

# PNEUMATIC AND ELECTRIC ACTUATED BALL VALVES

## BVP80 Series

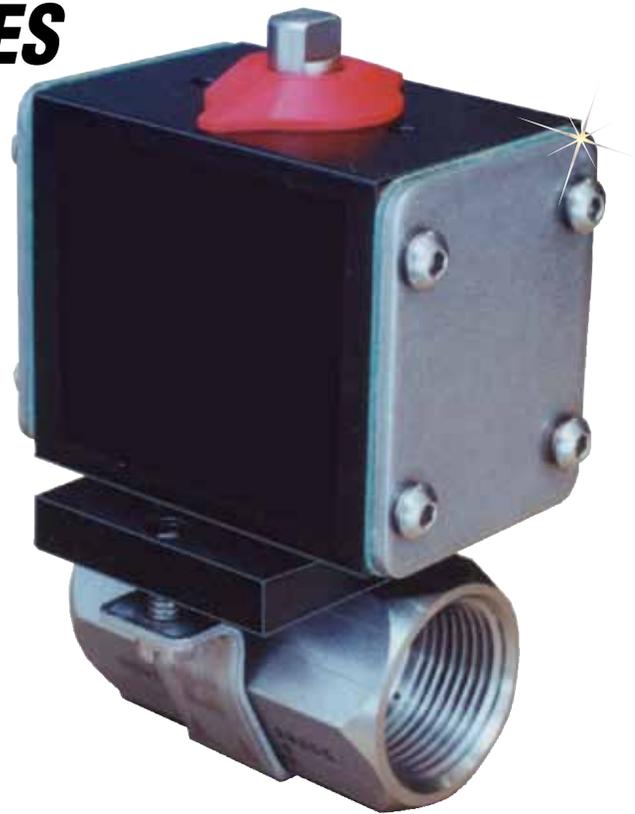


- ✓ Compact Size and Lightweight Construction
- ✓ Reliable, Long Lasting Performance
- ✓ Standard “In Line” or “Cross Mount” Valve to Actuator Configurations
- ✓ Spring-Return Design Accommodates Air Supply as Low as 3.5 bar (50 psi)
- ✓ Stainless Steel External Trim and FKM O-Rings Standard
- ✓ Direct Valve Stem Coupling to Actuator Shaft Minimizes Backlash
- ✓ Manual Override Standard
- ✓ Electric Actuators Feature Two ½ NPT Conduit Ports and Integral Thermal Overload Protection

The pneumatic actuators on the BVP/BVPS80 and BVP/BVPS70 Series offer the latest technology for pneumatically actuating BV80 Series ball valves with NPT threads and BV70 Series with compression fittings. The BVP80 and BVP70 Series are a combination of the three key elements for long, reliable, trouble free life—a premium quality ball valve, a quality actuator designed to meet the torque requirements of the valve, and a mounting system which assures alignment and rigidity.

The BV80 and BV70 ball valves low operating torque makes possible a compact actuator that is both economical to install and operate. Precise machining of all the valve components, including the seats, controls the sealing preload. This assures bubble-tight sealing, minimizes the operating torque and optimizes the valve life.

The mounting system precisely couples the actuator drive shaft to the valve stem. Additionally, the valve stem nut is fixed within the actuator shaft. These features combined with a rigid mounting bracket, results in a pneumatically actuated ball valve which minimizes backlash, assures optimum stem seal life and eliminates any possibility of stem nut backing off while in service.



BVP82-SS shown smaller than actual size.

The BVPS80 and BVPS70 Series offers a spring-return model requiring only 3.5 bar (50 psi) supply air that can spring to open or close without loss of output torque from the air operated side. This is achieved by two opposing lightweight nylon resin or manufactured aluminum housed spring modules that are fully compressed by air operated diaphragm pistons.

All BVPS80 and BVPS70 Series are designed to operate using an air supply of 3.5 to 8.6 bar (50 to 125 psi). The air can be delivered by direct mounting pilot valves having NAMUR interfaces or from remote pilot valves connected via means of ½ NPT female threaded orifices in the actuator face plates.

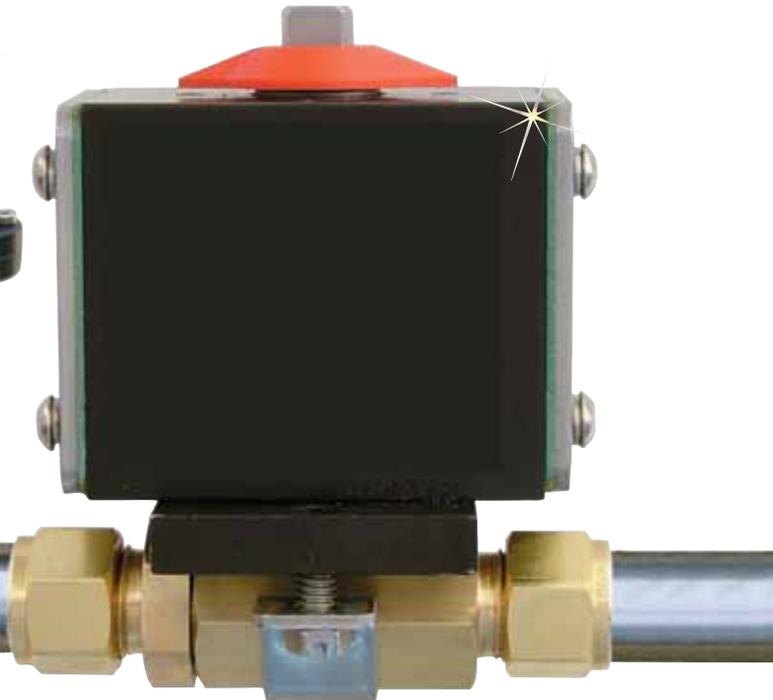
**Caution:** Care must be taken to assure that the output torque of the BVP80 Series actuator selected is adequate to turn the valve or device to be operated.

A Limit Switch accessory is offered for the pneumatic actuators. The BVLS limit switch is easily mounted to any pneumatic actuator and provides a means to remotely display valve position or to interconnect the valve with related equipment such as pumps or other valves.

The limit switch accessory utilizes two mechanical S.P.D.T. (Single-Pole, Double-Throw) micro switches that respond to actuators' fully open or fully closed position by means of a cam fitted to the actuator top shaft. The switches are rated at 10 amp 250 Vac max.



**BVE83-SS shown smaller than actual size.**



**BVP71 shown smaller than actual size.**

The limit switch is totally enclosed and may be used in applications where a dust tight or weather tight enclosure is required as well as in those locations where general purpose enclosures will serve. The housing, like our pneumatic actuators, is made from 6061-T6 aluminum and has a PTFE impregnated hard-anodized surfaces to enhance corrosion resistance.

The BVE80 and BVE70 Series electric actuated ball valves are a compact mounting system that assures rigid and precise coupling of the actuator to the valve. The unique system features machined alignment brackets oriented with precision locator elements that serve to absorb the reaction torque independent of the mounting bolts. The end result is a system that eliminates the common problem of the mounting bolts loosening while in service. Additional features include thermal overload protection and manual override.

## SPECIFICATIONS

(BVE80 and BVE70 Series)

Materials of Construction

**Enclosure:** FR50 Cover, PTFE coated cast aluminum base

**Shaft:** 18-8 Stainless Steel

**External Trim:** 300 Series Stainless Steel

**Temperature:** 4.4 to 65.5°C (40 to 150°F)

**Motor:** Reversing, brushless, capacitor-run with auto-reset thermal overload protection

**Gear Train:** Permanently lubricated, maintenance free

**Power:** 120 Vac 50/60 Hz single phase

**Ports:** (2) ½ NPT conduit

**Cycle Time:** 6 seconds

**Duty Cycle:** Models smaller than 25 mm (1"):100%, models 32 mm (1¼") and larger: 75%

**Torque Output:**

**150 in-lbs:** models smaller than 25 mm (1")

**300 in-lbs:** models 1¼" and larger

## SPECIFICATIONS

(BVP/BVPS80 and BVP/BVPS70 Series)

Materials of Construction

**Body:** Aluminum with PTFE impregnated hard anodized surfaces

**External Hardware:** (pinion shaft, driver, end caps) 300 Series Stainless Steel

**Spring Modules:** Nylon resin or machined aluminum housing, 300 SS hardware

**External Trim:** 300 Series Stainless Steel

**Temperature:** -28.8 to 176.6°C (-20 to 350°F)

**Power:** 3.4 to 8.6 bar (50 to 125 psi) air. Sufficient air delivery must be available at the actuator to ensure dependable operation. The following precautions should be observed: Air supply should be clean and free of moisture. When dirty or wet air is a problem; a filter/separator should be specified; these units are most effective when installed as closely as possible to the actuator. A filter, when used, should permit a minimum flow of 4 scfm at an upstream pressure of 4 bar (60 psi). Eliminate severe restrictions to air flow (certain solenoid valves and fittings). The most restricted passage must have an area no smaller than 0.012 in<sup>2</sup>, the area of 3 mm (⅜") diameter orifice. If more than a single actuator is to be supplied by an individual pilot, the minimum passage requirement applies per actuator.

**Port Connections:** ½ NPT

**Tube:** For short runs up to 1.5 m (5'), 4 mm (⅝") I.D. is suitable, 6 mm (¼") I.D. will serve up to 9 m (30'). For longer runs, use 10 mm (⅝") I.D. or larger.

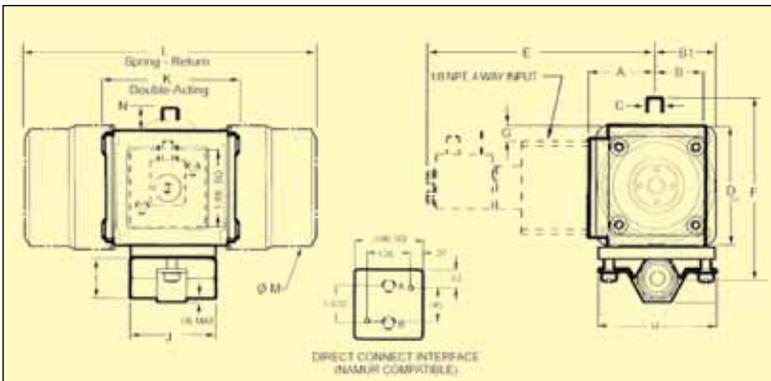
**Interface:** NAMUR

**Duty Cycle:** 100%

**Cycle Time:** (To open or close) approx ½ to 1 second\*

\* *Dependent upon actuator model, air pressure and delivery*

**BVP80/BVPS80 Dimensions**

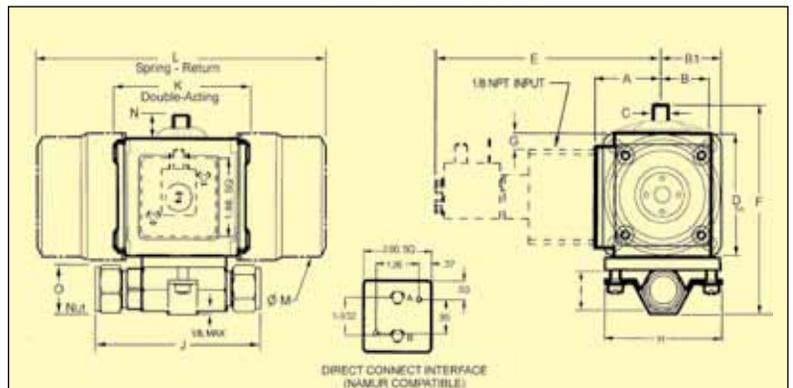
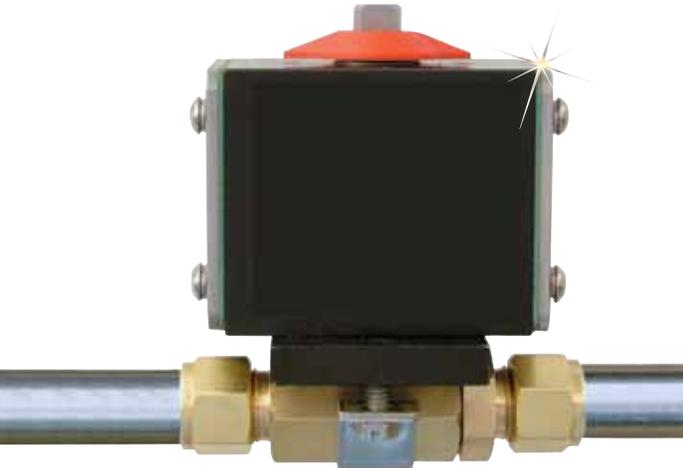


**BVPS81-SS shown smaller than actual size.**

Valve Size	Actuator Model	Approximate Dimensions, Inches																				
		A	B	B1	C	D	E	F	G	H	I	J	K	L	M	N						
1/4 & 3/8	Spring Return Double Acting	1.36	1.00	1.53	.31	3.06	4.67	.32	3.00			3.88	1.00	2.22								
1/2												4.06	1.18	2.61								
3/4												4.38	1.50	2.94								
1												6.44	2.00	3.32								
1-1/4												7.59	2.12	3.70								
-1/2												8.09	1.10	4.75			2.62	4.25	5.28	11.23	3.50	.82
2												8.47	3.00	4.57								

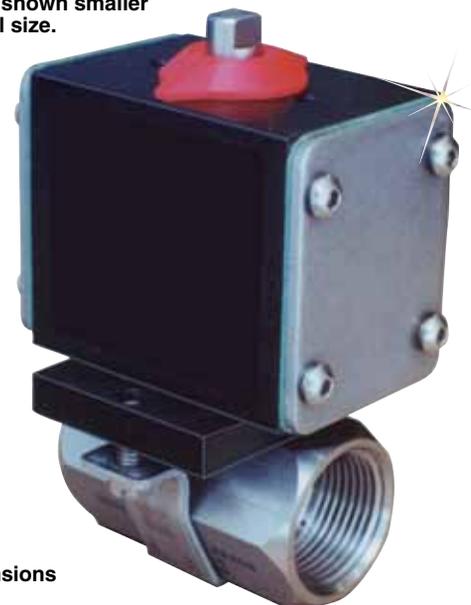
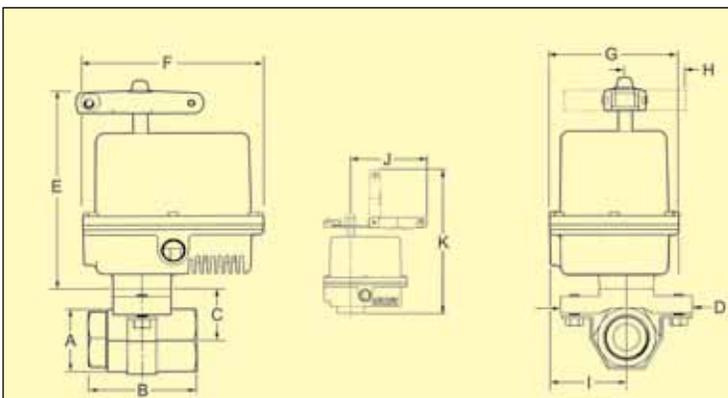
**BVP70/BVPS70 Dimensions**

**BVP71 shown smaller than actual size.**



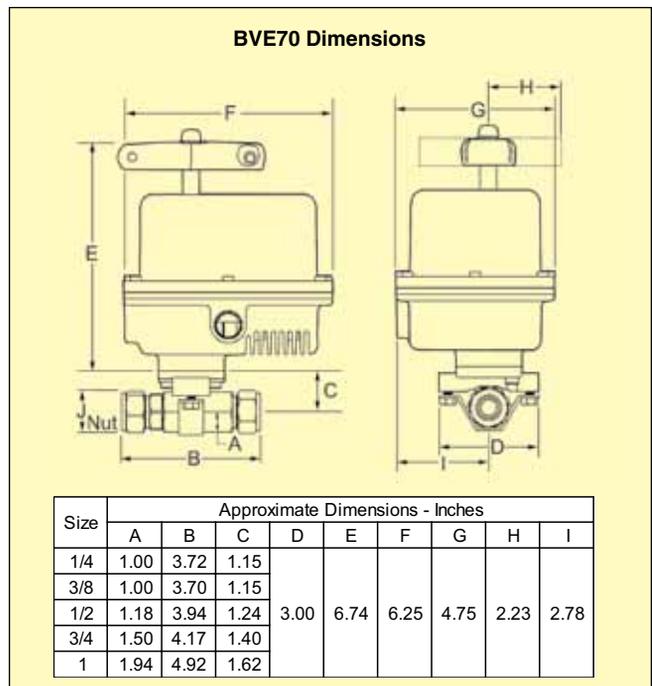
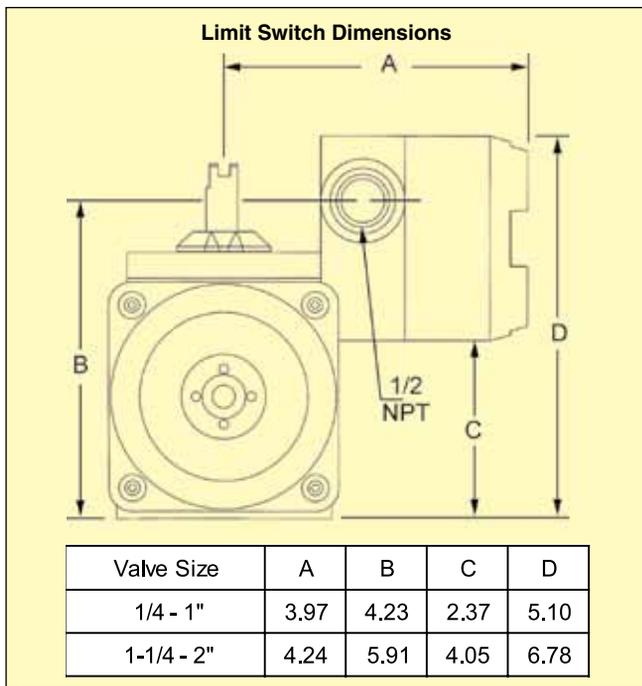
Tube Size	Actuator Model	Approximate Dimensions - Inches															
		A	B	B1	C	D	E	F	G	H	I	J	K	L	M	N	O
1/4	Spring Return Double Acting	1.46	1.00	1.53	.31	3.06	4.67	.32	3.00			4.51	1.00	3.72			9/16
3/8												4.51	1.00	3.70			11/16
1/2												4.61	1.00	3.94			7/8
3/4												4.91	1.19	4.17			1-1/8
1												5.37	1.50	4.92			1-1/2

**BVP84-SS shown smaller than actual size.**



**BVE80 Dimensions**

Valve Size	Dimensions - Inches										
	A	B	C	D	E	F	G	H	I	J	K
1/4 & 3/8	1.00	2.22	1.15	3.00	6.74	6.25	4.75	2.23	2.78	5.77	10.35
1/2	1.18	2.61	1.24	3.00	6.74	6.25	4.75	2.23	2.78	5.77	10.35
3/4	1.50	2.94	1.40	3.00	6.74	6.25	4.75	2.23	2.78	5.77	10.35
1	1.94	3.32	1.62	3.00	6.74	6.25	4.75	2.23	2.78	5.77	10.35
1-1/4	2.12	3.70	1.76	4.80	7.24	6.25	4.75	2.23	2.78	5.77	10.85
1-1/2	2.62	4.25	2.02	4.80	7.24	6.25	4.75	2.23	2.78	5.77	10.85
2	3.00	4.57	2.21	4.80	7.24	6.25	4.75	2.23	2.78	5.77	10.85



<b>To Order</b>						
Pneumatic Double-Acting with Integral Pilot 120 Vac		Pneumatic Spring-Return with Integral Pilot 120 Vac		Electric 120 Vac		
NPT Connection	Compression Fitting Connection	NPT Connection	Compression Fitting Connection	NPT Connection	Compression Fitting Connection	
<b>Brass</b>						
Model No.	Model No.	Model No.	Model No.	Model No.	Model No.	Size
BVP81	BVP71	BVPS81	BVPS71	BVE81	BVE71	1/4
BVP82	BVP72	BVPS82	BVPS72	BVE82	BVE72	3/8
BVP83	BVP73	BVPS83	BVPS73	BVE83	BVE73	1/2
BVP84	BVP74	BVPS84	BVPS74	BVE84	BVE74	3/4
BVP85	BVP75	BVPS85	BVPS75	BVE85	BVE75	1
BVP86		BVPS86		BVE86		1 1/4
BVP87		BVPS87		BVE87		1 1/2
BVP88		BVPS88		BVE88		2
<b>316 Stainless Steel</b>						
Model No.	Model No.	Model No.	Model No.	Model No.	Model No.	Size
BVP81-SS	BVP71-SS	BVPS81-SS	BVPS71-SS	BVE81-SS	BVE71-SS	1/4
BVP82-SS	BVP72-SS	BVPS82-SS	BVPS72-SS	BVE82-SS	BVE72-SS	3/8
BVP83-SS	BVP73-SS	BVPS83-SS	BVPS73-SS	BVE83-SS	BVE73-SS	1/2
BVP84-SS	BVP74-SS	BVPS84-SS	BVPS74-SS	BVE84-SS	BVE74-SS	3/4
BVP85-SS	BVP75-SS	BVPS85-SS	BVPS75-SS	BVE85-SS	BVE75-SS	1
BVP86-SS		BVPS86-SS		BVE86-SS		1 1/4
BVP87-SS		BVPS87-SS		BVE87-SS		1 1/2
BVP88-SS		BVPS88-SS		BVE88-SS		2

**Accessories**

Model No.	Description
BVLS1	Limit switch for 1/4 to 1" pneumatic valves
BVLS2	Limit switch for 1/4 to 2" pneumatic valves

Comes complete with operator's manual. **BVP** and **BVPS** pneumatic units include solenoid valve.  
**Ordering Examples:** **BVP86-SS**, 316SS 1 1/4 FNPT ball valve with pneumatic actuator.  
**BVE85**, Brass 1 FNPT ball valve with electric actuator.