

BF

Series 33

Butterfly Valve

Electric 24 VAC - NEMA 4

Description

The BF Series 33 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 mounted with a mounting kit 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.

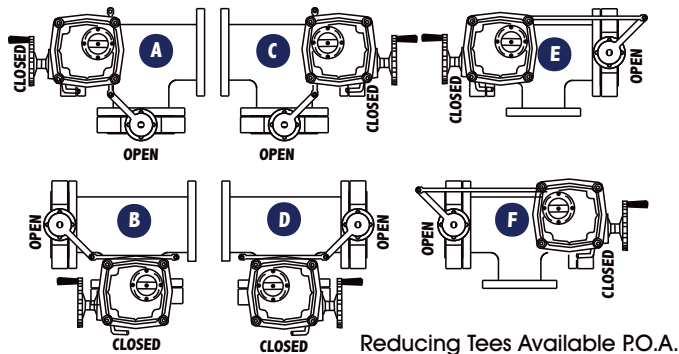
Operation

Valve assemblies with NEMA 4 electric actuators are powered by 24 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 by onboard torque switches. The actuators 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 listing is CE
- Power supply 24 VAC 50/60 Hz
- 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 prevents backdrive and the need for a mechanical brake
- Heater, thermostat standard to minimize condensation
- Auxiliary switches standard
- Mechanical stops standard
- 2 year limited warranty

Assembly Configurations

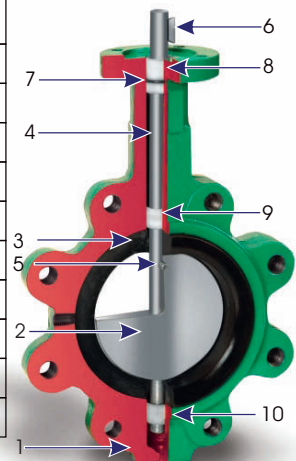


Valve Performance

- 2-way and 3-way assemblies 2" - 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 2" - 8" 200 psi, 8" - 12" 75 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

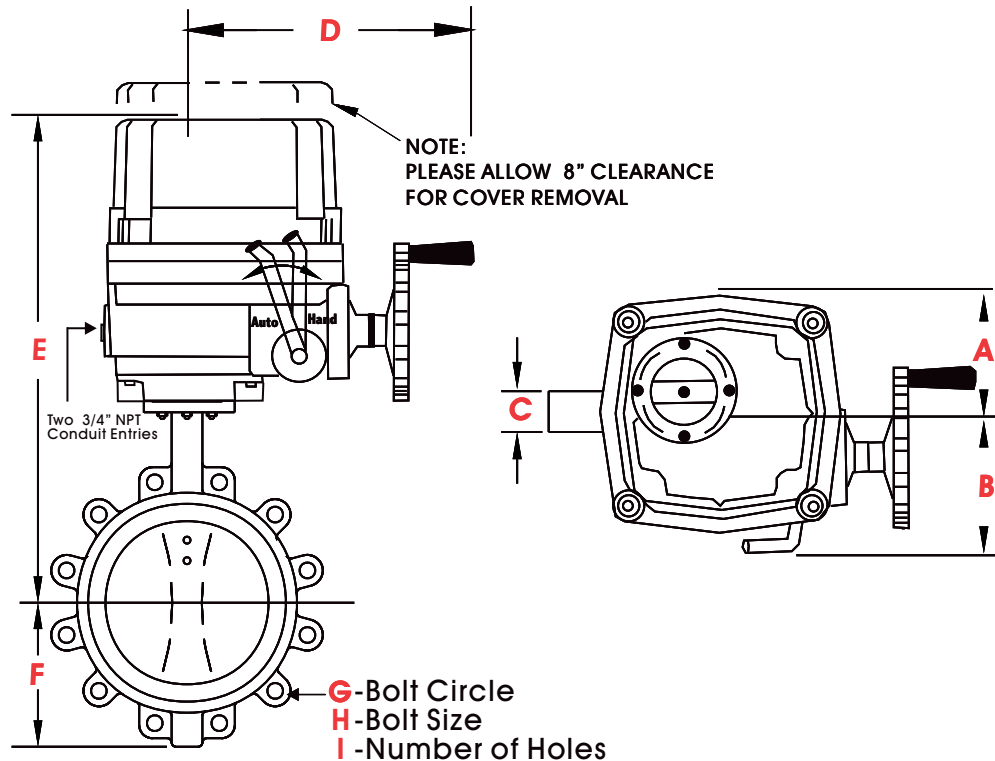
Item	Description	Materials
1	BODY	DUCTILE IRON
2	DISC	304 SS
3	SEAT	EPDM
4	SHAFT	416 SS
5	TAPER PINS	316 SS
6	KEY	416 SS
7	O-RING	BUNA-N
8	BUSHING	PTFE
9	BUSHING	PTFE
10	BUSHING	PTFE



BF Series 33

2-Way Non-Spring Return

Dimensional Data



Standard Assembly, Bronze Disc, EPDM Seat, On/Off 24 VAC Motor With Heater, Thermostat and Override Modulating Service Change Last O to E In Model Number. For Accessories See Page 4

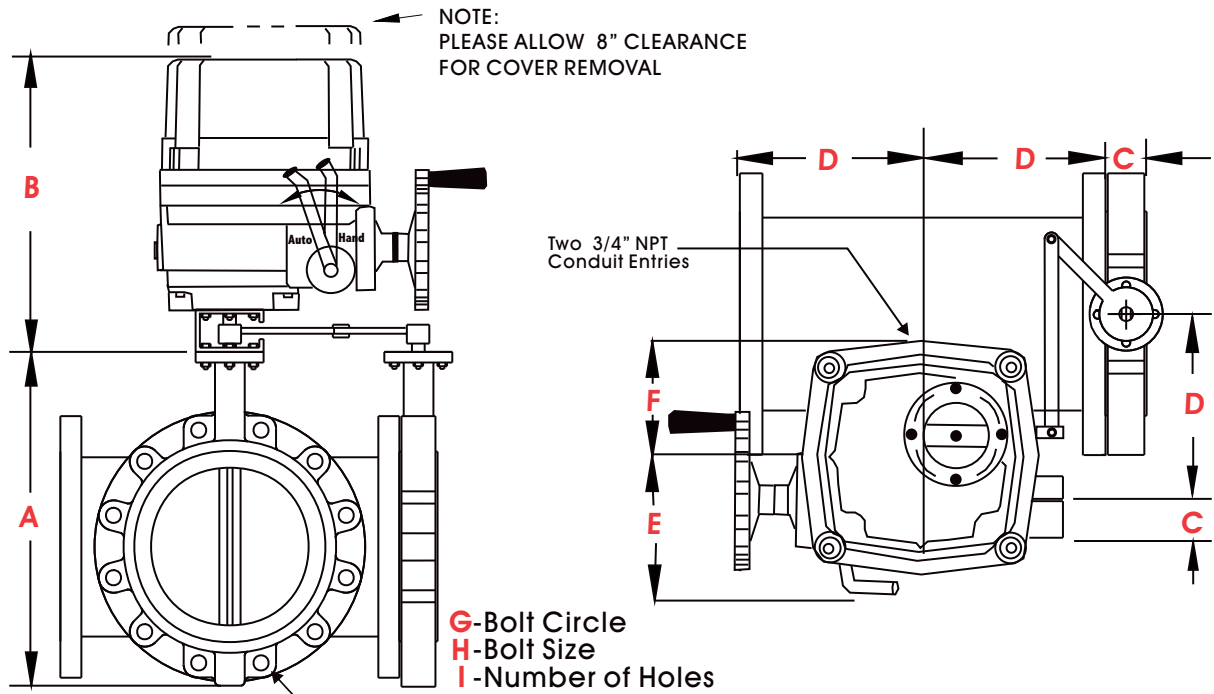
Assembly Specification				Speed 90° On/Off Mod.	Amp draw On/Off Mod.	33 Series operator		Assembly Dimensions								
Size in DN	Model Number	Close off Psi Bar	Wt. lb kg			On/off	Mod.	A	B	C	D	E	F	G	H	I
2 50	BF202FA33O	200 14	36 16	21 Seconds	19	710-01	710-01	3 1/2 89	5 1/2 140	1 3/4 44.5	10 1/2 267	16 5/8 422.3	3 1/4 82.6	4 3/4 120.7	5/8 - 11 UNC	4
2 1/2 65	BF225FA33O	200 14	37 17	21 Seconds	19	710-01	710-01	3 1/2 89	5 1/2 140	1 7/8 47.6	10 1/2 267	17 1/8 434.9	3 3/4 95.2	5 1/2 139.7	5/8 - 11 UNC	4
3 80	BF203FA33O	200 14	43 20	21 Seconds	19	710-01	710-01	3 1/2 89	5 1/2 140	1 7/8 47.6	10 1/2 267	17 3/8 441.3	4.0 101.6	6.0 152.4	5/8 - 11 UNC	4
4 100	BF204FA33O	200 14	55 25	21 Seconds	19	710-01	710-01	3 1/2 89	5 1/2 140	2 1/8 53.9	10 1/2 267	18 1/8 460.4	4 7/8 123.8	7 1/2 190.5	5/8 - 11 UNC	8
5 125	BF205FA33O	200 14	57 26	21 Seconds	19	710-01	710-01	3 1/2 89	5 1/2 140	2 1/4 57.2	10 1/2 267	18 3/8 473	5 3/8 136.5	8 1/2 215.9	3/4 - 10 UNC	8
6 150	BF206FA33O	200 14	60 27	21 Seconds	19	710-01	710-01	3 1/2 89	5 1/2 140	2 1/4 57.2	10 1/2 267	19 1/8 486	5 7/8 149.2	9 1/2 241.3	3/4 - 10 UNC	8
8 200	BF208UA33O	100 7	78 35	21 Seconds	19	710-02	710-02	3 1/2 89	5 1/2 140	2 1/2 63.5	10 1/2 267	20 1/2 521	7 1/8 180.9	11 3/4 298.5	3/4 - 10 UNC	8
10 250	BF210UA33O	100 7	123 56	26 Seconds	20	710-03	710-03	4.0 102.0	6 3/8 162	2 3/4 69.9	11 1/4 286	23.0 582	8 1/4 209.6	14 1/4 361.9	7/8 - 9 UNC	12
12 300	BF212UA33O	100 7	156 71	26 Seconds	20	710-03	710-03	4.0 102.0	6 3/8 162	3 1/8 79.4	11 1/4 286	24 5/8 627	9 3/4 247.7	17.0 431.8	7/8 - 9 UNC	12

NOTE: Wiring Diagrams Located Under "Electrical Section" Series 33, Tagged With Operator Number

BF Series 33

3-Way Non-Spring Return

Dimensional Data



Standard Assembly, 304 Stainless Disc, EPDM Seat, On/Off, 24 VAC Motor With Heater, Thermostat and Override Modulating Service Change Last O to E In Model Number, For Accessories See Page 4

Assembly Specification				Speed 90°	Amp draw	33 Series operator		Assembly Dimensions								
Size in DN	Model Number	Close off Psi Bar	Wt. lb Kg	On/Off Mod.	On/Off Mod.	On/off	Mod.	A	B	C	D	E	F	G	H	I
2 50	BF302FA330	200 14	62 28	21 Seconds	19	710-01	710-01	9 9/8 244.5	13 3/4 336.6	1 3/4 44.5	4 1/2 114.3	5 1/2 140	3 1/2 89	4 3/4 120.7	5/8 - 11 UNC	4
2 1/2 65	BF325FA330	200 14	73 33	21 Seconds	19	710-01	710-01	10 5/8 269.9	13 3/4 336.6	1 7/8 47.6	5.0 127.0	5 1/2 140	3 1/2 89	5 1/2 139.7	5/8 - 11 UNC	4
3 80	BF303FA330	200 14	92 42	21 Seconds	19	710-01	710-01	11 1/8 282.6	13 3/4 336.6	1 7/8 47.6	5 1/2 139.7	5 1/2 140	3 1/2 89	6.0 152.4	5/8 - 11 UNC	4
4 100	BF304FA330	200 14	143 65	21 Seconds	19	710-01	710-01	12 3/4 323.9	13 3/4 336.6	2 1/8 53.9	6 1/2 165.1	5 1/2 140	3 1/2 89	7 1/2 190.5	5/8 - 11 UNC	8
5 125	BF305FA330	200 14	165 75	21 Seconds	19	710-02	710-02	13 3/4 349.3	13 3/4 336.6	2 1/4 57.2	7 1/2 190.5	5 1/2 140	3 1/2 89	8 1/2 215.9	3/4 - 10 UNC	8
6 150	BF306FA330	200 14	195 89	21 Seconds	19	710-02	710-02	14 3/4 374.7	13 3/4 336.6	2 1/4 57.2	8.0 203.2	5 1/2 140	3 1/2 89	9 1/2 241.3	3/4 - 10 UNC	8
8 200	BF308UA330	100 7	319 145	26 Seconds	20	710-03	710-03	17 3/8 441.3	15.0 381.2	2 1/2 63.5	9.0 228.6	6 3/8 162	4.0 102	11 3/4 298.5	3/4 - 10 UNC	8
10 250	BF310UA330	100 7	480 219	26 Seconds	20	710-03	710-03	19 3/4 501.7	15.0 381.2	2 3/4 69.9	11.0 279.4	6 3/8 162	4.0 102	14 1/4 361.9	7/8 - 9 UNC	12
12 300	BF312UA330	100 7	652 296	26 Seconds	20	710-03	710-03	21.0 533.4	15.0 381.2	3 1/8 79.4	12.0 308.4	6 3/8 162	4.0 102	17.0 431.8	7/8 - 9 UNC	12

NOTE: Wiring Diagrams Located Under "Electrical Section" Series 33, Tagged With Operator Number

BF Series 33

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	21705

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, 6", Full Cut 200 psi close, 304 Stainless Disc, EPDM Seat, 24 VAC, NEMA 4 Actuator, Modulating (Specify 0-10 or 4-20 input)

#	ITEM	CODE	DESCRIPTION	#	ITEM	CODE	DESCRIPTION
1 & 2	Series	BF	Butterfly Valve	7	Construction	A	304 SS Disc, EPDM Seat
3	Assembly	2 3	2-Way Configuration 3-Way Configuration	8 & 9	Actuator	33	Non-Spring 24 VAC
4 & 5	Size	02 25 to 12	2" - 12" Assemblies	10	Controls	O E	On/Off Electronic 0-10 or 4-20
6	Close Off	F U	Full Cut 200 psi Under Cut 100 psi	11 & 12	Accessories	F	Feedback



Please Specify 3-way Configurations Located On Front Of Brochure