

FEATURES • ADVANCED TECHNOLOGY • PROVEN DESIGN • PREFERRED FEATURES •



A. Body

Available in Flanged and Mechanical Joint End Connections in AWWA Class 150B and 250B.

B. Body Seat

360° uninterrupted body seat with no shaft penetration facilitates leak free performance. Type 316 Stainless Steel provides long life and corrosion free mating surface for resilient seat.

C. Ductile Iron Disc

Ductile Iron provides strength and rigidity to withstand impacts from flow and pressure transients.

D. Resilient Seat

Easily adjusted and replaced in the field, the 360° resilient seat is uninterrupted for positive seating.

E. Tri-Loc[®] Seat Retention System Proven dependability since 1971. Resilient seat is mechanically retained by three methods. All seat hardware is Type 316 Stainless Steel.

F. Shaft

Type 304 Stainless Steel shafts meet AWwA C504 diameter requirements. Through shafts provided standard on sizes 4" - 24." Optional 30" and larger.

G. Taper Pins

Stainless Steel Taper Pins lock disc to shaft with stainless steel nuts. Taper pin o-ring seal prevents leakage.

H. Shaft Seal

Shaft seal is a self-adjusting/wear compensating V-Type packing. Packing is easily replaced without removal of the valve from the line.

I. Sleeve Bearings

Bearings are self-lubricating and non-corrosive, for a long, trouble-free life.

J. Thrust Bearing

Factory set bronze thrust bearing assures proper centering of valve disc. Field adjustable in sizes 30" and larger



A PROVEN DESIGN...

With features and benefits engineers and users prefer, and manufactured with advanced technology, the American-BFV[®] Butterfly Valve offers today's water/wastewater professionals a superior valve at an affordable price.

PROVEN DESIGN

The American-BFV[®] is designed, manufactured, and tested to meet and exceed AWWA C504 requirements. Performance tests, leakage tests, and hydrostatic testing are all performed as standard. Third party Proof of Design Testing was successfully completed and flow testing was performed at the Utah State Hydraulics Lab, one of the premier testing labs in the world.

In order to take proven design from concept to reality, it must leave the lab and travel out into the field. Only there, and only after years of operation in thousands of installations can proven design really mean anything. This is the true test. This is the test that the American-BFV[®] has passed repeatedly in installations throughout the world since 1971.

PREFERRED FEATURES

The American-BFV[®] provides the features that manufacturers, engineers, and users have requested and included in the AWWA C504 Butterfly Valve The American-BFV[®] is standard. designed to provide long life and trouble-free performance. If repairs do become necessary, the valve is also designed for easy field repair. The shaft seal incorporates V-type packing which is easily replaced in the field without removal from the line. Adjustment of the resilient seat is easily performed with a socket wrench...no two-part epoxy or urethane to mix...no hypodermic needles

to special order. Our unique Tri-Loc seat retention system assures seat retention by retaining the seat through three different mechanical means to assure long-term dependable service.

The American-BFV[®] is shipped standard with ductile iron discs in all sizes. You can rest assured that the disc will withstand the flow and pressure transients that valves are typically subjected to.

ADVANCED TECHNOLOGY

Incorporating the latest in valve manufacturing technologies assures a consistent, high-quality valve that will provide years of trouble-free service.

SEAT ADJUSTMENT

The American-BFV[®] Tri-Loc system makes both seat adjustment and replacement a snap. Simply remove the cap screws and replace the seat. It's that simple, and it only requires a socket wrench to do it.

Other valves on the market have bonded rubber seats which cannot be adjusted and must be returned to the factory for replacement. Body seats using epoxy require specially ordered hypodermic needles for adjustment to the seat. Replacement requires pressurized systems to inject the two part epoxy behind the seat.

Tri-Loc Seat Retention System

Proven dependability since 1971.

The Tri-Loc seat retention system provides positive mechanical retention of the valve seat while allowing easy adjustment or replacement.

The seat is secured by three methods: clamp force, through-bolting, and opposing machined registers in the disc and seat retaining ring. Clamp force is provided by tightening the Nylok* cap screws. Tightening the screws applies pressure to the serrated seat retaining ring which in turn creates a "clamp force" on the Buna-N molded seat. These same cap screws provide through-bolting seat retention by passing through precision molded holes in the Buna-N seat. Finally, molded shoulders in the Buna-N seat are captured by machined registers in the disc and retention ring preventing outward movement of the seat.

The Tri-Loc system has been field proven since 1971 in thousands of installations. In fact, there has never been a reported instance of an American-BFV resilient seat problem due to retention failure.



3

VALVE CONSTRUCTION

PRESSURE RATINGS

MAXIMUM PRESSURE RATINGS														
SERIES	CONNECTION	AWWA Class	CWP (psig)											
2000	ANSI 125# Gray Iron Flange	150B	150											
2100	AWWA MJ Gray Iron	150B	150											
2200	ANSI 250# Ductile Iron Flange	250B	250											
2300	AWWA MJ Ductile Iron	250B	250											
2400	ANSI 125# Ductile Iron Flange	250B	250											
2600	ANSI 125# FLG x MJ Gray Iron	150B	150											

FLOW COEFFICIENTS

SIZE	4	6	8	10	12	4	16	18	20	24
Cv	590	1,430	2,750	4,300	6,550	8,350	11,800	15,000	18,600	27,000
SIZE	30	36	42	48	54	60	66	72	84	96
Cv	42,000	61,900	87,100	4,000	144,000	180,000	221,000	266,500	370,500	500,000

HEADLOSS CHART

MATERI	MATERIALS OF CONSTRUCTION													
COMPONENT	standard	OPTIONAL												
150B Body	Cast Iron ASTM A126, Class B	Ductile Iron ASTM A536 Gr. 65-45-12												
250B Body	Ductile Iron ASTM A536 Gr. 65-45-12	Consult Factory												
Disc	Ductile Iron ASTM A536 Gr. 65-45-12	Consult Factory												
150B Shaft	Stainless Steel ASTM A276 Type 304	Stainless Steel ASTM A276 Type 316												
250B Shaft	Stainless Steel ASTM A564 Type 630, H1150	Consult Factory												
Resilient Seat	Buna-N	EPDM, Viton												
Shaft Bearings 2′′ - 24′′	Nylatron	Teflon												
Shaft Bearings 30'' and Larger	Teflon-Lined, Fiberglass-Backed	Consult Factory												
Body Seat and Hardware	T316 Stainless Steel	Consult Factory												
Interior Coating	NSF 61 Epoxy	Fusion Bonded Epoxy												
Exterior Coating	Universal Primer	Fusion Bonded Epoxy												

CUBIC METERS PER HOUR



FLOW OF WATER IN GALLONS PER MINUTE



A valve actuator must be able to perform to the same level as the valve. American-BFV® gears are designed and built to provide the same long term service as the American-BFV® Butterfly Valve. Both Traveling

Nut (slotted, link/lever) and Worm Gear types are available. Both are designed per AWWA C504 and meet or exceed all material and performance requirements. The American-BFV[®] Traveling Nut actuators are designed to withstand 450 ft./lbs. of input torque against both closed and open stops. Buried service gears are grease packed and sealed. American-BFV[®] gears can be provided with hand-

wheels, chainwheels, or 2" operator nuts. Electric and cylinder actuators are also available.



Electric Actuator

INSTALLATION DIMENSIONS FLANGED END CONNECTION

Traveling Nut Actuator • Class 150B & 250B • Sizes 4" - 24"



							D	imens	ions	in Inc	hes							
Valve Size	AWWA Press. Class	A	В	С	D	E		G	Н		К	L	Ν	Tums to Open	No. of Bolts	Bolt Size	Actuator Size	Approx. Shipping Weight
4	150B 250B	5	7 1/2	9	15/16	0	6	7 9/16	/2	9 5/8	9 3/8	8	2 1/2	15	8	5/8 3/4	LS-1	71 lbs. 80
6	150B	5 5/6	9 1/2			4	7	8 1/4	/2	10 3/8	9 3/8	8	2 1/2	15	8	3/4	LS-1	90
	250B	5 //8	10 5/8	12 1/2	1 //16	4		8 1/2					2 15/16		12	3/4		130
8	150B	6	11 3/4	13 1/2	1 1/8	4	8	93/16	/2	/4	9 3/8	8	3 1/2	15	8	3/4 7/8	LS-1	125
	150B	8	14 1/4	15	1 3/16	- -		דווכ ל	t I			_	4		12	7/8	LS-2	200
10	250B	9 3/8	15 1/4	17 1/2	1 7/8	0	10	/ 6	2	4 /8	10 3/8	12	4 / 6	20	16			225
12	150B	8	17	19	/4	0		12 3/4	2		10.2/0		4	20	12	7/8		250
12	250B	9 1/2	17 3/4	20 1/2	2	0	/ 6	13		15 1/4	10 3/8	16	4 3/4	20	16	/8	LS-2	300
14	150B	8	18 3/4	21	I 3/8	0	131/2	15 11/16	3 1/2	19	15 1/16	24	4	35	12	Ι	15-3	400
	250B	9 1/2	20 1/4	23	2 1/8	4	13 172	13 11/10	5 172	17	13 1/10	21	4 3/4		20	/8	23.5	450
16	150B	8	21 1/4	23 1/2	7/16	0	14 5/8	16 1/16	3 1/2	20	15 1/16	24	4 35	16		LS-3	480	
	250B	9 5/8	22 1/2	25 1/2	2 1/4	4							4 3/16		20	/4		550
18	150B	8	22 3/4	25	1 9/16	4	15 1/2	18 1/8	5	21 5/8	18 1/4	24	4	50	16	1 1/8	LS-4	640
	250B	9 5/8	24 3/4	28	2 3/8	4							4 13/16		24	1 1/4	LS-4	750
20	250B	9.5/8	25	30 1/2	2 1/2	4	17 1/2	20 1/8	5	23 5/8	18 1/4	24	4 3/ 6	50	20	/4		900
	150B	8	29 1/2	32	1 7/8	4						24	4		20	1 1/4	1	1.085
24	250B	9 3/4	32	36	2 3/4	4	20 1/2	23 1/8	5	26 5/8	18 1/4	30	4 7/8	50	24	1 1/2	LS-4	1,350

Notes:

Flange drilling conforms to ANSI B16.1, Class 125 or Class 250. Consult factory for Worm Gear dimensions.

INSTALLATION DIMENSIONS FLANGED END CONNECTION Traveling Nut Actuator • Class 150B & 250B • Sizes 30" - 84"



30'' - 36'' Actuator Orientation

42" - 84" Dimensions

								Dim	nensi	ons ir	n Inch	nes							
Valve Size	AWWA Press. Class	A	В	С	D	E		G	н		K	L	N	Ρ	Turns to Open	No. of Bolts	Bolt Size	Actuator Size	Approx. Shipping Weight
30	150B	12	36	38 3/4	2 1/8	4	27 3/8	29 1/8	81/2	24 1/2	31	24	6	14 1/4	63	28	/4	155	2,435 lbs.
00	250B	13 3/4	39 1/4	43	3	Т	27 5/0	27 170	0 1/2	JT I/Z	, IC	27	6 7/8	1 1/1	65	20	3/4	LS-5	2,800
36	150B	12	42 3/4	46	2 3/8	4	29 1/2	31 7/8	81/2	37 1/4	31	24	6	14 1/4	63	32	/2	15-5	3,425
50	250B	14	46	50	3 3/8	Т	27 172		0 172	J/ 1/T	1	27	7	TT 1/T	05	52	2	LJ-J	4,000
42	150B	12	49 1/2	53	2 5/8	4	35 1/4	35 7/8	81/2	49 1/2	191/2	24	6	14 1/4	187	36	/2	15-52	4,544
12	250B	4 /8	52 3/4	57	3 / 6		55 17 1		0 172	17 172	17 172	21	7 1/16		107	50	2	LJ-J.Z	5,200
49	150B	15	56	59 1/2	2 3/4	4	39 5/16	41 7/16	10 1/2	57 3/4	24 7/8	24	7 1/2	17 5/8	290	44	/2	15.6	6,925
10	250B	17 1/2	60 3/4	65	4	Т	01/10	1 7/10		5/ 3/4	24 //8	24	8 3/4	17 5/0	270	40	2	LJ-0	8,100
54	150B	15	62 3/4	66 1/4	3	8	44 1/4	45 7/16	10 1/2	61 3/4	24 7/8	24	7 1/2	17 5/8	290	44	3/4	LS-6	9,255
60	150B	15	69 1/4	73	3 1/8	8	48 1/4	51 7/8	10 1/2	70 1/8	24 7/8	24	7 1/2	17 5/8	290	52	3/4	LS-6	12,880
66	150B	18	76	80	3 3/8	8	53 5/16	58 1/8	10 1/2	76 3/8	24 7/8	24	9	17 5/8	290	52	3/4	LS-6	14,820
72	150B	18	82 1/2	86 1/2	3 1/2	8	59	61	14	79 1/4	32 1/4	24	9	23 3/8	579	60	3/4	LS-7	17,800
84	150B	24	95 1/4	99 3/4	3 7/8	8	71 1/4	71 5/8	14	79 7/8	32 1/4	24	12	23 3/8	579	64	2	LS-7	27,060

Notes:

Flange drilling conforms to ANSI B16.1, Class 125 or Class 250. Consult factory for Worm Gear dimensions.

INSTALLATION DIMENSIONS MECHANICAL JOINT END CONNECTION Traveling Nut Actuator • Class 150B & 250B • Sizes 4" - 24"



							Dime	nsior	ns in I	nches	5						
Valve Size	AWWA Press. Class	A	В	С	D	F	G	Н	J	К	Μ	Ν	Tums to Open	No. of Bolts	Bolt Size	Actuator Size	Approx. Shipping Weight
4	150B 250B	7 1/2	7 1/2	9 1/8	I	6	7 5/8	/2	9 5/8	7 5/8	2 1/2	3 3/4	15	4	3/4	LS-1	90 lbs
6	150B 250B	8	9 1/2	/8	/ 6	7 1/32	8 1/4	/2	10 1/4	7 5/8	2 1/2	4	15	6	3/4	LS-1	135
8	150B 250B	8 1/4	3/4	13 3/8	/8	8	9 3/16	/2	/4	7 5/8	2 1/2	4 3/16	15	6	3/4	LS-1	190
10	150B 250B	8 1/2	14	15 / 6	3/16	10	/ 6	2	4 /8	8 5/8	2 1/2	4 1/4	20	8	3/4	LS-2	265
12	150B 250B	8 5/8	16 1/4	17 15/16	/4	/ 6	12 3/4	2	15 1/4	8 5/8	2 1/2	4 5/16	20	8	3/4	LS-2	345
14	150B 250B	11 3/8	18 3/4	20 5/16	5/16	3 /2	5 / 6	3 1/2	19 1/8	2 / 6	3 1/2	5 / 6	35	10	3/4	LS-3	560
16	150B 250B	11 5/8	21	22 9/16	3/8	14 5/8	16 3/4	3 1/2	20 1/8	12 1/16	3 1/2	5 3/ 6	35	12	3/4	LS-3	670
18	150B 250B	12	23 1/4	24 3/ 6	7/16	5 /2	18 3/16	5	21 7/8	13 3/4	3 1/2	6	50	12	3/4	LS-4	875
20	150B 250B	12 1/2	25 1/2	27 1/8	/2	17 1/2	20 3/16	5	23 7/8	13 3/4	3 1/2	6 1/4	50	14	3/4	LS-4	1,070
24	150B 250B	13	30	31 9/16	5/8	20 1/2	23 3/16	5	26 7/8	13 3/4	3 1/2	6 1/2	50	16	3/4	LS-4	1,395

Notes:

Mechanical Joint (MJ) end connection conform to ANSI/AWWA C111/A21.11.

Consult factory for Worm Gear dimensions.

When used with thick wall PVC pipe, it may be necessary to chamfer pipe ID. Consult factory.

INSTALLATION DIMENSIONS MECHANICAL JOINT END CONNECTION Traveling Nut Actuator • Class 150B & 250B • Sizes 30" - 48"



30'' - 36'' Actuator Orientation

	Dimensions in Inches																			
Valve Size	AWWA Press. Class	A	В	С	D	E		G	Н		KI	K2	Μ	Z	Р	Tums to Open	No. of Bolts	Bolt Size	Actuator Size	Approx. Shipping Weight
30	150B	18 1/8	36 7/8	39 1/8	1 13/16	4	27 3/8	29 3/16	8 1/2	35	19 1/2	-	4	9 1/16	14 1/4	63	20	1	15-5	2 480 lbs
50	250B		30 //0	57 170	1 15/10		27 570	27 5/10	0 1/2	55	17 172			7 1/10	1 1 1/ 1	05			23.3	2,100103
36	150B	19 1/4	43 3/4	46	r	4	29 1/2	317/8	81/2	37 3/4	19 1/2		4	95/8	14 1/4	63	24	1	155	3 775
50	250B	19 1/4 43 3	דוכ כד	10	2	т	27 172	01710	0 1/2		17 172	-	'	/ 5/0		00	ΖT	I	L3-3	5,775
12	150B	10.2/4		E2 1/0	C	4	25 1/4	25 7/0	0.1/2	41.2/4	10.1/2	17.1/2	4	0.7/0	14.174	107	20	1.174		E 9.00
42	250B	17 5/4	50 5/6	55 1/0	2	4	55 1/4	22/10	0 1/2	41 3/4	17 1/2	1/1/2	4	7 //0	14 1/4	107	20	1 1/4	L3-3.Z	5,600
10	150B	21 5/14	57 1/2	60	C	4	29 5/14	41.1/2	10.1/2	50 1/4	24 7/0	22 1/4	1	10 21/22	17 5/0	290	22	1.1/4	15.6	0 4 00
48	250B	21 3/16	57 172	60	Z	+	37 3/16	ТГ 1/∠	10 1/2	50 1/4	27 //0	22 1/4	+	10 21/32	17 3/0	290	52	1 1/4	LJ-D	0,600

Notes:

Mechanical Joint (MJ) end connection conform to ANSI/AWWA C111/A21.11.

Consult factory for Worm Gear dimensions.

When used with thick wall PVC pipe, it may be necessary to chamfer pipe ID. Consult factory.



Space limitations and application specifics often require special accessories. In addition to those shown below, Val-Matic offers a wide range of accessories to meet your application requirements. Please consult factory for assistance.

Extension Stem Assembly







"T" Wrench



Floor Stand



Valve Box



Extended Bonnet



SPECIFICATIONS

SCOPE

 1.1 This specification is designed to cover the design, manufacture and testing of AWWA Class 150B (4"-96") and AWWA Class 250B (4"-48").

STANDARDS AND APPROVALS

2.1 The valves shall be designed, manufactured and tested in accordance with American Water Works Association Standard ANSI/AWWA C504.

CONNECTIONS

- 3.1 Flanged end connections shall fully conform with ANSI B16.1 for Class 125 or Class 250 iron flanges. Both 125 and 250 flanges shall be flat faced.
- 3.2 Mechanical Joint end connections shall fully conform with ANSI/AWWA CIII/A21.11.

DESIGN

- 4.1 Valve shafts shall be of the through-type for sizes 4"-24". 30" and larger shall be of the stub type design. Shafts shall be locked to the disc by O-Ring sealed taper pins retained with Stainless Steel nuts. Through-type shafts shall be supplied on 30" and larger valves when specified.
- 4.2 Valve Discs shall be of the solid type without external ribs or vanes to obstruct flow.
- 4.3 Resilient seats shall be located on the valve disc and shall provide a 360° continuous, uninterrupted seating surface. Seats shall be mechanically retained with a stainless steel retaining ring and stainless steel Nylok® cap screws which shall pass through both the resilient seat and the retaining ring. The resilient seat's mating surface shall be to a 360° continuous, uninterrupted stainless steel body seat ring. The retaining ring shall be continuous or investment cast with overlapping sections, serrated grooves, and shoulders. Resilient seats shall be field adjustable and replaceable and shall not require hypodermic needles or pressure vessels to replace or adjust.
- 4.4 Sleeve Bearings shall be provided in the valve hubs and shall be nylatron or woven Teflon, fiberglass backed. They shall be self-lubricating.

- 4.5 Thrust bearings shall be provided and shall be adjustable on valves 30" and larger.
- 4.6 Shaft seals shall be of the V-type and shall be replaceable without removal of the valve from the line or the shaft from the valve.

MATERIALS

- 5.1 Body: Class 150B valve bodies shall be ASTM A126, Grade B gray iron. Class 250B valve bodies shall be ASTM A536 Grade 65-45-12 ductile iron.
- 5.2 Disc: Valve disc shall be ASTM A536 Grade 65-45-12 ductile iron.
- 5.3 Shafts: Shafts shall be ASTM A276 type 304, or ASTM A564, type 630 Stainless Steel.
- 5.4 Seat: Resilient seat shall be Buna-N and mate to a type 316 Stainless Steel body seat ring.
- 5.5 Hardware: All seat retaining hardware shall be type 316 stainless steel.

ACTUATION

6.1 Manual, electric or cylinder actuation shall be provided as specified.

MANUFACTURE

- 7.1 Valves shall be proof of design tested in accordance with ANSI/AWWA C504, and certified to ANSI/NSF 61 Drinking Water System Components - Health Effects.
- 7.2 Valve exteriors for above ground service shall be coated with a universal, alkyd primer. Valve exteriors for buried service shall be coated with an Asphalt Varnish. Valve interiors shall be coated with an ANSI/NSF 61 epoxy coating approved for potable water. Fusion Bonded Epoxy shall be supplied on the exterior and interior when specified.
- 7.3 Valve shall be Val-Matic[®] Series 2000 or equal.



ANSI/NSF Standard 61 Drinking Water System Components 2LA8



Make the change to QUALITY! Specify VAL MATIC®

Val-Matic's quality of design and meticulous workmanship has set the standards by which all others are measured. Quality design features such as Type 316 stainless steel trim as standard on Air Release, Air/Vacuum and Combination Air Valves...combined resilient/metal to metal seating for Silent Check[®] Valves...stabilized components that provide extended life of the Dual Disc[®] Check Valves...high strength and wear resistant aluminum bronze trim as standard for Tilted Disc[®] Check valves...unrestricted full flow area through Swing-Flex[®] Check Valves...heavy duty stainless steel screened inlet on Sure Seal[®] Foot Valves...a Cam-Centric[®] Plug Valve with more requested features than any other eccentric plug valve, and the American-BFV[®] Butterfly Valve that provides a field replaceable seat without the need for special tools. These features coupled with our attention to detail put Val-Matic valves in a class by themselves.

Val-Matic is totally committed to providing the highest quality valves and outstanding service to our customers. Complete customer satisfaction is our goal.



VAL-MATIC VALVE AND MANUFACTURING CORP.

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