

BF

Butterfly Valve

Series 47/48

Electric 24 VAC - NEMA 4

Description

The BF Series 47/48 electric actuated valve assemblies are rated NEMA 4 for outdoor use. These assemblies are available in 2-way and 3-way configurations 2"-6", in non-spring and spring return types. 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 used in either mixing or diverting applications.

Operation

Valve assemblies with NEMA 4 electric actuators are powered by 24 VAC or 120 VAC. Each actuator is controlled by either on/off, floating or modulating commands. All actuators contain maintenance free, brushless DC motors that have automatic current sensing controls, along with a rugged all steel gear train that is available in non-spring and spring return types. 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, and UL
- Power supply 24 VAC/VDC and 120/230 VAC
- Controls available are two position, floating or modulating (2-10 or 0-10 VDC input)
- 100% Duty motors
- Visual position indicator that confirms valve travel
- Brushless Dc motors are rugged and long lasting
- All steel gear train that is permanently lubricated
- Microprocessor motor control for accurate repeatability
- Series 47 non-spring type, Series 48 failsafe capacitor type
- 5 year limited warranty

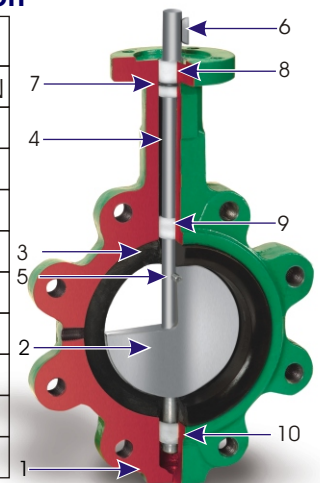


Valve Performance

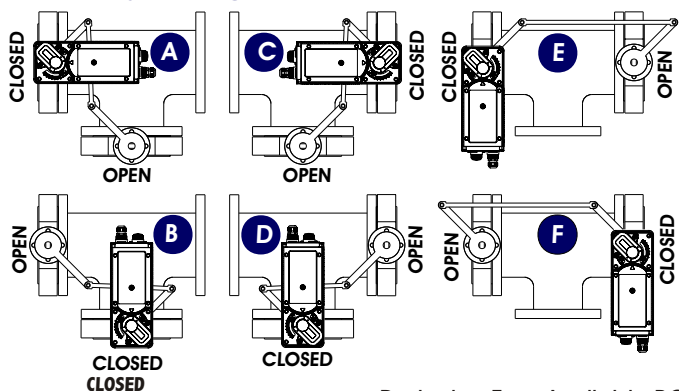
- 2-way and 3-way assemblies 2" through 6"
- Valves comply with MSS SP-67 specifications, for industry standard face to face requirements
- Lug bodies compatible with ANSI 125/150# flanges
- Extended 2" neck for insulation clearance
- 304 stainless steel disc for corrosion resistance
- Phenolic backed 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	O-RING	BUNA-N
8	BUSHING	PTFE
9	BUSHING	PTFE
10	BUSHING	PTFE



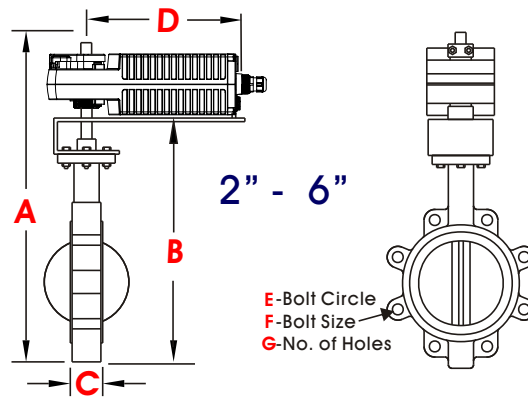
Assembly Configurations



Reducing Tees Available P.O.A.

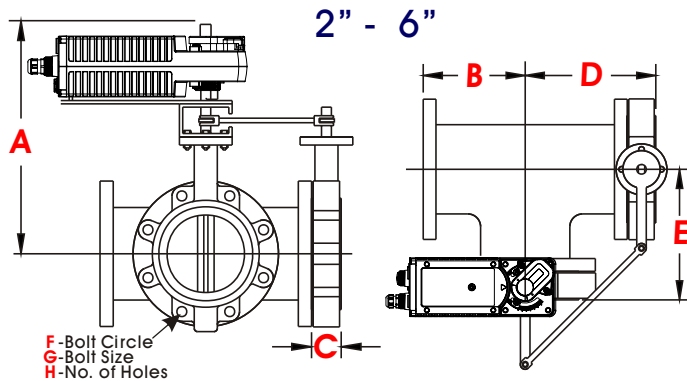
Non-Spring Return

Dimensional Data



2-Way Standard Assembly, Bronze Disc, EPDM Seat, On/Off
Modulating Service Change Last O to E in Model Number, For Accessories See page 4, Wiring Under "Electrical Section" Series 47

Assembly Specification				Speed		VA Rating		47 Series operator		Assembly Dimensions						
Size in DN	Model Number	Close Psi bar	Wt. lb kg	Open (sec.)	Close (sec.)	on/off	mod.	on/off	mod.	A	B	C	D	E	F	G
2 50	BF202FA47O	200 14	21 10	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	18 5/8 473.1	13 5/8 346.1	1 3/4 44.5	11 1/2 288.0	4 3/4 120.7	5/8 -11 UNC	4
2 1/2 65	BF225FA47O	200 14	22 10	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	19 5/8 498.5	14 5/8 371.5	1 7/8 47.6	11 1/2 288.0	5 1/2 139.7	5/8 -11 UNC	4
3 80	BF203FA47O	200 14	28 13	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	20 1/8 511.2	15 1/8 384.2	1 7/8 47.6	11 1/2 288.0	6 152.4	5/8 -11 UNC	4
4 100	BF204FA47O	200 14	40 18	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	21 3/4 552.5	16 3/4 425.5	2 1/8 53.9	11 1/2 288.0	7 1/2 190.5	5/8 -11 UNC	8
5 125	BF205UA47O	100 7	50 24	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	27 3/4 704.9	18 7/8 479.4	2 1/2 57.2	11 1/2 288.0	8 1/2 215.9	3/4 -10 UNC	8
6 150	BF206UA47O	100 7	53 24	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	28 3/4 730.3	19 7/8 504.8	2 1/4 57.2	11 1/2 288.0	9 1/2 241.3	3/4 -10 UNC	8

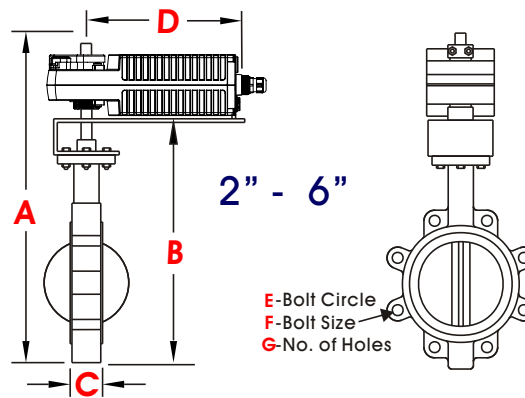


3-Way Standard Assembly, Bronze Disc, EPDM Seat, On/Off
Modulating Service Change Last O to E in Model Number, For Accessories See page 4, Wiring Under "Electrical Section" Series 47

Assembly Specification				Speed		VA Rating		47 Series operator		Assembly Dimensions							
Size in DN	Model Number	Close Psi bar	Wt. lb kg	Open (sec.)	Close (sec.)	on/off	mod.	on/off	mod.	A	B	C	D	E	F	G	H
2 50	BF302FA47O	200 14	49 20	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	15 3/8 390.5	4 1/2 114.3	1 3/4 44.5	6 1/4 158.8	6 1/4 158.8	4 3/4 120.7	5/8 -11 UNC	4
2 1/2 65	BF325FA47O	200 14	60 25	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	15 7/8 403.2	5 127.0	1 7/8 47.6	6 7/8 174.6	6 7/8 174.6	5 1/2 139.7	5/8 -11 UNC	4
3 80	BF303FA47O	200 14	79 34	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	18 1/8 460.4	5 1/2 139.7	1 7/8 47.6	7 3/8 187.3	7 3/8 187.3	6 152.4	5/8 -11 UNC	4
4 100	BF304FA47O	200 14	130 58	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	19 7/8 504.8	6 1/2 165.1	2 1/8 53.9	8 5/8 219.1	8 5/8 219.1	7 1/2 190.5	5/8 -11 UNC	8
5 125	BF305UA47O	100 7	159 71	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	23 1/2 596.9	7 1/2 190.5	2 1/4 57.2	9 3/4 247.7	9 3/4 247.7	8 1/2 215.9	3/4 -10 UNC	8
6 150	BF306UA47O	100 7	189 85	90	90	10.0	10.0	CNP352-C1U	CNP352-P1U	24 1/2 622.0	8 203.2	2 1/4 57.2	10 1/4 260.4	10 1/4 260.4	9 1/2 241.3	3/4 -10 UNC	8

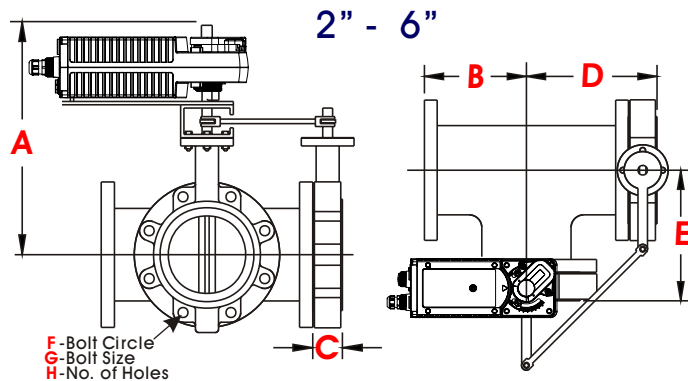
Fail Safe

Dimensional Data



2-Way Standard Assembly, Bronze Disc, EPDM Seat, On/Off
Modulating Service Change Last O to E in Model Number, For Accessories See page 4, Wiring Under "Actuator Section" Series 48

Assembly Specification				Speed		VA Rating		48 Series operator		Assembly Dimensions						
Size in DN	Model Number	Close Psi bar	Wt. lb/kg	Open (sec.)	Fail (sec.)	on/off	mod.	on/off	mod.	A	B	C	D	E	F	G
2 50	BF202FA48O	200 14	21 10	90	60	15	15	CEP352-D1U	CEP352-P1U	18 ⁵ / ₈ 473.1	13 ⁵ / ₈ 346.1	1 ³ / ₄ 44.5	11 ¹ / ₂ 288.0	4 ³ / ₄ 120.7	5/8 - 11 UNC	4
2 ¹ / ₂ 65	BF225FA48O	200 14	22 10	90	60	15	15	CEP352-D1U	CEP352-P1U	19 ⁵ / ₈ 498.5	14 ⁵ / ₈ 371.5	1 ⁷ / ₈ 47.6	11 ¹ / ₂ 288.0	5 ¹ / ₂ 139.7	5/8 - 11 UNC	4
3 80	BF203FA48O	200 14	28 13	90	60	15	15	CEP352-D1U	CEP352-P1U	20 ¹ / ₈ 511.2	15 ¹ / ₈ 384.2	1 ⁷ / ₈ 47.6	11 ¹ / ₂ 288.0	6 152.4	5/8 - 11 UNC	4
4 100	BF204UA48O	100 7	34 15	90	60	15	15	CEP352-D1U	CEP352-P1U	26 ³ / ₄ 679.5	16 ³ / ₄ 425.5	2 ¹ / ₈ 53.9	11 ¹ / ₂ 288.0	7 ¹ / ₂ 190.5	5/8 - 11 UNC	8
5 125	BF205UA48O	100 7	45 20	90	60	15	15	CEP352-D1U	CEP352-P1U	27 ³ / ₄ 704.9	18 ⁷ / ₈ 479.4	2 ¹ / ₄ 57.2	11 ¹ / ₂ 288.0	8 ¹ / ₂ 215.9	3/4 - 10 UNC	8
6 150	BF206UA48O	100 7	53 24	90	60	15	15	CEP352-D1U	CEP352-P1U	28 ³ / ₄ 730.3	19 ⁷ / ₈ 504.8	2 ¹ / ₄ 57.2	11 ¹ / ₂ 288.0	9 ¹ / ₂ 241.3	3/4 - 10 UNC	8



3-Way Standard Assembly, Bronze Disc, EPDM Seat, On/Off
Modulating Service Change Last O to E in Model Number, For Accessories See page 4, Wiring Under "Actuator Section" Series 48

Assembly Specification				Speed		VA Rating		48 Series operator		Assembly Dimensions							
Size in DN	Model Number	Close Psi bar	Wt. lb/kg	Open (sec.)	Fail (sec.)	on/off	mod.	on/off	mod.	A	B	C	D	E	F	G	H
2 50	BF302FA48O	200 14	49 20	90	60	15	15	CEP352-D1U	CEP352-P1U	15 ³ / ₈ 390.5	4 ¹ / ₂ 114.3	1 ³ / ₄ 44.5	6 ¹ / ₄ 158.8	6 ¹ / ₄ 158.8	4 ³ / ₄ 120.7	5/8 - 11 UNC	4
2 ¹ / ₂ 65	BF325FA48O	200 14	60 25	90	60	15	15	CEP352-D1U	CEP352-P1U	15 ⁷ / ₈ 403.2	5 127.0	1 ⁷ / ₈ 47.6	6 ⁷ / ₈ 174.6	6 ⁷ / ₈ 174.6	5 ¹ / ₂ 139.7	5/8 - 11 UNC	4
3 80	BF303UA48O	100 7	79 34	90	60	15	15	CEP352-D1U	CEP352-P1U	18 ¹ / ₈ 460.4	5 ¹ / ₂ 139.7	1 ⁷ / ₈ 47.6	7 ³ / ₈ 187.3	7 ³ / ₈ 187.3	6 152.4	5/8 - 11 UNC	4
4 100	BF304UA48O	100 7	138 63	90	60	15	15	CEP352-D1U	CEP352-P1U	19 ⁷ / ₈ 504.8	6 ¹ / ₂ 165.1	2 ¹ / ₈ 53.9	8 ⁵ / ₈ 219.1	8 ⁵ / ₈ 219.1	7 ¹ / ₂ 190.5	5/8 - 11 UNC	8
5 125	BF305UA48O	100 7	159 71	90	60	15	15	CEP352-D1U	CEP352-P1U	23 ¹ / ₂ 596.9	7 ¹ / ₂ 190.5	2 ¹ / ₄ 57.2	9 ³ / ₄ 247.7	9 ³ / ₄ 247.7	8 ¹ / ₂ 215.9	3/4 - 10 UNC	8
6 150	BF306UA48O	100 7	189 85	90	60	15	15	CEP352-D1U	CEP352-P1U	24 ¹ / ₂ 622.0	8 203.2	2 ¹ / ₄ 57.2	10 ¹ / ₄ 260.4	10 ¹ / ₄ 260.4	9 ¹ / ₂ 241.3	3/4 - 10 UNC	8

Engineering / Order Code

Flow Coefficients (C_v) Degrees represent angle of disc opening

Single Valve Assembly

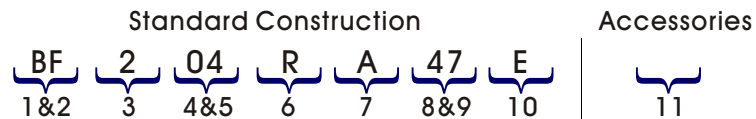
Size	10°	20°	30°	40°	50°	60°	70°	80°	90°
2"	0.06	3	7	15	27	44	70	105	115
2 1/2"	0.10	6	12	25	45	75	119	278	196
3"	0.20	9	18	39	70	116	183	275	302
4"	0.30	17	36	78	139	230	364	546	600
5"	0.50	29	61	133	237	392	620	930	1022
6"	0.80	45	95	205	366	605	958	1437	1579
8"	2	89	188	408	727	1202	1903	2854	3136

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

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



Butterfly Valve Assembly, 2-Way, 4", Reduced Cut 150 psi close, Bronze Disc, EPDM Seat, 24 VAC, NEMA 4 Actuator Non-Spring, Modulating 2-10 VDC input

#	ITEM	CODE	DESCRIPTION	#	ITEM	CODE	DESCRIPTION
1 & 2	Series	BF	Butterfly Valve	7	Construction	A	Stainless Disc, EPDM Seat
3	Assembly	2 3	2-Way Configuration 3-Way Configuration	8 & 9	Actuator	47 48	Non-Spring 24 VAC Spring Return 24 VAC
4 & 5	Size	02 04 25 05 03 06	2" - 6" Assemblies	10	Controls	O E F	On/Off Electronic 2-10 VDC input Floating Controls
6	Close Off	R L U	Reduced Cut 150psi Low Cut 100psi Under Cut 75psi	11	Accessories	V	120 VAC power

Please Specify 3-way Configurations Located On Front Of Brochure