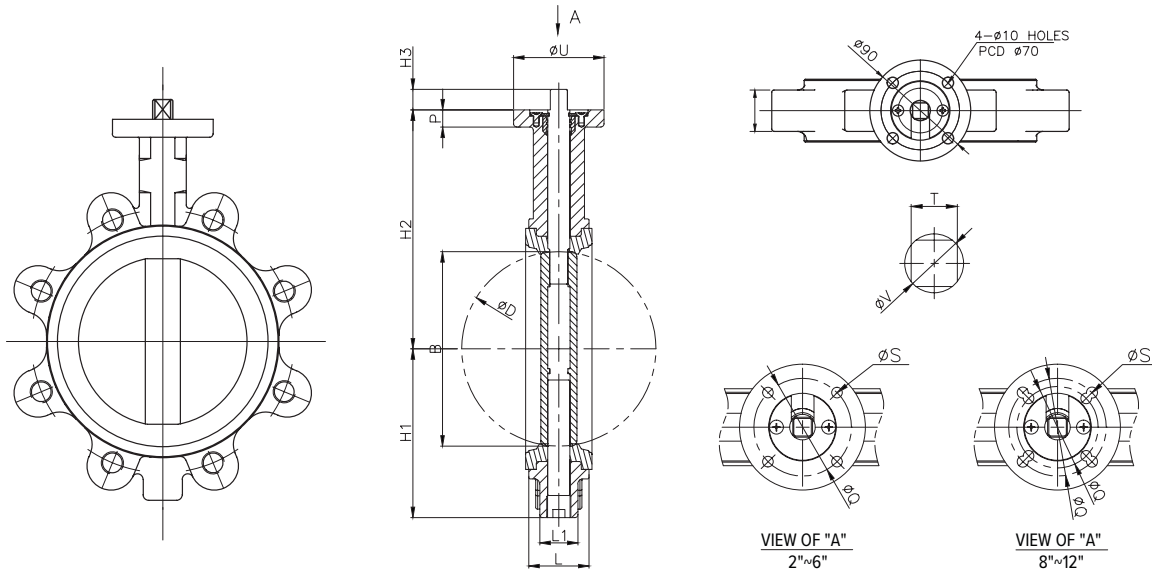
Example: Select one code from each category to build a complete valve order number: **FNW8XXXXX**

DIMENSIONAL DATA

SERIES 800
BUTTERFLY VALVES



RESILIENT-SEATED BUTTERFLY VALVES



DIMENSIONS (INCHES) SIZES 2" TO 12"

Size	B	D	H1	H2	H3	P	U	T	Q	V	L1	L	S	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" TO 12"

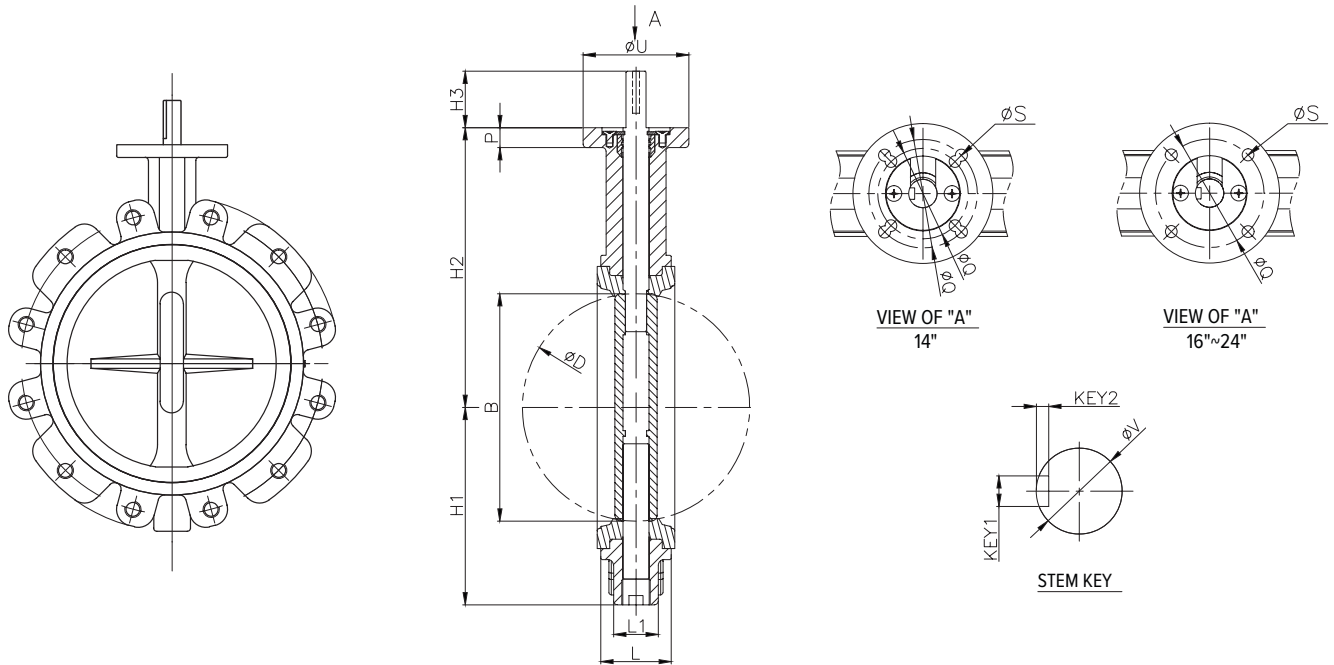
Size	B	D	H1	H2	H3	P	U	T	Q	V	L1	L	S	ISO
2"	49.0	52.0	70.4	125.4	15.2	14	90	11	70	14	27	43	10	F07
2-1/2"	64.0	67.0	75.0	132.1	15.2	14	90	11	70	14	29	46	10	F07
3"	77.0	80.0	93.2	154.2	15.2	14	90	11	70	14	30	46	10	F07
4"	97.0	100.0	106.2	166.2	17.7	16	90	14	70	16	33	52	10	F07
5"	122.0	125.0	119.0	181.1	17.7	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

DIMENSIONAL DATA

SERIES 800
BUTTERFLY VALVES



RESILIENT-SEATED BUTTERFLY VALVES



DIMENSIONS (INCHES) SIZES 14" TO 24"

Size	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" TO 24"

Size	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

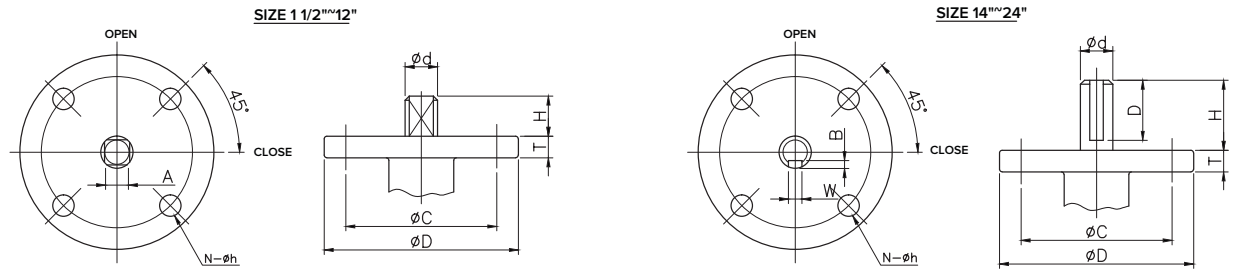
DIMENSIONAL DATA

SERIES 800
BUTTERFLY VALVES



RESILIENT-SEATED BUTTERFLY VALVES

Top Flange



DIMENSIONS (INCHES) SIZES 2" TO 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" TO 24"

Size	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

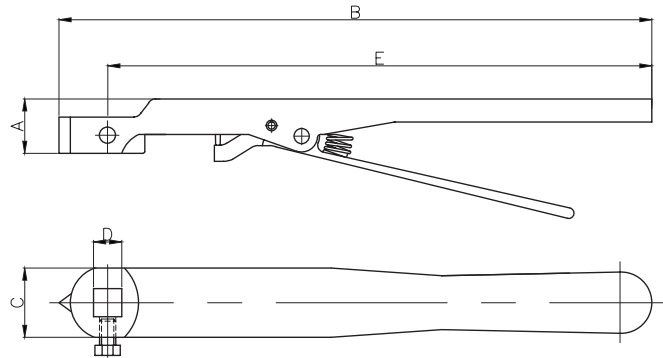
DIMENSIONAL DATA

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RESILIENT-SEATED BUTTERFLY VALVES

**10 Position
Lever Handle**



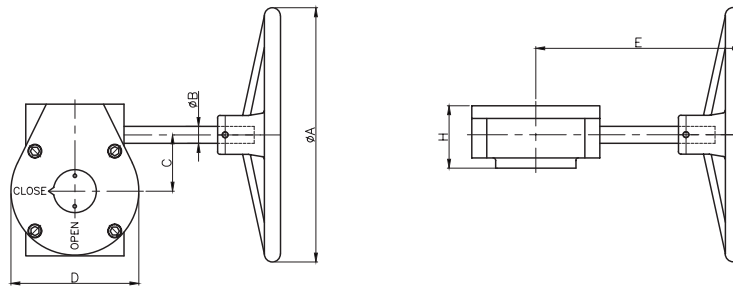
DIMENSIONS (INCHES)

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	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 (INCHES)

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	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

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WEIGHT (LBS)

Size	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	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	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.