

VSI

RESILIENT SEATED BUTTERFLY VALVES

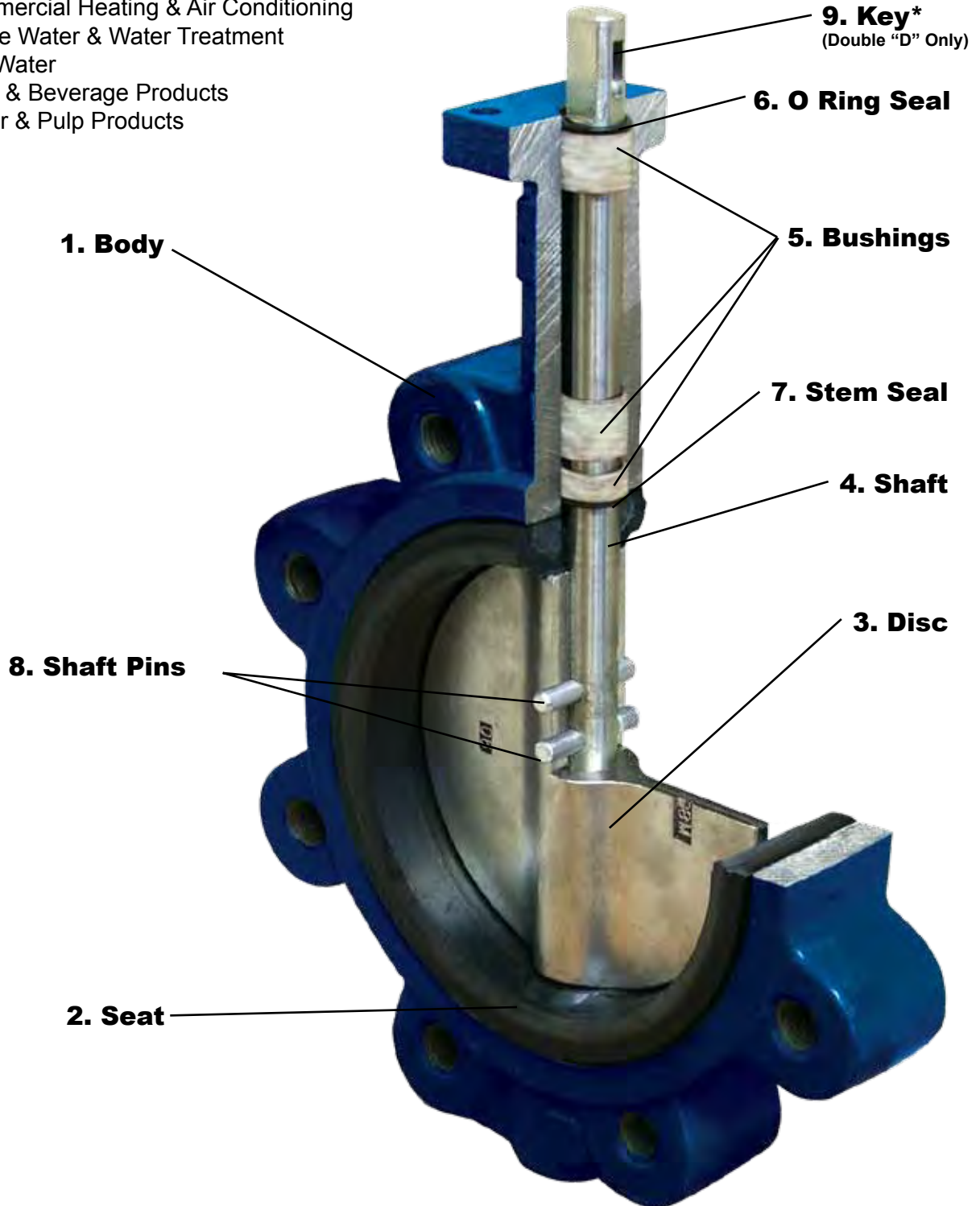


SERIES 2000

DESIGN CHARACTERISTICS

APPLICATIONS:

- Commercial Heating & Air Conditioning
- Waste Water & Water Treatment
- Sea Water
- Food & Beverage Products
- Paper & Pulp Products



MATERIALS AND DESIGN CHARACTERISTICS

MATERIALS SELECTION

2" - 30" (50mm - 750mm)

1. BODY:

- Ductile Iron* (A536 65-45-12)
- Cast Iron (A126 Class B)
- Stainless Steel

2. SEAT:

- EPDM*
- Neoprene
- Hypalon
- Viton
- High Temp Viton
- PTFE
- Buna-N

3. DISC:

- 304 Stainless Steel*
- 316 Stainless Steel
- Aluminum Bronze
- Ductile Iron
- Nylon Coated Ductile Iron

4. SHAFT:

- 416 Stainless Steel*
- 316 Stainless Steel
- Monel

5. BUSHINGS:

- PTFE*
- Luberized Bronze

6 & 7. O RINGS and STEM SEAL:

- Buna-N

8. SHAFT PINS:

- 316 Stainless Steel*
- Monel

9. KEY: (Double D Shaft Only)

- Carbon Steel

DESIGN CHARACTERISTICS

STEM DESIGN:

Available in square shaft (2"-14") or double "D" shaft (2"-24") for easy mounting of levers, gear operators and actuators.

MOUNTING BONNET:

Confirms to ISO 5211 for the mounting of actuators, handles and gear operators.

ONE PIECE SHAFT:

Maintains disk position.

RESILIENT SEAT SURFACE:

Eliminates the need for gaskets on flanges.

SHAFT PINS:

Enables a vibration free connection between the shaft and the disc.

UNI-DIRECTIONAL SECURED SEAT:

Phenolic backed seat is field replaceable and blow out proof.

O RING SEAL:

Provides a seal to interior stem and bushings.

BUSHINGS:

Provide correct alignment of shaft through the body and reduces torque.

STEM SEAL:

Positive seal in both directions to prevent leakage.

DISC EDGE:

Smooth finished disc edge provides superior seal, reduces valve torque and provides bubble tight shutoff.

UNI-DIRECTIONAL BODY & SEAT DESIGN:

Rated for 100psi standard.

BACKED SEAT SUPPORT:

Prevents stem leakage and allows for dead end service.

NOTE: Items marked with * are the standard offerings. Please contact Valve Solutions for other available options.

Cv VALUES AND SEAT RATINGS
Cv Values - Valve Sizing Coefficients (US - GPM @ 1ΔP)

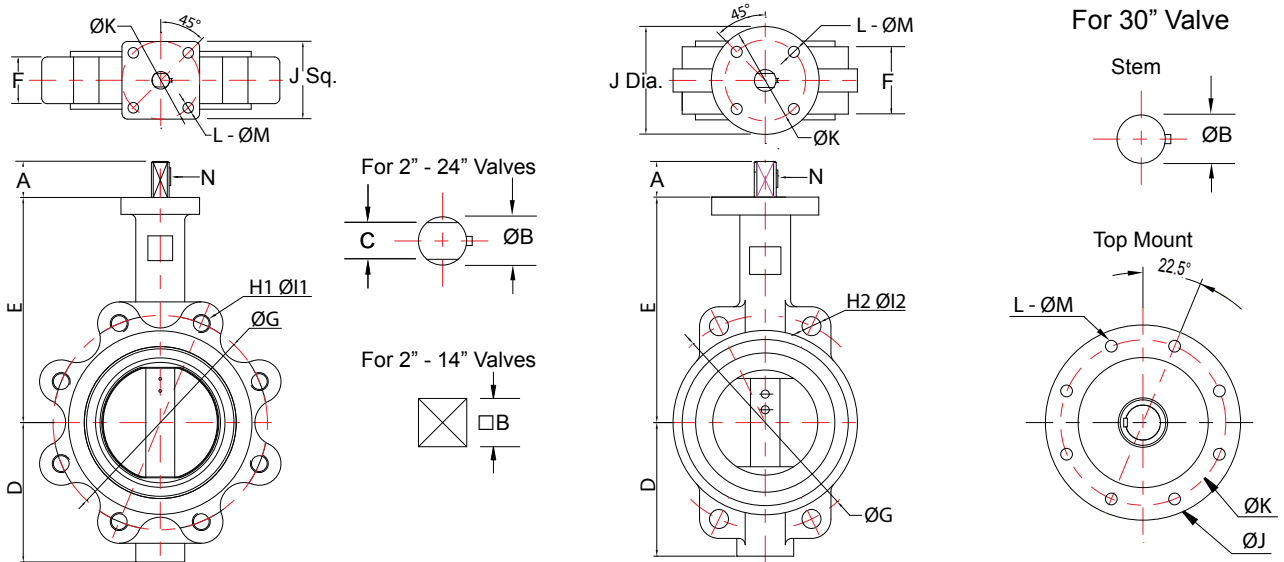
Valve Size		Position of Disc								
DIN	Inch	10°	20°	30°	40°	50°	60°	70°	80°	90°
50	2	0.06	3	7	14	26	42	67	101	111
65	2.5	0.10	6	12	24	43	72	114	171	188
80	3	0.19	9	17	38	67	112	176	263	290
100	4	0.29	16	35	75	134	195	350	525	577
125	5	0.48	28	59	128	228	377	596	894	983
150	6	0.77	43	91	197	352	582	921	1382	1518
200	8	1.92	86	181	389	699	1156	1830	2744	3015
250	10	2.88	145	308	667	1189	1968	3115	4672	5135
300	12	3.85	225	476	1031	1838	3040	4813	7218	7933
350	14	5.77	325	688	1489	2655	4392	6952	10427	11459
400	16	7.69	446	945	2048	3651	6040	9560	14339	15758
450	18	10.58	591	1252	2713	4835	8000	12662	18992	20870
500	20	13.46	761	1584	3488	6216	10287	16280	24419	26835
600	24	21.15	1175	2488	5390	9605	15892	25151	37727	41458
750	30	35.58	2000	4237	9179	16356	27064	42832	64248	70602

Cv is the number of gallons of water @ 60° F that can flow through a valve opening in one minute when there is a pressure differential across the valve of 1 pound per square inch(psi).

Seat Temperature Ratings

Material	Temperature Ratings °C (°F)
EPDM (2" - 16")	-34 to 107 (-30 to 225)
EPDM (18" & Larger)	-34 to 107 (-30 to 225)
PTFE	4 to 121 (40 to 250)
Buna-N	-12 to 82 (10 to 180)
Neoprene	-6 to 93 (20 to 200)
Hypalon	-17 to 135 (0 to 275)
Viton ®	-12 to 135 (10 to 275)
High Temp. Viton ®	-12 to 204 (10 to 400)

VALVE DIMENSIONS 2" - 30"



mm/ inches	□A	□B	ØA	ØB	C	D	E	F	ØG - BC	H1*	ØI1*	H2*	ØI2*	J	ØK - BC	L*	ØM	N
50 2"	30 1.18	11 .43	32 1¼	12.6 ½	10 0.39	85 3.35	161 6.34	43 1.69	120.7 4.75	4	5/8-11	4	19.05 ¾	90 3.54	70 2.76	4	10 3/8	Woodruff #3
65 2.5"	30 1.18	11 .43	32 1¼	12.6 ½	10 0.39	93 3.66	175 6.89	46 1.81	139.7 5.5	4	5/8-11	4	19.05 ¾	90 3.54	70 2.76	4	10 3/8	Woodruff #3
75 3"	30 1.18	11 .43	32 1¼	12.6 ½	10 0.39	99 3.9	181 7.13	46 1.81	152.4 6	4	5/8-11	4	19.05 ¾	90 3.54	70 2.76	4	10 3/8	Woodruff #3
100 4"	30 1.18	11 .43	32 1¼	15.77 5/8	12 0.47	116 4.57	200 7.87	52 2.05	190.5 7.5	8	5/8-11	4	19.05 ¾	90 3.54	70 2.76	4	10 3/8	Woodruff #3
125 5"	30 1.18	17 .67	32 1¼	18.92 ¾	14 0.55	130 5.12	213 8.39	56 2.20	215.9 8.5	8	¾-10	4	22.23 7/8	90 3.54	70 2.76	4	10 3/8	Woodruff #9
150 6"	30 1.18	17 .67	32 1¼	18.92 ¾	14 0.55	144 5.67	226 8.90	56 2.20	241.3 9.5	8	¾-10	4	22.23 7/8	90 3.54	70 2.76	4	10 3/8	Woodruff #9
200 8"	42 1.65	22 .87	45 1¾	22.1 7/8	17 0.67	177 6.97	260 10.24	60 2.36	298.5 11.75	8	¾-10	4	22.23 7/8	125 4.92	102 4.02	4	12 7/16	Woodruff #9
250 10"	42 1.65	27 1.06	45 1¾	28.45 1 1/8	22 0.87	202 7.95	292 11.50	68 2.68	362 14.25	12	7/8-9	4	25.4 1	125 4.92	102 4.02	4	12 7/16	Woodruff #15
300 12"	42 1.65	27 1.06	45 1¾	31.6 1 1/4	24 0.95	241 9.49	337 13.27	78 3.07	431.8 18.75	12	7/8-9	4	25.4 1	125 4.92	102 4.02	4	12 7/16	Woodruff #15
350 14"	42 1.65	27 1.06	45 1¾	31.6 1 1/4	24 0.95	280 11.02	368 14.49	78 3.07	476.3 18.75	12	1-8	4	28.58 1 1/8	125 4.92	102 4.02	4	12 7/16	Woodruff #15
400 16"			51 2	33.2 1 5/16	27 1.06	315 12.4	401 15.79	86 3.39	539.8 21.25	16	1-8	4	28.58 1 1/8	210 8.27	165 6.5	4	23 7/8	5/16 Sq x 1 1/4
450 18"			51 2	38 1 1/2	27 1.06	333 13.11	422 16.61	105 4.13	577.9 22.75	16	1 1/8-7	4	31.75 1 1/4	210 8.27	165 6.5	4	23 7/8	3/8 Sq x 1 1/2
500 20"			64 2 1/2	41 1 5/8	32 1.26	365 14.37	479 18.86	130 5.12	635 25	20	1 1/8-7	4	31.75 1 1/4	210 8.27	165 6.5	4	23 7/8	3/8 Sq x 1 3/4
600 24"			70 2 3/4	50.6 2	36 1.42	463 18.23	562 22.13	152 5.98	749.3 29.5	20	1 1/4-7	4	34.93 1 3/8	210 8.27	165 6.5	4	23 7/8	1/2 Sq x 2 1/4
750 30"			70 2 3/4	63.3 2 1/2	-	555 21.85	648 25.51	167 6.57	914 36	28	1 1/4-7	4	1 1/4-7	300 11.8	254 10	8	18 1/2	5/8 Sq x 2 5/8

H1* and ØI1* refer to lug style body types, H2* and ØI2* refer to wafer style bodies. Dimension F is the face to face of the valve body. This does not account for the valve seat. Approximately 1/8" additional spacing is required for proper seating with the pipe flanges. The installation does not require gaskets, as the valve seat creates the seal against the mounting flange. The Series 2000 valves are designed to be installed between ANSI B16.1 Class 125 (Iron) and Class 150 (Steel) pipe flanges.

WEIGHTS AND TORQUE VALUES
Valve Weights kg/lb

Size	50 2"	65 2.5"	75 3"	100 4"	125 5"	150 6"	200 8"	250 10"	300 12"	350 14"	400 16"	450 18"	500 20"	600 24"	750 30"
Lug	4 8.84	4 8.84	5 11.05	8 17.68	11 24.31	13 28.73	19 41.99	30 66.3	41 90.61	55 121.55	85 187.85	113 249.73	164 362.44	241 532.61	440 972.4
Wafer	3 6.63	3 6.63	4 8.84	5 11.05	7 15.47	9 19.89	14 30.94	21 46.41	31 68.51	47 103.87	65 143.65	75 165.75	111 245.31	187 413.27	335 740.35

Valve Torque Chart

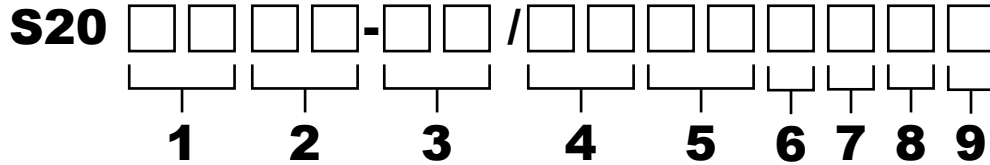
Valve Size		Full Rated Disc						Undercut Disc*	
DIN	Inch	6 bar (87psi)		10 bar (145psi)		16 bar (232psi)		7 bar (100psi)	
		Nm	in/lb	Nm	in/lb	Nm	in/lb	Nm	in/lb
50	2	10	89	11	97	11	97	10	92
65	2.5	16	142	17	150	18	159	16	142
80	3	21	186	31	274	23	204	22	191
100	4	31	274	34	301	37	327	32	281
125	5	46	407	52	460	57	504	47	418
150	6	66	584	75	664	84	743	68	601
200	8	114	1009	126	1115	137	1213	97	860
250	10	180	1593	199	1761	219	1938	74	654
300	12	268	2372	290	2567	312	2761	171	1517
350	14	347	3071	395	3496	931	8240	273	2415
400	16	551	4877	621	5496	1225	10842	424	3750
450	18	818	7240	927	8205	1645	14559	652	5775
500	20	1037	9178	1130	10001	2310	20445	795	7035
600	24	1900	16816	2056	18197	3710	32836	1435	12705
750	30	3323	29411	2339	31500	6782	60026	2503	22155

* Standard offering for actuated valves

Torque values were achieved using water @ 25°C. For deriving torque values for dry gases please multiply by 1.7. For torques using other media, please contact Valve Solutions Inc.

There is no safety factor included in the above numbers. For actuator sizing in a 2-way configuration, please use a safety factor of 1.2. For actuator sizing for a 3-way assembly, please use a safety factor of 1.5.

VSI Part Numbering System



1. Stem	Code
Round Shaft*	00
Square Shaft	10

2. Disc	Code
304 Stainless Steel*	SS
Aluminum Bronze	AB
316 Stainless Steel	S3
Nylon Coated	NC
Ductile Iron	DI
Monel	MN

3. Size	Code
2"	02
2.5"	25
3"	03
To	
48"	48

4. Body	Code
Ductile Iron* (A536 65-45-12)	DI
Cast Iron (A126 Class B)	CI

5. Seat	Code
EPDM*	EP
Buna-N	BN
Viton	VI
PTFE	PT
Hypalon	HY
High Temp Viton	HV

6. Series	Code
200 Lug Unidirectional Dead End*	U
200 Lug Bidirectional Dead End	B
200 Wafer Unidirectional Dead End	W

7. Pressure	Code
100 PSI*	0
150 PSI	1
200 PSI	2

8. Shaft	Code
316 Stainless Steel	0
416 Stainless Steel*	1
Monel	2

9. Bushing	Code
PTFE*	0
Luberized Bronze	1

* Denotes standard product options

WARRANTY INFORMATION

VSI Limited Product Warranty

This limited warranty applies in the United States to products manufactured by Valve Solutions, Inc. Valve Solutions, Inc. warrants the product purchased from it or its authorized reseller to be free from defects in material and workmanship under normal use during the one year warranty period from the date of its purchase. Other products not manufactured by Valve Solutions, Inc. which are provided as part of an assembly may carry additional warranties from that manufacturer or supplier.

During the warranty period, Valve Solutions, Inc. will repair or replace defective parts of the product, or, at Valve Solutions, Inc. sole option, issue a credit for the original purchase price of the product. Repaired or replaced product will be warranted hereunder only for the remaining portion of the original warranty period. All exchanged products under this Limited Warranty will become the property of Valve Solutions, Inc. A proper Return Material Authorization (RMA) number will have to be obtained for all products to be returned under this Limited Warranty. Any claim under this Limited Warranty must include a description of the problem encountered and any relevant information that may assist Valve Solutions, Inc. in the replication or resolution of the problem.

This Limited Warranty is transferable during its term to the end user of the product. Any transfer shall not extend or alter the terms of this Limited Warranty.

This Limited Warranty extends only to products purchased from Valve Solutions, Inc. or its authorized reseller and does not extend to any product that has been damaged or rendered defective as a result of (a) modification, repair, alteration or improper installation by any person other than Valve Solutions, Inc. or its authorized representative; (b) unreasonable or improper use or storage, use beyond rated conditions, operation other than per Valve Solutions, Inc. or the manufacturer's instructions, or being otherwise subjected to improper maintenance, negligence or accident; or (c) any use of the product after purchaser has knowledge of any defect in the product.

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Commercial, Industrial & Municipal Valve Automation

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