

# BL Series – Latching Valve

- ▶ 3-Way or 2-Way Valves
- ▶ Low Power Requirements
- ▶ MOPD: 240 PSI (12.4 bar)
- ▶ Dual Diode Protection Optional

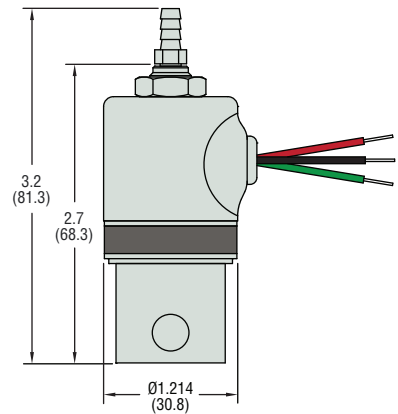
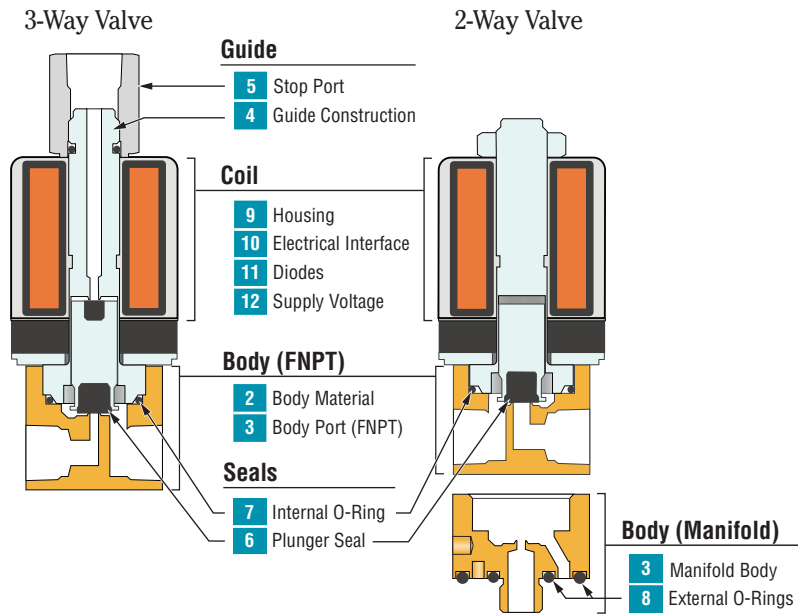
The BL series latching valve allows the user to pulse the valve and have it change state. The voltage does not need to be constantly applied in order to hold it in a state. These valves are ideal for controlling larger pneumatic valves in remote applications where power is limited or when the temperature of the media cannot be impacted as it flows through the valve. The larger pneumatic valves can close and open large pipes and these latching valves control them. The term Latch refers to the valve in the open state where supply pressure goes to the external valve. The unlatched state is when the supply is cut off and the external valve is exhausted to ambient.



## Typical Applications

- Natural Gas Plunger Lifts
- Natural Gas Separators
- Gas Chromatography
- Irrigation Systems

## Reference



**Example Shown**  
Part Number: BL311-01LC-18B-VBX-GPBD2  
From How to Order example below.

## How To Order

Valve Part Numbers are built from a series product codes. Use the **Bold** product codes from the choices listed on the following page to construct a complete Part Number.

<b>BL</b>	<b>311</b>	-	<b>01</b>	<b>LC</b>	-	<b>1</b>	<b>8B</b>	-	<b>V</b>	<b>B</b>	<b>X</b>	-	<b>G</b>	<b>PB</b>	<b>D</b>	<b>2</b>
Series	Function		Body Material	Body Port		Guide Construction	Stop Port		Plunger Seal	Internal O-Ring	External O-Ring		Housing	Electrical Interface	Diodes	Supply Voltage

## Product Description from Example Shown Above:

### BL311-01LC-18B-VBX-GPBD2

- BL311 = BL Series with 3-Way Latching Valve Function (Orifice Body/Stop: 1/32" / 3/64");
- 01LC = 303 SS Body Material; 1/8" FNPT Body Port;
- 18B = 303 SS 1-piece Guide Construction; 1/8" Barb Stop Port;
- VBX = Viton® Plunger Seal; Nitrile (Buna-N) Internal O-Ring;
- GPBD2 = Grommet Housing Construction; Positive Pulse, Black Common Electrical Interface; With Diodes; 12 VDC Supply Voltage

SOLENOID VALVES

# BL Series – Part Number Build

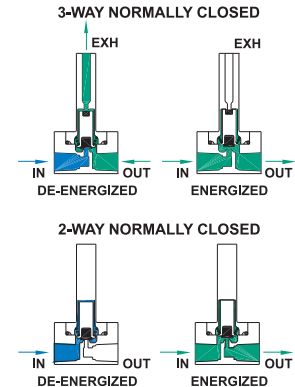
Build a Valve Part Number by filling in the boxes below using the related code numbers on this page.

BL  -   -   -    -

1                      2            3                      4            5                      6            7            8                      9            10            11            12

## 1 Valve Function and Orifice Size

Valve Function	Code	Orifice				MOPD		C <sub>v</sub>		K <sub>v</sub>	
		Body		Stop		psi	bar	Body	Stop	Body	Stop
		inches	mm	inches	mm						
3-WAY N.C.	311	1/32	0.79	3/64	1.19	100	6.9	0.018	0.040	0.0153	0.034
	313	1/16	1.59	1/16	1.59	50	3.4	0.070	0.070	0.060	0.060
2-WAY N.C.	201	1/16	1.59	—	—	240	12.4	0.065	—	0.056	—
	202	5/64	1.98	—	—	180	10.3	0.09	—	0.078	—
	203	3/32	2.38	—	—	150	8.3	0.155	—	0.134	—
	204	7/64	2.78	—	—	120	6.2	0.2	—	0.173	—
	205	1/8	3.18	—	—	60	4.1	0.24	—	0.208	—
	206	5/32	3.97	—	—	50	2.1	0.3	—	0.259	—
	207	3/16	4.76	—	—	15	1	0.43	—	0.372	—



## 2 Body Material

- 01 303 Stainless Steel
- 03 Brass
- 05 316 Stainless Steel

## 3 Body Port

- LC 1/8" Female NPT
- LB 1/4" Female NPT
- M3 Manifold Mount – 5/16" Thread Stud
- OB Omit Body (Operator Style)

## 4 Guide Construction

- 1 303 Stainless Steel 1-Piece

## 5 Stop Port

- BS #10-32 Female Thread
- 8B 1/8" Brass Barb Fitting
- AC 1/8" Female NPT Adaptor
- AB 1/4" Female NPT Adaptor
- XX Not Applicable (All 2-Way Valves)

## 6 Plunger Seal Material

- H Hydrin®
- V Viton®
- P Perfluorelastomer

## 7 O-Ring Material (Internal)

- B Nitrile (Buna-N)
- V Viton®
- P Perfluorelastomer

## 8 O-Ring Material (Manifold Mount External)

- B Nitrile (Buna-N)
- V Viton®
- P Perfluorelastomer
- X Not Applicable

## 9 Housing Construction

- C Conduit
- G Grommet

## 10 Electrical Interface

- PB Positive Pulse, Black Common
- NB Negative Pulse, Black Common
- NW Negative Pulse, White Common

## 11 Diodes

- N No Diode
- D Diode

## 12 Supply Voltage

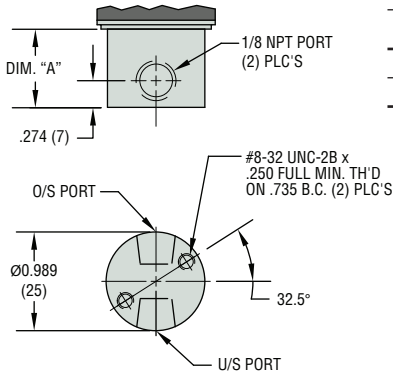
Unlatch voltage should not exceed 25% rated voltage to ensure change of state.

- 2 12 VDC, 9 Watts Latching, 7 Watts Unlatching
- 4 24 VDC, 7 Watts Latching, 9 Watts Unlatching
- 6 6 VDC, 7 Watts Latching, 5 Watts Unlatching

# BL Series – Additional Component Details & Dimensions

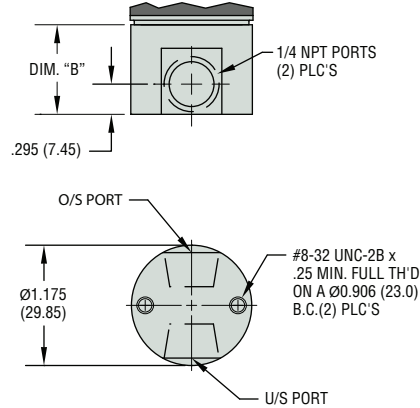
## 3 Body Port

### 1/8" FNPT Port (LC)



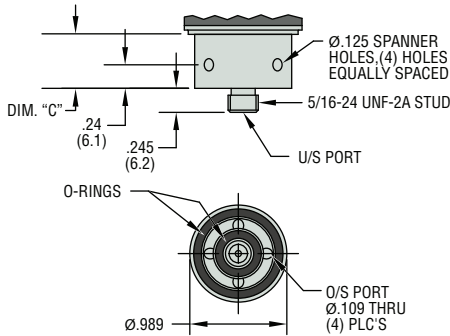
Valve Type	Dim. "A"
3-Way	.900 (22.9)
2-Way	.795 (20.2)

### 1/4" FNPT Port (LB)



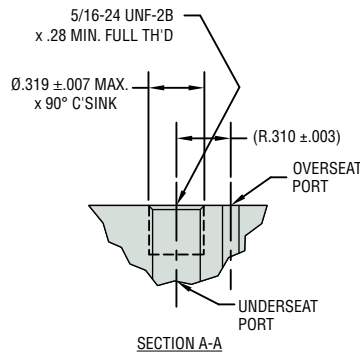
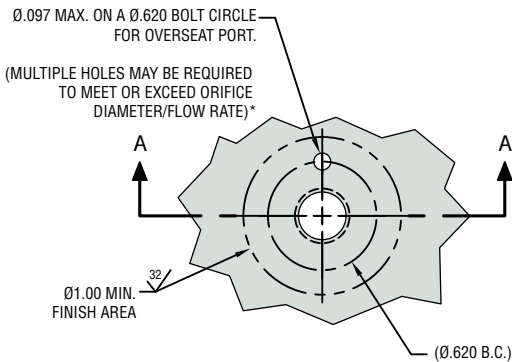
Valve Type	Dim. "B"
3-Way	.980 (24.9)
2-Way	.875 (22.2)

### Manifold Mount Body (M3)



Valve Type	Dim. "C"
3-Way	.610 (15.5)
2-Way	.550 (13.9)

### Manifold Preparation

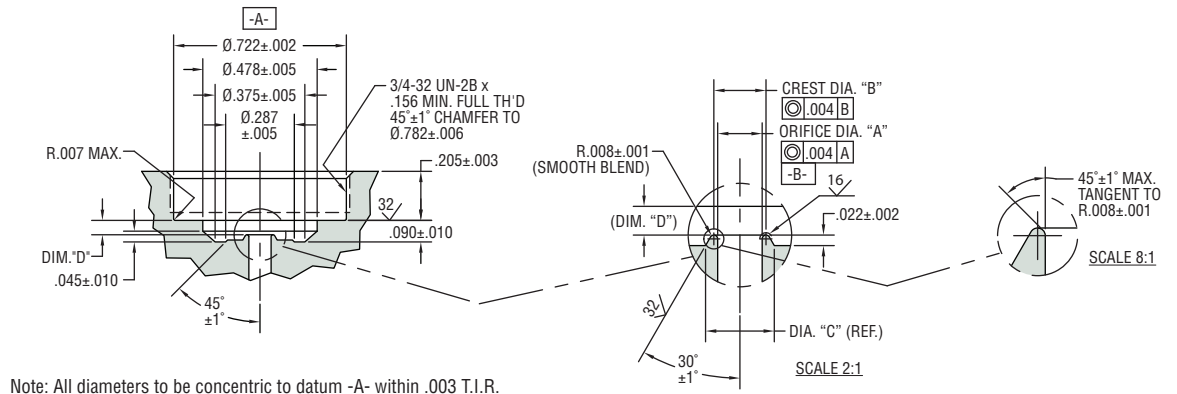
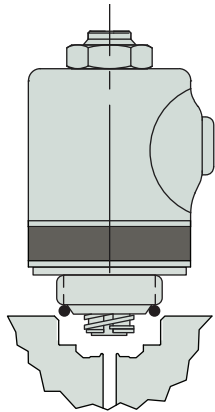


\*IF THE TOTAL AREA OF OVERSEAT PORT IS LESS THAN THE ORIFICE DIAMETER, THEN THE OVERSEAT IS THE RESTRICTOR.

# BL Series – Additional Component Details & Dimensions, cont.

## Omit Body Manifold Mount (OB)

### 2-Way

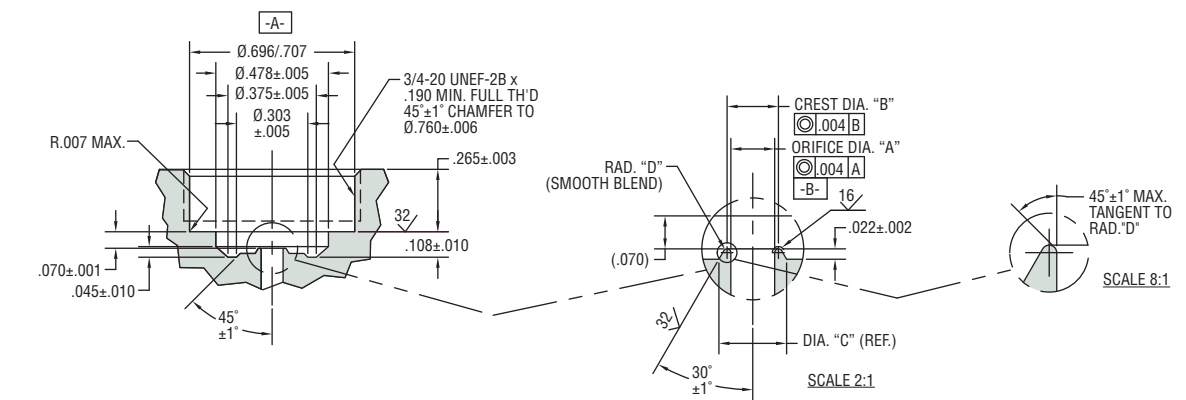
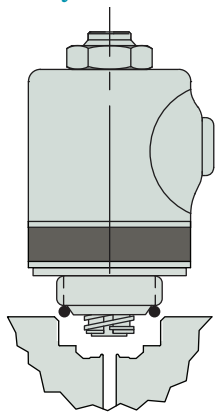


Note: All diameters to be concentric to datum -A- within .003 T.I.R.

### Dimensions

Valve Prefix	Orifice Dia. "A" $\pm .001$	Crest Dia. "B" $\pm .002$	Base Dia. "C" Ref.	Orifice Depth Dim. "D" $\pm .001$
BL201	.062	.078	.1126	.052
BL202	.078	.094	.1286	.056
BL203	.093	.109	.1436	.060
BL204	.109	.125	.1596	.064
BL205	.120	.136	.1706	.067
BL206	.148	.164	.1986	.074
BL207	.176	.192	.2266	.081

### 3-Way



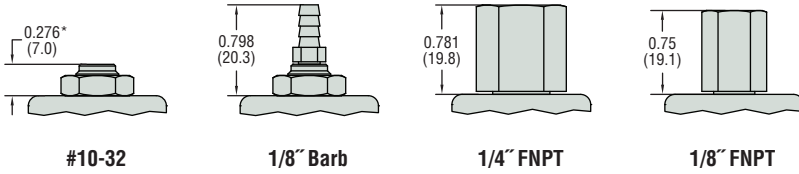
Note: All diameters to be concentric to datum -A- within .003 T.I.R.

### Dimensions

Valve Prefix	Orifice Dia. "A" $\pm .001$	Crest Dia. "B" $\pm .002$	Base Dia. "C" Ref.	Rad. "D" $\pm .001$
BL311	.040	.052	.0843	.006
BL313	.062	.078	.1126	.008

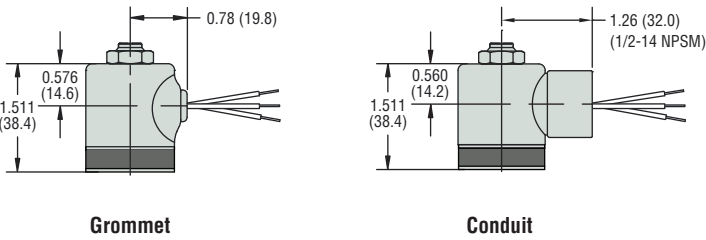
## BL Series – Additional Component Details & Dimensions, Cont.

### 5 Stop Port (3-Way Only)



\* Dimension is same for 2-way valves.

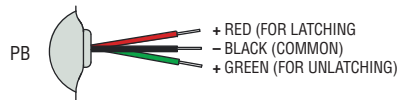
### 9 Housing Construction



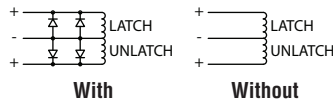
### 10 Electrical Interface

### 11 Diodes

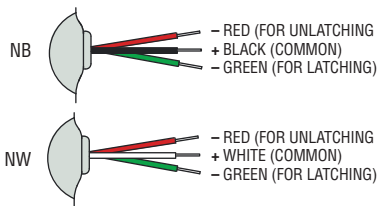
#### Positive



#### Diodes



#### Negative



#### Diodes

