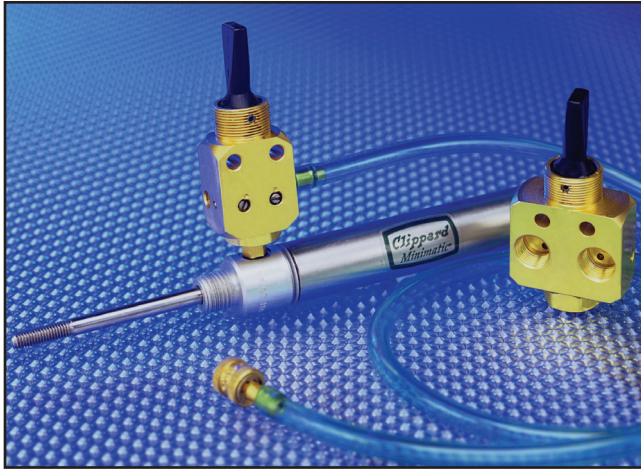




# FBV-3 Fill and Bleed Valve



A new special valve called a “fill and bleed” has been added to the Clippard valve product line. This new toggle valve has two poppet valves connected to a single outlet. The operation is similar to a three-way, three-position center blocked valve.

Depressing the toggle from the center in one direction allows flow from the inlet to the outlet. Depressing the toggle in the other direction allows flow from the outlet to exhaust. In the toggle center position, the inlet, outlet and exhaust are blocked maintaining the existing pressure. Toggle positions can be momentary or maintained by a detent depending on the model selected. In the adjustable flow models, both flow rates are controlled by built-in needle valves. The non-adjustable models have no built-in needle valves.

**Applications.** The FBV-3 with adjustable flow may be used to pressurize or “fill” a chamber or bladder by depressing the toggle in one direction and then de-pressurize or “bleed” that same chamber or bladder by depressing the toggle in either direction. Toggling back and forth between the inlet and exhaust provides a fine adjustment of the required pressure in the chamber or bladder.

It may also be used to control the extend and retract speed of a single acting spring return cylinder. Two built-in needles valves independently control the flow of air in both directions so that the pressurizing step may be faster or slower than the de-pressurizing step. In the case of a single acting cylinder, this allows the extend rate of the cylinder to be fast and the retract rate very slow or vice versa.

The non-adjustable models may be used for the same applications where higher flow is necessary and the flow is only controlled by toggling the valve back and forth. These models may also be used as a selector between two different pressure supplies using the exhaust port as the second inlet.

## Features

- Adjustable or non-adjustable flow models available.
- Adjustable models have built-in needle valves to control flow.
- Non-adjustable models may be used as pressure selectors.
- Compact design, simple to install in circuit.
- Rugged Delrin® toggle for easy operation.
- Mounting threads for panel or two holes for surface mounting.
- Bright dipped brass construction for long life and corrosion-resistance.
- Stainless steel springs, Delrin® toggle and spools—non-corrosive.
- Buna-N seals; Viton® option available.

## Specifications

**Valve Type:** 3-way poppet valve, 3-position, center blocked

**Toggle Position Options:**  
Momentary, spring centered, momentary  
Detented, spring centered, momentary  
Detented, spring centered, detented

**Medium:** Air

<b>Air Flow:</b>	<u>Adjustable Models</u>	<u>Non-Adjustable Models</u>
	3.0 scfm @ 50 psig	4.5 scfm @ 50 psig
	5.0 scfm @ 100 psig	7.5 scfm @ 100 psig

**Inlet Pressure:** 120 psig max. or 30” Hg vacuum

**Arc of Travel:** 35° each side of center

**Force for Full Toggle Travel:** 8 oz. nominal

**Temperature Range:** 32° to 230°F

**Mounting:** 5/8”-32 male thread, nut and lockwashers provided, two 0.171 mounting holes in body or may be mounted directly on a cylinder

**Port:** #10-32 female thread or 1/8” NPT female thread

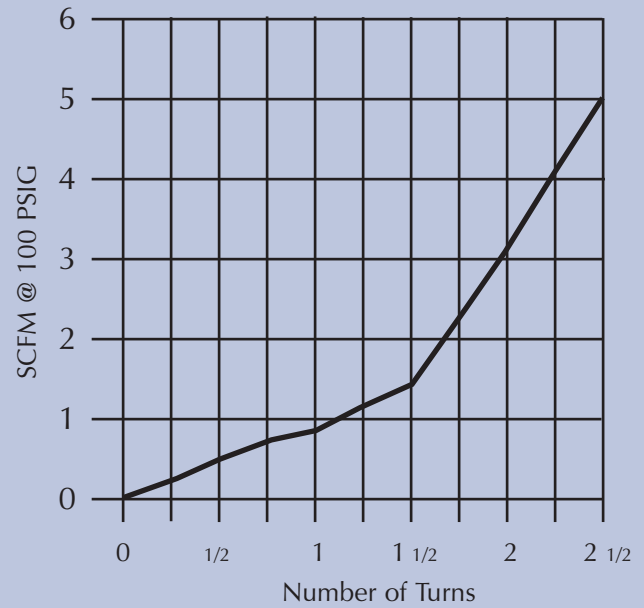
# Valve Operation

Inlet air is directed to the center of the first poppet which is normally closed. Opening this poppet, by depressing the toggle in one direction, allows flow (controlled by the **inlet flow needle** on adjustable models) to the outlet port. Returning the toggle to the center position blocks all flow.

Depressing the toggle in the opposite direction opens the second poppet and allows air to flow from the outlet (through the **exhaust flow needle** on adjustable models) to exhaust. Once again, returning the toggle to the center position blocks all flow.

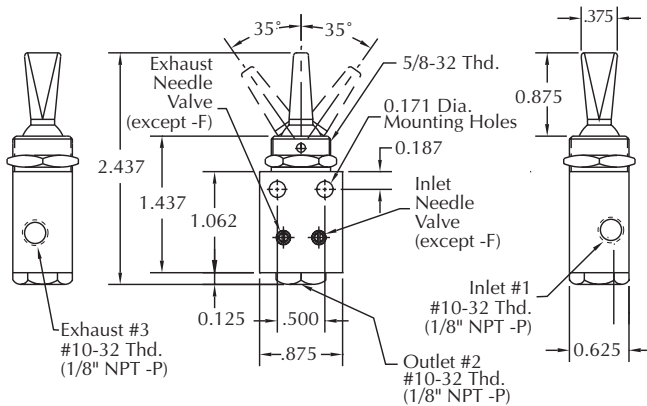
Used as a selector, the exhaust port is connected to a second supply. The valve now operates as two two-way valves, and toggling from one side to the other opens each supply to the outlet.

### FBV-3 Adjustable Fill and Bleed Flow vs Needle Turns

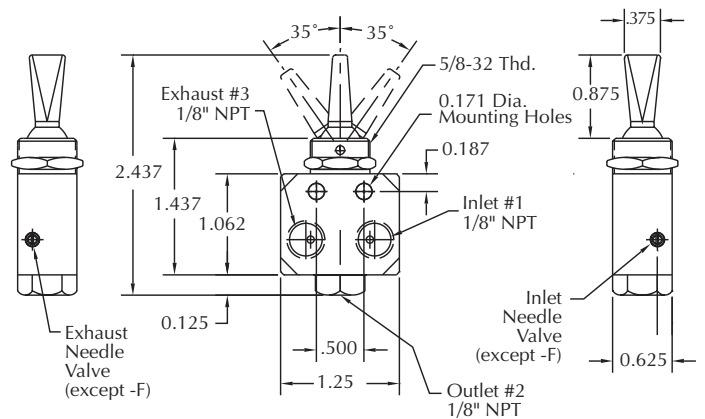


## Dimensions

### FBV-3 □, FBV-3 □ F, FBV-3 □ PF



### FBV-3 □ P



## Ordering System

Order No.	3-Way Valve	Order No.	Toggle Action		Port Size		Flow		Seals	
			Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	
FBV-		3	Detented/Detented	D	#10-32 Thread	(blank)	Adjustable (needle valves)	(blank)	Buna-N	(blank)
			Momentary/Momentary	M	1/8" NPT	P				Viton Seals
			Detented/Momentary	DM	Metric Thread	5	Non-Adjustable (no needles)	F	-	-

Example Part Number: FBV-3MPF-V

## Distributed By

