

## BF

## Series 43

### Butterfly Valve

### Electric 220 VAC - NEMA 4

#### Description

The BF Series 43 electric actuated valve assemblies are rated NEMA 4 for outdoor use. These assemblies are available in 2-way and 3-way configurations 2"-12", in a non-spring return type. Two way assemblies are complete with full lugged bodies, 304 stainless disc, EPDM seat, and direct mounted to an electric actuator. Three way assemblies are complete with (2) lugged valves mounted on a cast iron tee with linkage kit to an electric actuator for use in either mixing or diverting applications.

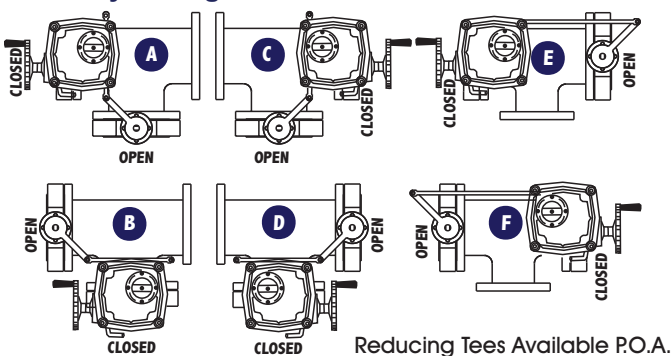
#### Operation

Valve assemblies with NEMA 4 electric actuators are powered by 220 VAC voltage. Each actuator is controlled by either on/off or modulating commands. All actuators contain reversible type, high torque output motors. These motors are protected with torque switches. The limit switches are independently operated by adjustable cams in each direction of operation. Light indication with (2) auxiliary switches are standard. Factory mounted, tested, and calibrated, these assemblies provide accurate and automatic valve positioning for temperature control.

#### Actuator Performance

- Housing NEMA 4 (indoor or outdoor applications) protects against wind blown dust, rain, splashes and hose water
- Agency approved listings: CE,
- Power supply 220 VAC 50/60 Hz / Single Phase
- Controls available are on/off or mod. ( 4-20 MA, 0-10 VDC)
- Manual handwheel override standard on each actuator
- Visual position indicator that confirms valve travel
- Noise level: 50 DB maximum
- Operating temperature: -40°F to +140°F
- Self-locking, permanently lubricated, worm gear train that prevents backdrive and the need for a mechanical brake
- Heater, thermostat standard to minimize condensation
- Auxiliary switches standard
- Mechanical stops standard
- Baked on epoxy coating for superior protection

#### Assembly Configurations

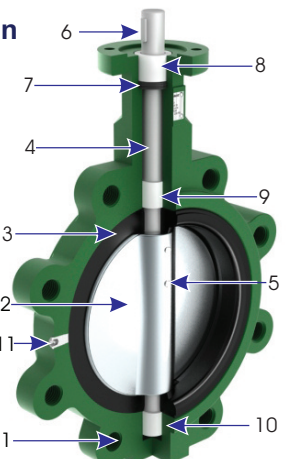


#### Valve Performance

- 2-way and 3-way assemblies 2" through 12"
- Valves comply with MSS SP-67 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

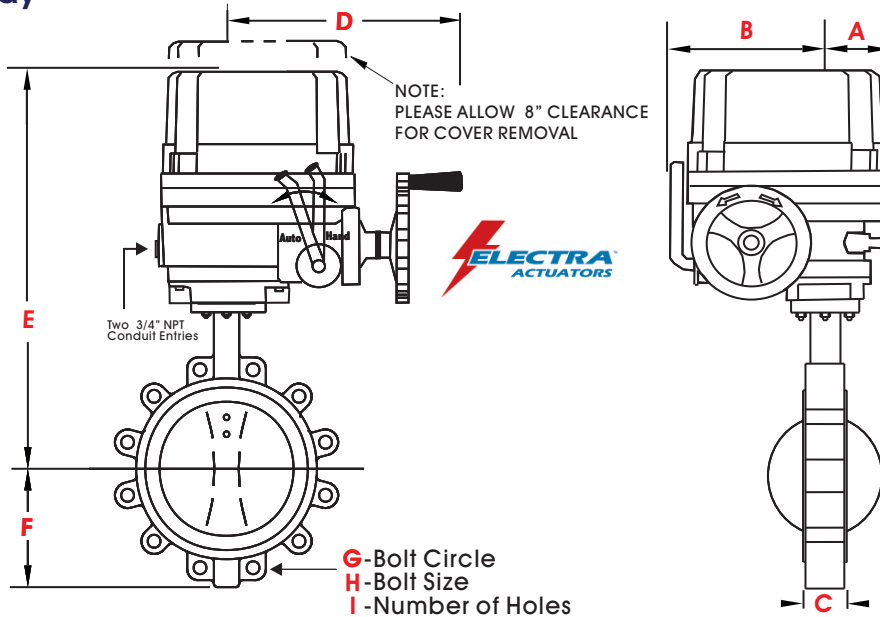
#### Standard Valve Construction

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	U-Cup Seal	BUNA-N
8	BUSHING	PTFE
9	BUSHING	PTFE
10	BUSHING	PTFE
11	SET SCREW	CARBON



## BF Series 43 / Non-Spring

 2-Way



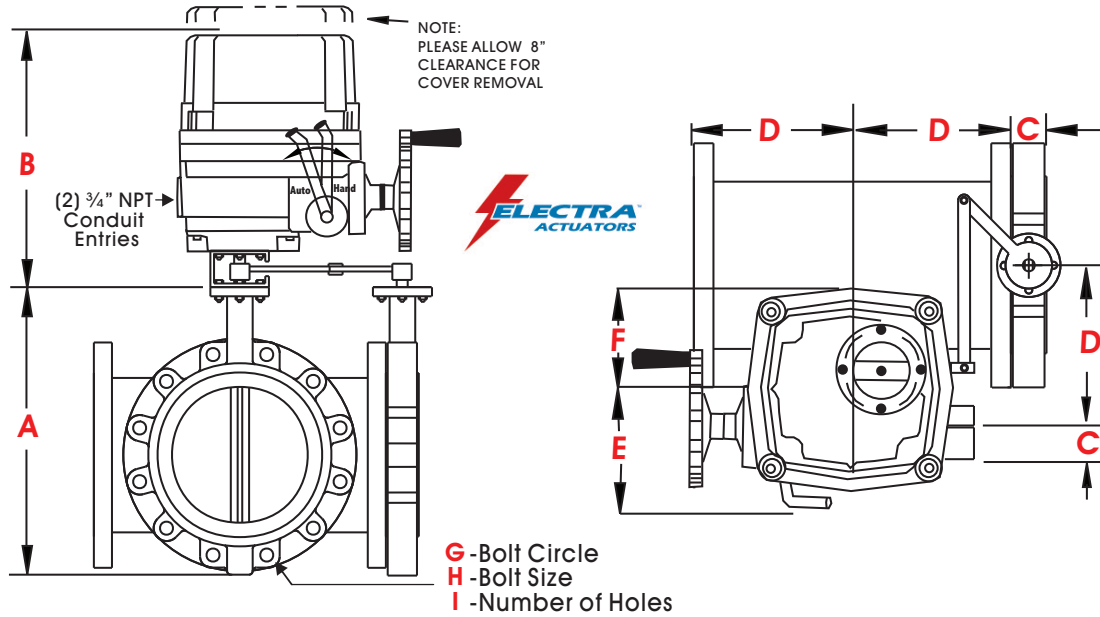
**Standard Assembly:** Ductile Iron Body, 304 Stainless Disc, EPDM Seat, On/Off, 220 VAC, with Heater, Manual Override, 2-SPDT Switches Modulating Service Change Last O to E in Model Number, For Accessories See page 4, Wiring under "Electrical Section" Series 43

Assembly Specification				Speed 90°		Amp draw	43 Series operator		Assembly Dimensions								
Size in DN	Model Number	Close off Psi Bar	Wt. lb kg	On/Off (sec.)	Mod. (sec.)	On/Off Mod.	On/off	Mod.	inch mm								
									A	B	C	D	E	F	G	H	I
2 50	BF202FA430	200 14	37 17	22	75	0.90	705-02	705-02	3 1/2 89.0	5 1/2 140.0	1 3/4 44.5	10 1/2 267.0	16 5/8 422.3	3 1/4 82.6	4 3/4 120.7	5/8 - 11 UNC	4
2 1/2 65	BF225FA430	200 14	38 17	22	75	0.90	705-02	705-02	3 1/2 89.0	5 1/2 140.0	1 7/8 47.6	10 1/2 267.0	17 1/8 434.9	3 3/4 95.2	5 1/2 139.7	5/8 - 11 UNC	4
3 80	BF203FA430	200 14	44 20	22	75	0.90	705-02	705-02	3 1/2 89.0	5 1/2 140.0	1 7/8 47.6	10 1/2 267.0	17 3/8 441.3	4.0 101.6	6.0 152.4	5/8 - 11 UNC	4
4 100	BF204FA430	200 14	56 25	22	75	0.90	705-02	705-02	3 1/2 89.0	5 1/2 140.0	2 1/8 53.9	10 1/2 267.0	18 1/8 460.4	4 7/8 123.8	7 1/2 190.5	5/8 - 11 UNC	8
5 125	BF205FA430	200 14	58 26	22	75	0.90	705-02	705-02	3 1/2 89.0	5 1/2 140.0	2 1/4 57.2	10 1/2 267.0	20 5/8 523.9	5 3/8 136.5	8 1/2 215.9	3/4 - 10 UNC	8
6 150	BF206FA430	200 14	70 32	22	75	0.90	705-02	705-02	3 1/2 89.0	5 1/2 140.0	2 1/4 57.2	10 1/2 267.0	21 1/8 536.6	5 7/8 149.2	9 1/2 241.3	3/4 - 10 UNC	8
8 200	BF208FA430	200 14	100 45	22	75	0.90	705-02	705-02	3 1/2 89.0	5 1/2 140	2 1/2 63.5	10 1/2 267.0	21 3/4 550.4	7 7/8 180.9	11 3/4 298.5	3/4 - 10 UNC	8
10 250	BF210FA430	200 14	124 56	26	75	1.80	705-06	705-06	4.0 102.0	5 1/2 140	2 3/4 69.9	11 1/4 286.0	23.0 582.1	8 1/4 209.6	14 1/4 361.9	7/8 - 9 UNC	12
12 300	BF212FA430	200 14	159 72	26	75	1.80	705-06	705-06	4.0 102.0	6 3/8 162.0	3 1/8 79.4	11 1/4 286.0	24 3/4 626.6	9 3/4 247.7	17.0 431.8	7/8 - 9 UNC	12

NOTE: Wiring Diagrams Located Under "Electrical Section" Series 43, Tagged With Operator Number

## BF Series 43 / Non-Spring

 **3-Way**



**Standard Assembly:** Ductile Iron Body, 304 Stainless Disc, EPDM Seat, On/Off, 220 VAC, with Heater, Manual Override, 2-SPDT Switches Modulating Service Change Last O to E in Model Number, For Accessories See page 4, Wiring under "Electrical Section" Series 43

Assembly Specification				Speed 90°		Amp draw	43 Series operator		Assembly Dimensions								
Size	Model Number	Close off	Wt.	On/Off	Mod.	On/Off	On/off	Mod.	inch mm								
in DN		Psi Bar	lb Kg	(sec.)	(sec.)	Mod.			A	B	C	D	E	F	G	H	I
2 50	BF302FA430	200 14	62 28	22	75	0.90	705-02	705-02	9 5/8 244.5	13 1/4 336.6	1 3/4 44.5	4 1/2 114.3	5 1/2 140.0	3 1/2 89.0	4 3/4 120.7	5/8 - 11 UNC	4
2 1/2 65	BF325FA430	200 14	73 33	22	75	0.90	705-02	705-02	10 5/8 269.9	13 1/4 336.6	1 7/8 47.6	5.0 127.0	5 1/2 140.0	3 1/2 89.0	5 1/2 139.7	5/8 - 11 UNC	4
3 80	BF303FA430	200 14	92 42	22	75	0.90	705-02	705-02	11 1/8 282.6	13 1/4 336.6	1 7/8 47.6	5 1/2 139.7	5 1/2 140.0	3 1/2 89.0	6.0 152.4	5/8 - 11 UNC	4
4 100	BF304FA430	200 14	143 65	22	75	0.90	705-02	705-02	12 3/4 323.9	13 1/4 336.6	2 1/8 53.9	6 1/2 165.1	5 1/2 140.0	3 1/2 89.0	7 1/2 190.5	5/8 - 11 UNC	8
5 125	BF305FA430	200 14	165 75	22	75	0.90	705-02	705-02	13 3/4 349.3	13 1/4 336.6	2 1/4 57.2	7 1/2 190.5	5 1/2 140.0	3 1/2 89.0	8 1/2 215.9	3/4 - 10 UNC	8
6 150	BF306FA430	200 14	195 89	22	75	0.90	705-02	705-02	14 3/4 374.7	13 1/4 336.6	2 1/4 57.2	8.0 203.2	5 1/2 140.0	3 1/2 89.0	9 1/2 241.3	3/4 - 10 UNC	8
8 200	BF308FA430	200 14	350 159	26	75	1.80	705-06	705-06	17 3/8 441.3	14 1/2 366.0	2 1/2 63.5	9.0 228.6	6 3/8 162.0	4.0 102.0	11 3/4 298.5	3/4 - 10 UNC	8
10 250	BF310FA430	200 14	500 227	26	75	1.80	705-06	705-06	19 3/4 501.7	14 1/2 366.0	2 3/4 69.9	11.0 279.4	6 3/8 162.0	4.0 102.0	14 1/4 361.9	7/8 - 9 UNC	12
12 300	BF312FA430	200 14	680 309	26	75	1.80	705-06	705-06	21.0 533.4	14 1/2 366.0	3 1/8 79.4	12.0 304.8	6 3/8 162.0	4.0 102.0	17.0 431.8	7/8 - 9 UNC	12

NOTE: Wiring Diagrams Located Under "Electrical Section" Series 43, Tagged With Operator Number

## Flow Coefficients ( $C_v$ ) Degrees represent angle of disc opening

### 2-Way 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

### 3-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

Note: 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

Series	Config	Size	Close Off	Disc/Seat	Actuator	Controls	Accessories
<b>BF</b>	<b>2</b>	<b>04</b>	<b>F</b>	<b>A</b>	<b>43</b>	<b>E</b>	
1	2	3	4	5	6	7	8

1. Series
BF = BF Butterfly Valve

4. Close Off
F = Full Rated / 200 PSI

7. Controls
O = On/Off E = Modulating 0-10 VDC / 4-20 MA


2. Configuration
2 = 2-way 3 = 3-way

5. Construction
A = 304 Stainless Disc / EPDM Seat

8. Accessories
C = Cycle Timer D = Digital Board 0-10 VDC / 4-20 MA F = Feedback (specify 0-10 or 4-20 out)

3. Size
02 = 2.0" 25 = 2.5" 03 = 3.0" 04 = 4.0" to 12 = 12"

6. Actuator
43 = Non-Spring / 220 VAC

 Please specify 3-Way Configuration Located on Front of Brochure  
 Gold Seal Warranty: 2 Years Limited Warranty