

# BF

# Series 82

## Butterfly Valve

## Pneumatic - Spring Return 80 psi

### Description

The BF Series Pneumatic spring return assemblies are available in 2-way and 3-way configurations 2"-24". Two way assemblies are complete with full lugged bodies, 304 stainless disc (2"-24"), EPDM seat, and mounted with a mounting kit to a pneumatic actuator. Three way assemblies are complete with (2) lugged valves mounted on a cast iron tee with linkage kit to a pneumatic actuator for use in either mixing or diverting applications. These two and three way assemblies are suitable for indoor or outdoor applications.

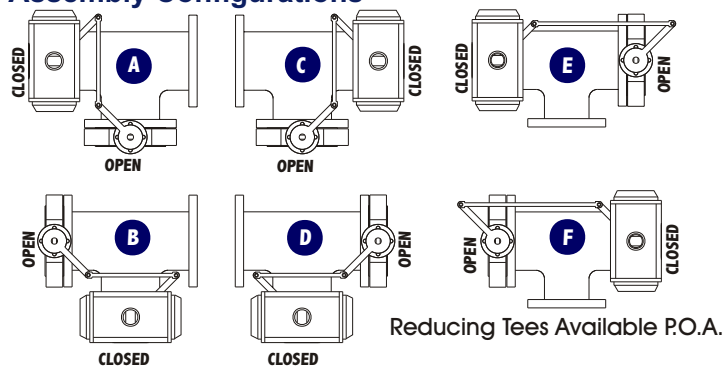
### Operation

Valve assemblies with pneumatic high pressure actuators are energized when air is supplied to port (A) forcing the pistons away from each other and the springs to compress, with the valve rotating to the next position. When air is not applied, loss of pressure allows the compressed springs to extend and rotate the pistons back to the start position. On loss of air supply the actuator fails to the preset default position. Factory mounted, tested, and calibrated, these assemblies provide accurate and automatic valve positioning for temperature control.

### Actuator Performance

- Housing protection corrosion resistant weatherproof with a hard anodized finish
- Supply pressure minimum 80 psi, maximum 150 psi
- Operating media is clean dry air or non corrosive gas
- Compact and efficient rack and pinion design
- Travel stops for stroke adjustment
- Linear torque output through 90° stroke
- Square female input shaft allows for easy field rotation of actuator to conform to tight areas
- Permanently lubricated rack and pinion
- Namur drilling permits direct mounting of solenoid valves
- Spring return fails to preset position, open or closed
- Position indicator confirms valve travel
- Controls are on/off and modulating 4-20 ma, 3-15 psi
- 2-year warranty

### Assembly Configurations

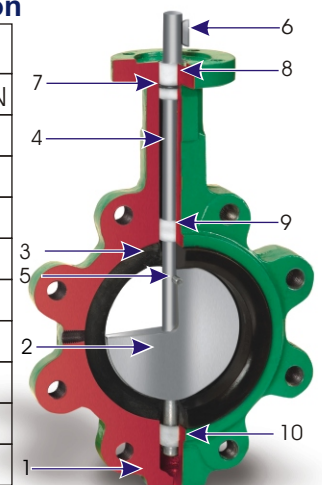


### Valve Performance

- 2-way and 3-way assemblies 2" -16" (18"-24" P.O.A.)
- Valves comply with MSS SP-67 and ANSI specifications, for industry standard face to face requirements
- Lug bodies compatible with ANSI 125/150# flanges
- Extended 2" neck for insulation clearance
- 304 stainless steel disc for corrosion resistance
- Phenolic backed cartridge style seat which is non-collapsible, stretch resistant and blow out proof
- Maximum seat temperature EPDM -30°F to +275°F
- Maximum valve rating is 200 psi
- Bi-directional, bubble tight close off
- Maximum steam rating 15 psi (EPDM only)
- Valve seat does not require gaskets
- Valve rated for dead end service

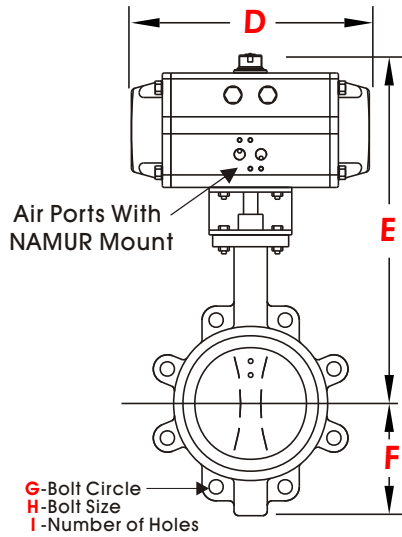
### Standard Valve Construction

Item	Description	Materials
1	BODY	DUCTILE IRON
2	DISC	304 SS
3	SEAT	EPDM
4	SHAFT	416 SS
5	TAPER PINS	316 SS
6	KEY	416 SS
7	O-RING	BUNA-N
8	BUSHING	PTFE
9	BUSHING	PTFE
10	BUSHING	PTFE

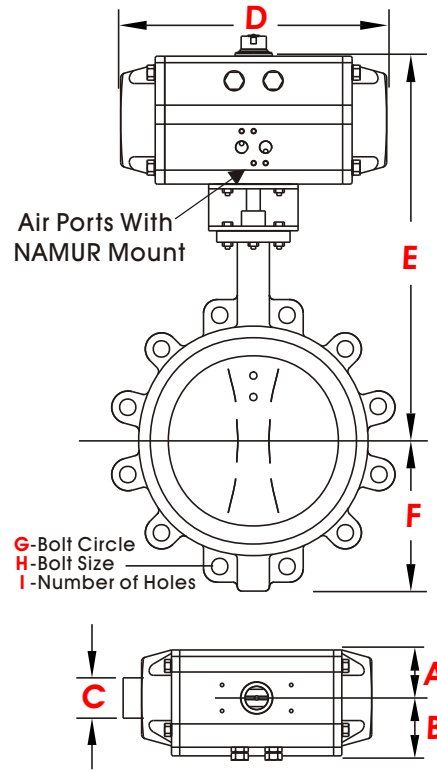


## 2-Way Spring Return

## Dimensional Data



2" - 8" Full Cut Undercut 8", 10", 12"



10", 12", 14", and 16" (18" - 24" P.O.A.)

Standard Assembly, 304 Stainless Disc, EPDM Seat, Spring Return Actuator  
 Modulating Service Change Last letter O to, E (4-20 ma) or P (3-15 psi), in Model #, Accessories on page 4

Assembly Specification				Speed 90°		Air Ports	82series operator	Assembly Dimensions								
Size	Model Number	Close off	Wt.	Air	Spring	(NPT)	On/off	inch								
in		Psi	lb	Open	Close		Mod.	A	B	C	D	E	F	G	H	I
DN		Bar	Kg	(sec.)	(sec.)			mm								
2 50	BF202FA82O	200 14	21 10	0.4	0.5	1/8"	75 SR	1 3/8 38.1	2 1/8 53.9	1 3/4 44.5	8 1/4 209.6	14 1/2 368.3	3 1/4 82.3	4 3/4 120.7	5/8 - 11 UNC	4
2 1/2 65	BF225FA82O	200 14	22 10	0.4	0.5	1/8"	75 SR	1 5/8 38.1	2 1/8 53.9	1 7/8 47.6	8 1/4 209.6	15 381.0	3 3/4 95.3	5 1/2 139.7	5/8 - 11 UNC	4
3 80	BF203FA82O	200 14	31 14	0.5	0.6	1/8"	88 SR	2 50.8	2 1/8 59.2	1 7/8 47.6	9 3/4 247.7	15 3/4 400.1	4 101.6	6 152.4	5/8 - 11 UNC	4
4 100	BF204FA82O	200 14	47 21	0.5	0.6	1/8"	100 SR	2 50.8	2 1/2 59.2	2 1/8 53.9	9 3/4 247.7	16 1/2 419.1	4 7/8 123.8	7 1/2 190.5	5/8 - 11 UNC	8
5 125	BF205FA82O	200 14	61 28	1.1	1.4	1/4"	125 SR	2 3/4 69.9	3 1/4 82.5	2 1/4 57.2	13 1/2 342.9	19 482.6	5 3/8 136.5	8 1/2 215.9	3/4 - 10 UNC	8
6 150	BF206FA82O	200 14	64 29	1.1	1.4	1/4"	135 SR	2 3/4 69.9	3 1/4 82.5	2 1/4 57.2	13 1/2 342.9	19 1/2 495.3	5 7/8 149.2	9 1/2 241.3	3/4 - 10 UNC	8
8 200	BF208FA82O	200 14	93 42	1.7	2.1	1/4"	160 SR	4 101.0	4 101.0	2 1/2 63.5	17 3/4 450.9	23 3/8 593.7	7 1/8 180.9	11 3/4 298.5	3/4 - 10 UNC	8
8-U 200	BF208UA82O	100 7	83 38	1.1	1.4	1/4"	135 SR	2 3/4 69.9	3 1/4 82.5	2 1/2 63.5	13 1/2 342.9	22 558.8	7 1/8 180.9	11 3/4 298.5	3/4 - 10 UNC	8
10 250	BF210FA82O	200 14	183 83	1.7	2.1	1/4"	200 SR	4 101.0	4 101.0	2 3/4 69.9	17 3/4 450.9	24 1/2 622.3	8 1/4 209.6	14 1/4 361.9	7/8 - 9 UNC	12
10-U 250	BF210UA82O	100 7	121 55	1.1	1.4	1/4"	135 SR	2 3/4 69.9	3 1/4 82.5	2 3/4 69.9	13 1/2 342.9	23 3/8 587.4	8 1/4 209.6	14 1/4 361.9	7/8 - 9 UNC	12
12 300	BF212FA82O	200 14	249 113	5.2	6.8	1/4"	300 SR	4 1/2 114.3	4 3/4 120.7	3 1/8 79.4	28 1/4 717.6	27 685.8	9 3/4 247.7	17 431.8	7/8 - 9 UNC	12
12-U 300	BF212UA82O	100 7	184 84	1.7	2.1	1/4"	160 SR	4 101.0	4 101.0	3 1/8 79.4	17 3/4 450.9	26 1/3 668.8	9 3/4 247.7	17 431.8	7/8 - 9 UNC	12
14 350	BF214RD82O	150 10	299 136	5.2	6.8	1/4"	300 SR	4 1/2 114.3	4 3/4 120.7	3 1/8 79.4	28 1/8 714.4	29 1/4 742.9	8 1/4 279.4	14 1/4 476.3	1 - 8 UNC	12
16 400	BF216RD82O	150 10	342 155	5.0	5.0	1/4"	500 SR	4 1/2 114.3	4 3/4 120.7	3 1/2 88.9	32 812.8	31 787.4	12 304.8	21 1/4 539.8	1 - 8 UNC	16

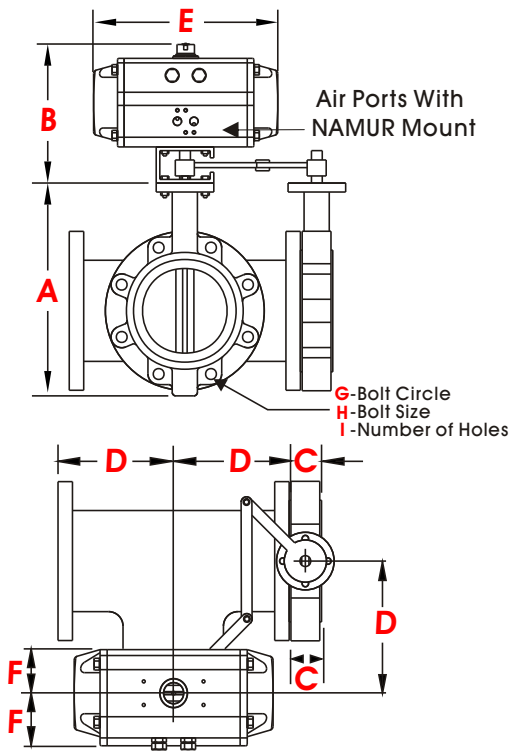
NOTE: Above Actuators Sized For Minimum of 80 psi, Speed Controls Available for Different Opening and Closing Times

# BF Series 82

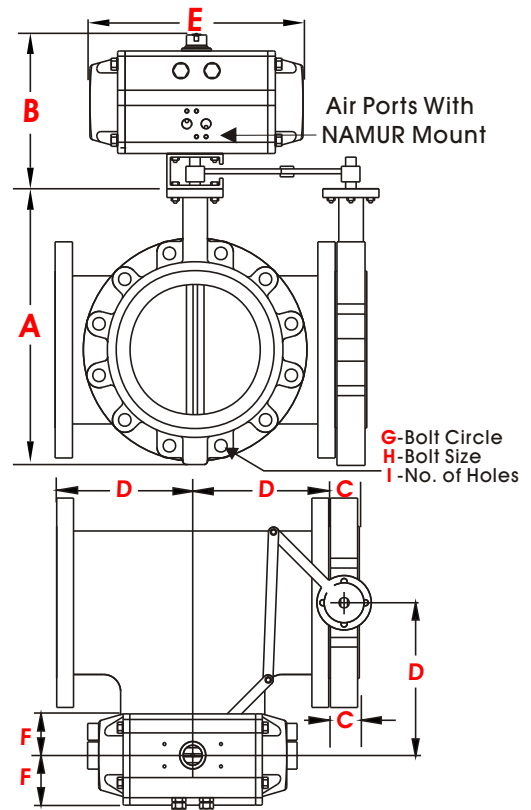


## 3-Way Spring Return

## Dimensional Data



2" - 8" Full Cut Undercut 8", 10", 12"



10", 12", 14", and 16" (18"- 24" P.O.A.)

Standard Assembly, 304 Stainless Disc, EPDM Seat, Spring Return Actuator

Modulating Service Change Last letter O to, E (4-20 ma) or P (3-15 psi), in Model #, Accessories on page 4

Assembly Specification				Speed 90°		Air	82series	Assembly Dimensions									
Size	Model Number	Close off	Wt.	Air	Spring	Ports	operator										inch
in		Psi	lb	Open	Close	(NPT)	On/off	A	B	C	D	E	F	G	H	I	mm
DN		Bar	Kg	(sec.)	(sec.)		Mod.										
2 50	BF302FA82O	200 14	49 22	0.5	0.6	1/8"	88 SR	9 5/8 244.4	8 1/2 215.9	1 3/4 44.5	4 1/2 114.3	9 3/4 247.7	2 50.8	4 3/4 120.7	5/8 - 11 UNC	4	
2 1/2 65	BF325FA82O	200 14	60 27	0.5	0.6	1/8"	88 SR	10 5/8 269.9	8 1/2 215.9	1 7/8 47.6	5 127.0	9 3/4 247.7	2 50.8	5 1/2 139.7	5/8 - 11 UNC	4	
3 80	BF303FA82O	200 14	85 39	0.5	0.6	1/8"	88 SR	11 1/8 282.6	8 1/2 215.9	1 7/8 47.6	5 1/2 139.7	9 3/4 247.7	2 50.8	6 152.4	5/8 - 11 UNC	4	
4 100	BF304FA82O	200 14	148 67	1.1	1.4	1/4"	125 SR	12 3/4 323.9	11 1/8 295.3	2 1/8 53.9	6 1/2 165.1	13 1/2 342.9	3 76.2	7 1/2 190.5	5/8 - 11 UNC	8	
5 125	BF305FA82O	200 14	180 82	1.7	2.1	1/4"	160 SR	13 3/4 349.3	13 330.2	2 1/4 57.2	7 1/2 190.5	17 3/4 450.9	4 101.6	8 1/2 215.9	3/4 - 10 UNC	8	
6 150	BF306FA82O	200 14	210 95	1.7	2.1	1/4"	160 SR	14 3/4 374.7	13 330.2	2 1/4 57.2	8 203.2	17 3/4 450.9	4 101.6	9 1/2 241.3	3/4 - 10 UNC	8	
8 200	BF308FA82O	200 14	369 168	1.7	2.1	1/4"	160 SR	17 3/8 441.3	13 330.2	2 1/2 63.5	9 228.6	17 3/4 450.9	4 101.6	11 3/4 298.5	3/4 - 10 UNC	8	
8 - U 200	BF308UA82O	100 7	307 140	1.7	2.1	1/4"	135 SR	17 3/8 441.3	13 330.2	2 1/2 63.5	9 228.6	17 3/4 450.9	4 101.6	11 3/4 298.5	3/4 - 10 UNC	8	
10 250	BF310FA82O	200 14	554 252	5.2	6.8	1/4"	200 SR	19 3/4 501.7	14 1/4 361.9	2 3/4 69.9	11 279.4	28 1/8 714.4	9 1/4 234.9	14 1/4 361.9	7/8 - 9 UNC	12	
10 - U 250	BF310UA82O	100 7	458 208	1.7	2.1	1/4"	135 SR	19 3/4 501.7	13 330.2	2 3/4 69.9	11 279.4	17 3/4 450.9	4 101.6	14 1/4 361.9	7/8 - 9 UNC	12	
12 300	BF312FA82O	200 14	734 337	5.0	5.0	1/4"	300 SR	21 533.4	14 1/4 361.9	3 1/8 79.4	12 304.8	32 812.8	9 1/4 234.9	17 431.8	7/8 - 9 UNC	12	
12 - U 300	BF312UA82O	100 7	698 317	1.7	2.1	1/4"	160 SR	21 533.4	13 330.2	3 1/8 79.4	12 304.8	17 3/4 450.9	4 101.6	17 431.8	7/8 - 9 UNC	12	
14 350	BF314RD82O	150 10	984 447	5.0	5.0	1/4"	500 SR	25 1/2 647.7	14 1/4 361.9	3 1/8 79.4	14 355.6	32 812.8	9 1/4 234.9	18 3/4 476.3	1 - 8 UNC	12	
16 400	BF316RD82O	150 10	1292 587	9.9	9.9	1/4"	600 SR	27 3/4 704.9	14 1/4 361.9	3 1/2 88.9	15 381.1	39 990.6	9 1/4 234.9	21 1/4 539.8	1 - 8 UNC	16	

NOTE: Above Actuators Sized for Minimum of 80 psi, Speed Controls Available for Different Opening and Closing Times

4575 Damascus Rd.  
Memphis, Tn. 38118

VALVES ★ ACTUATORS ★ ACCESSORIES

Phone (901) 794-5790  
Fax (901) 363-1123

## Engineering / Order Code

Flow Coefficients ( $C_v$ ) Degrees represent angle of disc opening  
Single Valve Assembly

Size	10°	20°	30°	40°	50°	60°	70°	80°	90°
2"	0.06	3	7	15	27	44	70	105	115
2 1/2"	0.10	6	12	25	45	75	119	278	196
3"	0.20	9	18	39	70	116	183	275	302
4"	0.30	17	36	78	139	230	364	546	600
5"	0.50	29	61	133	237	392	620	930	1022
6"	0.80	45	95	205	366	605	958	1437	1579
8"	2	89	188	408	727	1202	1903	2854	3136
10"	3	151	320	694	1237	2047	3240	4859	5340
12"	4	234	495	1072	1911	3162	5005	7507	8250
14"	6	338	715	1549	2761	4568	7230	10844	11917
16"	8	464	983	2130	3797	6282	9942	14913	16388
18"	11	615	1302	2822	5028	8320	13168	19752	21705

### Three-Way Valve Assembly

Size	10°	20°	30°	40°	45°	50°	60°	70°	80°	90°
2"	105	73	51	42	42	42	51	73	105	115
2 1/2"	178	125	87	70	70	70	87	125	178	196
3"	275	192	134	109	109	109	134	192	275	302
4"	546	381	266	217	217	217	266	381	546	600
5"	931	649	453	370	370	370	453	649	931	1022
6"	1438	1003	700	571	571	571	700	1003	1438	1579
8"	2856	1992	1390	1135	1135	1135	1390	1992	2856	3136
10"	4862	3391	2367	1931	1931	1931	2367	3391	4862	5340
12"	7511	5239	3657	2983	2983	2983	3657	5239	7511	8250
14"	10850	7568	5283	4310	4310	4310	5283	7568	10850	11917
16"	14921	10406	7265	5927	5927	5927	7265	10406	14921	16388
18"	19763	13783	9622	7850	7850	7850	9622	13783	19763	

The flow characteristic of a valve is described as the  $C_v$  value.  $C_v$  is defined as the max flow of 60°F water expressed in GPM (Gallons per minute) which produces a 1 psi pressure drop across the valve.

### Assembly Number

Standard Construction

Accessories



Butterfly Valve Assembly, 2-Way, 10", Full Cut 200 psi close, 304 Stainless Disc, EPDM Seat, Pneumatic Spring Return, Modulating 4-20 ma input

#	ITEM	CODE	DESCRIPTION	#	ITEM	CODE	DESCRIPTION
1 & 2	Series	BF	Butterfly Valve	7	Construction	A C	304 SS Disc, EPDM Seat 304 SS Disc, Teflon Seat
3	Assembly	2 3	2-Way Configuration 3-Way Configuration	8 & 9	Actuator	82	Spring Return
4 & 5	Size	02 25 to 16	2" - 16" Assemblies	10	Controls	O E P	On/Off Electronic 4-20 input Pneumatic 3-15 input
6	Close Off	F R U	Full Cut 200 psi Reduced Cut 150 psi Under Cut 100 psi	11 & 12	Accessories	S L C Q	EP Solenoid Valve Limit Switch w/ Visual EP w/ Limit Switch Limit Switch w/ Feedback

Please Specify 3-way Configurations Located On Front Of Brochure