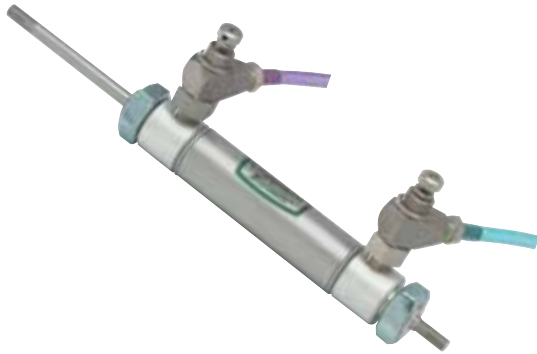




# FLOW CONTROL VALVES

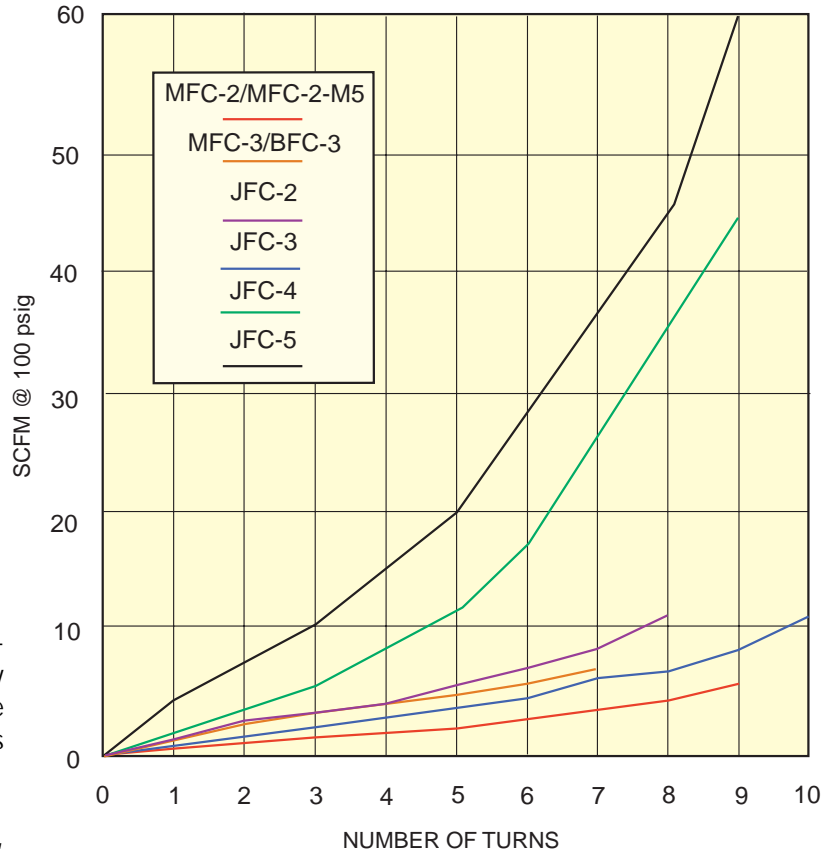
## Flow Controls Flow vs. Needle Turns



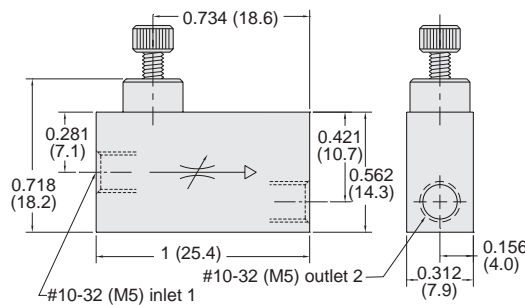
Clippard offers five models of adjustable flow controls with #10-32 through 3/8" NPT ports. They feature a combination needle and check valve that controls flow in one direction and allows free flow in the opposite direction.

They are an ideal valve for use with a cylinder, providing a slow extend stroke while allowing a fast retract stroke. The chart on this page illustrates the flow versus the number of needle adjustments turns for the MFC-2, MFC-2-M5, MFC-3, BFC-3, JFC-2, JFC-3, JFC-4 and JFC-5.

Medium: Air, Water or Oil



### Adjustable Flow Control Valve



**Materials:** Brass body and stainless steel needle; Buna-N seals

**Input Pressure:** 300 psig max.

**Air Flow:** 4 SCFM max. @ 50 psig; 7 SCFM max. @ 100 psig

**Pressure To Open:** Cracks at approx. 2 psig

**Mounting:** Inline

**Flow Direction:** Arrow in valve body shows direction of controlled flow

**Adjustment:** Knurled knob on needle shaft



Part No.	Description
MFC-2 . . . . .	Adjustable Flow Control Valve, #10-32
MFC-2-M5 . . . . .	Adjustable Flow Control Valve, M5

**Input Pressure:** 150 psig max.

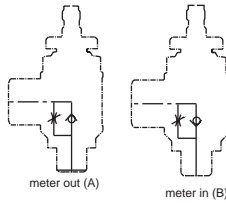
**Air Flow:** 5 SCFM @ 100 psig adjustable

**Mounting:** Directly into #10-32 port

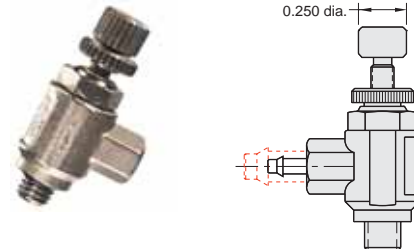
**Ports:** Rotating input port allows 360° positioning #10-32 port

**Flow Direction:** Arrow on valve body shows direction of controlled flow

**Adjustment:** Screwdriver slot; slotted knurled knob with lock nut on #10-80 threaded needle shaft for fine adjustment; or recessed slotted needle

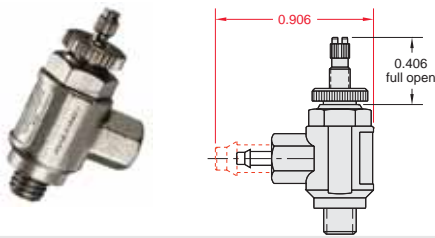


## #10-32 Valves, Knurled Knob



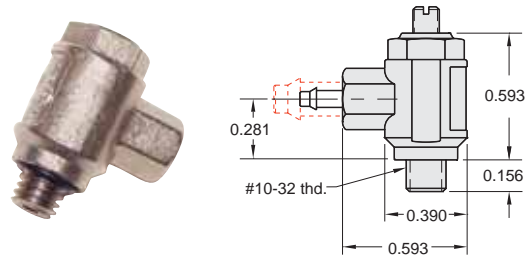
Part No.	Description
MFC-3AK	..Meter Out Control Valve, #10-32 Female Side Port
MFC-3AK1	..Meter Out Control Valve, 1/16" Barb Side Port
MFC-3AK2	..Meter Out Control Valve, 1/8" Barb Side Port
MFC-3BK	..Meter In Control Valve, #10-32 Female Side Port
MFC-3BK1	..Meter In Control Valve, 1/16" Barb Side Port
MFC-3BK2	..Meter In Control Valve, 1/8" Barb Side Port

## #10-32 Valves, Screwdriver Slot



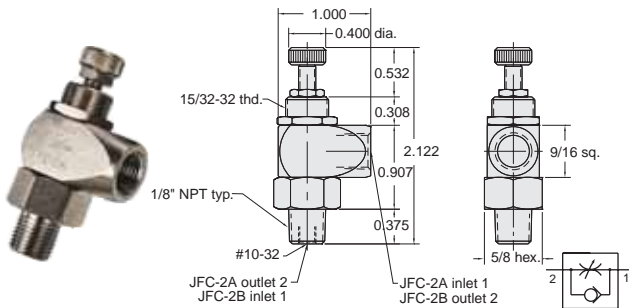
Part No.	Description
MFC-3A	..Meter Out Control Valve, #10-32 Female Side Port
MFC-3A1	..Meter Out Control Valve, 1/16" Barb Side Port
MFC-3A2	..Meter Out Control Valve, 1/8" Barb Side Port
MFC-3B	..Meter In Control Valve, #10-32 Female Side Port
MFC-3B1	..Meter In Control Valve, 1/16" Barb Side Port
MFC-3B2	..Meter In Control Valve, 1/8" Barb Side Port

## #10-32 Valves, Recessed Needle



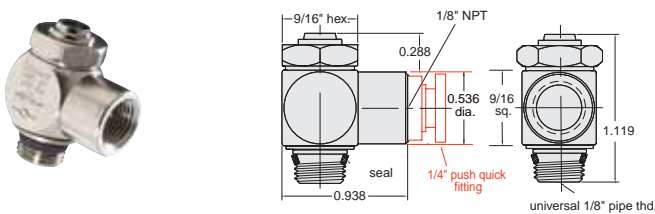
Part No.	Description
MFC-3AR	..Meter Out Control Valve, #10-32 Female Side Port
MFC-3AR1	..Meter Out Control Valve, 1/16" Barb Side Port
MFC-3AR2	..Meter Out Control Valve, 1/8" Barb Side Port
MFC-3BR	..Meter In Control Valve, #10-32 Female Side Port
MFC-3BR1	..Meter In Control Valve, 1/16" Barb Side Port
MFC-3BR2	..Meter In Control Valve, 1/8" Barb Side Port

## 1/8" NPT Control Valves, Knurled Knob



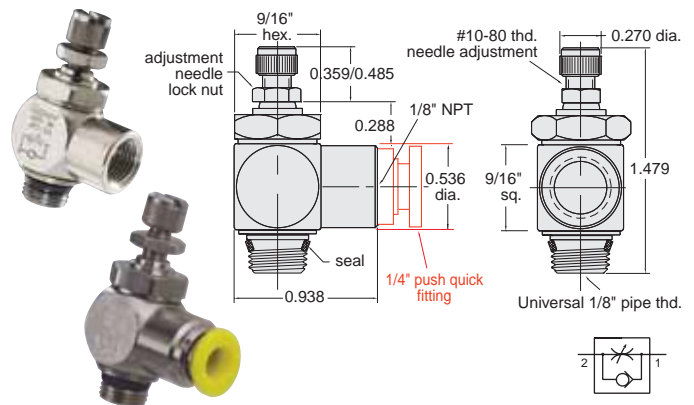
Part No.	Description
JFC-2A	..Meter Out Control Valve, 1/8" NPT
JFC-2B	..Meter In Control Valve, 1/8" NPT

## 1/8" NPT Valves, Recessed Needle



Part No.	Description
JFC-3AR	..Meter Out Control Valve, 1/8" NPT
JFC-3BR	..Meter In Control Valve, 1/8" NPT
JFC-3AP08	..Meter Out Control Valve, 1/4" Push-Quick Fitting
JFC-3BP08	..Meter In Control Valve, 1/4" Push-Quick Fitting

## 1/8" NPT Valves, Knurled Knob



Part No.	Description
JFC-3A	..Meter Out Control Valve, 1/8" NPT
JFC-3B	..Meter In Control Valve, 1/8" NPT
JFC-3AP08	..Meter Out Control Valve, 1/4" Push-Quick Fitting
JFC-3BP08	..Meter In Control Valve, 1/4" Push-Quick Fitting



# FLOW CONTROL VALVES



These combination needle and check valve flow controls are typically used to control air flow from air cylinders, thereby controlling the speed at which

**Input Pressure:** 150 psig max.

**Air Flow:** JFC-4 - 45 SCFM @ 100 psig adjustable  
JFC-5 - 60 SCFM @ 100 psig adjustable

**Mounting:** Directly into cylinder. Panel or inline.

**Ports:** Rotating input port allows 360° positioning 1/8" NPT

**Adjustment:** Recessed slotted needle or knurled knob

the piston strokes, either while extending or retracting, depending on their location in the circuit.

J-Series Flow Control Valves allow free flow in one direction. In the opposite direction the flow is metered by the needle valve.

Models listed in the chart have either a 1/4" NPT (JFC-4) or 3/8" NPT (JFC-5) male threaded outlets, recessed screwdriver slot (R) or knurled knob (K) flow adjustment needles and female NPT or push-to-connect tubing (Push-Quick) inlets. The P08 models features a 1/4" Push-Quick fitting, and the P12 versions have a 3/8" Push-Quick fitting.

**Medium:** Air, Water or Oil

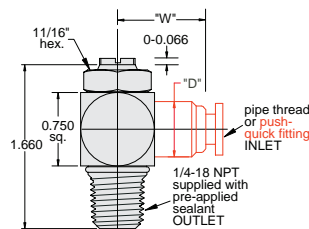
**Material:** Electroless nickel plated brass needle and stem, anodized aluminum body, Buna-N seals

Part #	"D"	"W"
JFC-4K & JFC-4R	0.710"	0.890"
JFC-4K-P08 & JFC-4R-P08	0.562"	0.890"
JFC-4K-P12 & JFC-4R-P12	0.710"	1.062"
JFC-5K & JFC-5R	0.827"	1.125"
JFC-5K-P12 & JFC-5R-P12	0.750"	1.124"

## 1/4" NPT Valves, Recessed Needle



(JFC-4R shown)

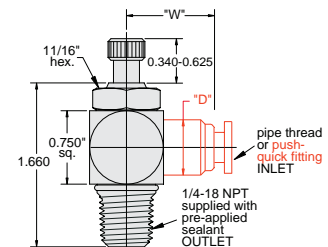


Part No.	Description
JFC-4R . . . .	.Meter Out Control Valve, 1/4" NPT
JFC-4R-P08 . . . .	.Meter Out Control Valve, 1/4" Push-Quick Fitting
JFC-4R-P12 . . . .	.Meter Out Control Valve, 3/8" Push-Quick Fitting

## 1/4" NPT Valves, Adjusting Knob



(JFC-4K shown)

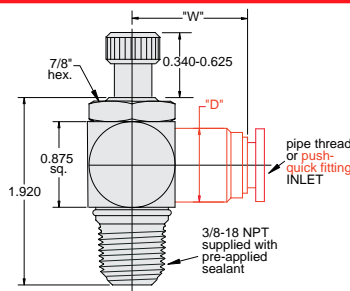


Part No.	Description
JFC-4K . . . .	.Meter Out Control Valve, 1/4" NPT
JFC-4K-P08 . . . .	.Meter Out Control Valve, 1/4" Push-Quick Fitting
JFC-4K-P12 . . . .	.Meter Out Control Valve, 3/8" Push-Quick Fitting

## 3/8" NPT Valves, Adjusting Knob



(JFC-5K-P12 shown)

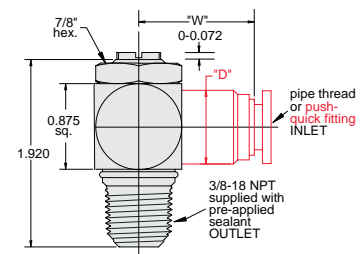


Part No.	Description
JFC-5K . . . .	.Meter Out Control Valve, 3/8" NPT
JFC-5K-P12 . . . .	.Meter Out Control Valve, 3/8" Push-Quick Fitting

## 3/8" NPT Valves, Recessed Needle



(JFC-5R-P12 shown)

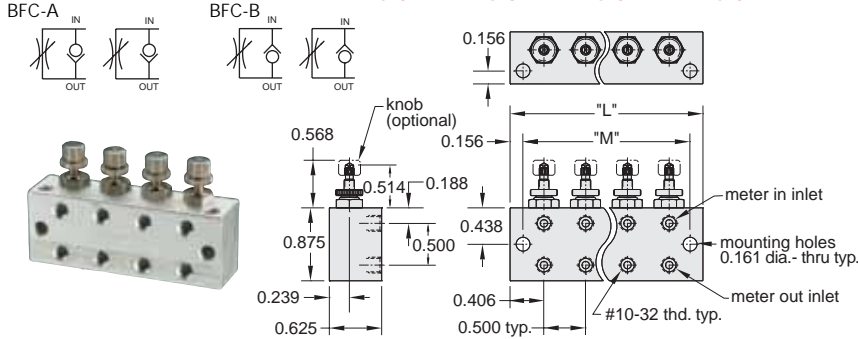


Part No.	Description
JFC-5R . . . .	.Meter Out Control Valve, 3/8" NPT
JFC-5R-P12 . . . .	.Meter Out Control Valve, 3/8" Push-Quick Fitting



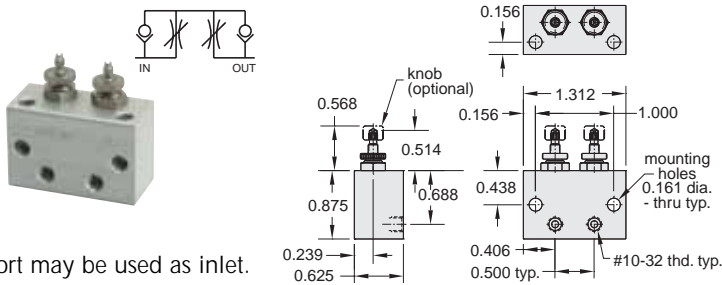
## Block Flow Controls

- BFC-2A    BFC-2B    BFC-2AK    BFC-2BK
- BFC-4A    BFC-4B    BFC-4AK    BFC-4BK
- BFC-6A    BFC-6B    BFC-6AK    BFC-6BK
- BFC-8A    BFC-8B    BFC-8AK    BFC-8BK



## Block Flow Controls

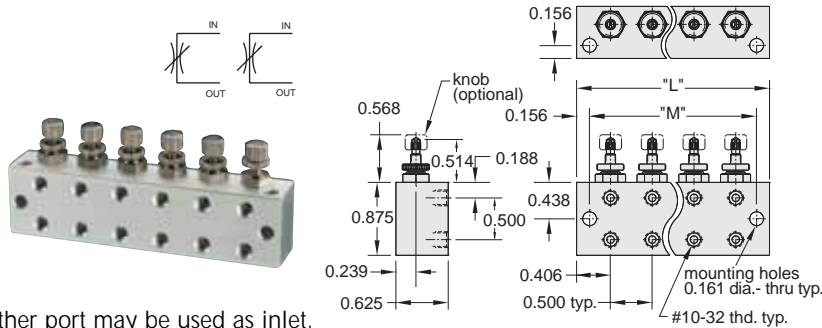
- BFC-2C    BFC-2CK
- (2) Valves common meter in and meter out.



Either port may be used as inlet.

## Block Needle Valves

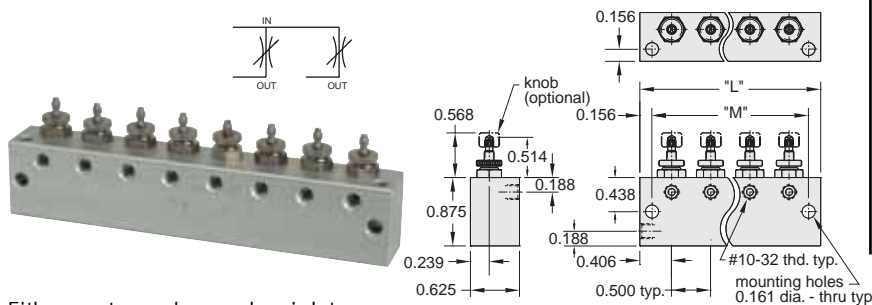
- BNV-2N    BNV-4N    BNV-6N    BNV-8N
- BNV-2NK    BNV-4NK    BNV-6NK    BNV-8NK



Either port may be used as inlet.

## Block Needle Manifolds

- BNM-2N    BNM-4N    BNM-6N    BNM-8N
- BNM-2NK    BNM-4NK    BNM-6NK    BNM-8NK



Either port may be used as inlet.

**Precision flow controls and needle valves available in blocks for rigid mounting.**

*Specification same as MFC-3*

Clippard's block flow control and needle valves have a variety of features that offer extra versatility for unique applications. These precision made valves offer high performance, low cost, reliability and ease of installation. Each valve is independent of the other (except the BFC-2C), sharing only a common body. This allows separate pressures and/or gases to be used while simplifying mounting. Each needle adjustment is smooth, exact, and includes a locking ring to prevent tampering. The valve body is machined and anodized aluminum; the compound angle needle stems are machined from 303 stainless steel; the valve sleeve is electroless nickel plated brass; and the seals are Buna-N rubber. Block flow controls and needle valves are ideal for controlling double acting cylinders.

FC - Flow Control  
NV - Needle Valve  
NM - Needle Manifold



Block

Number of stations

2 - 2 stations

4 - 4 stations

6 - 6 stations

8 - 8 stations

A - meter out flow

B - meter in flow

C - 2 valves common

meter in and meter out

N - needle valve

Adjustment type

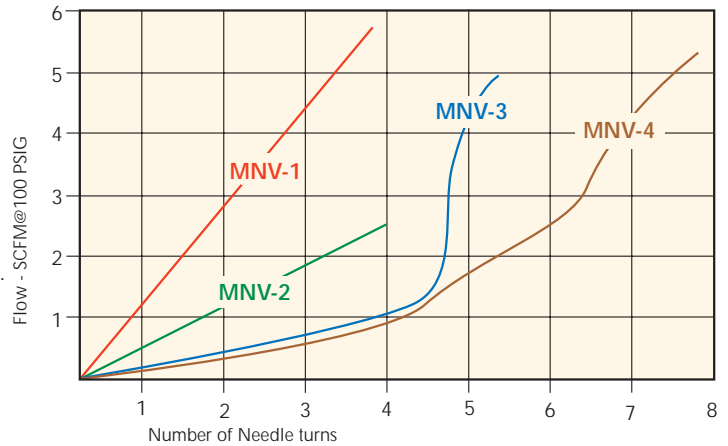
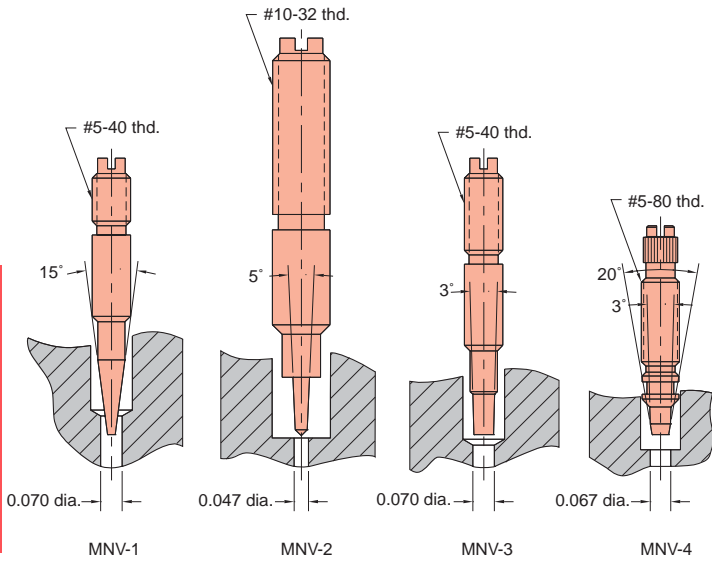
Blank - screwdriver slot

K - adjustment knob

Number of Stations	"X"	"L"	"M"
2		1.312	1.000
4		2.312	2.000
6		3.312	3.000
8		4.312	4.000

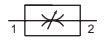


# NEEDLE VALVES



Adjustable control needle valves restrict flow in both directions. There are (4) four models offered by Clippard, all with #10-32 ports, but with various needle configurations to provide coarse or fine flow adjustment. The diagram of needle shapes and the chart on this page show the difference between these models.

**Medium:** Air, Water or Oil

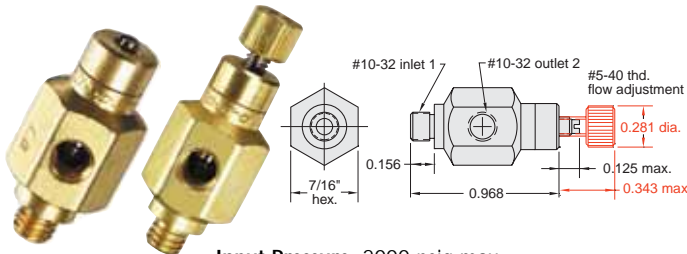


**Materials:** Brass body; stainless steel needle; Buna-N seal

**Mounting:** Direct, inline or #15/32-32 thread nut and lockwashers furnished as illustrated

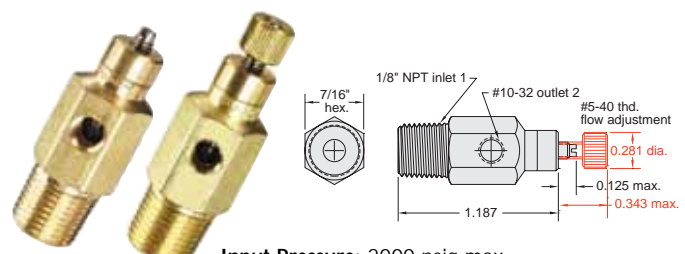
**Adjustment:** Knurled knob (clockwise adjustment provides less flow), or Screwdriver slot (clockwise adjustment provides less flow).

## 15° Needle Valves, #10-32



**Input Pressure:** 2000 psig max.  
**Air Flow:** 3 SCFM @ 50 psig; 6 SCFM @ 100 psig

## 15° Needle Valves, 1/8" NPT

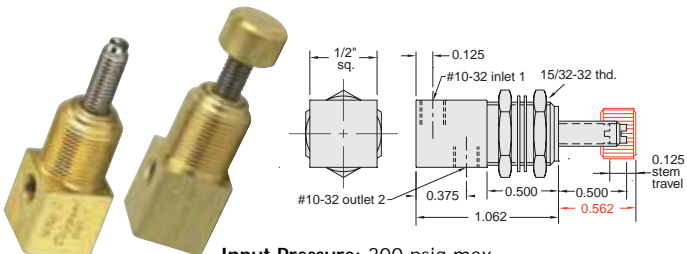


**Input Pressure:** 2000 psig max.  
**Air Flow:** 3 SCFM @ 50 psig; 6 SCFM @ 100 psig

Part No.	Description
MNV-1	Needle Valve, #10-32, Screwdriver Slot
MNV-1K	Needle Valve, #10-32, Knurled Knob

Part No.	Description
MNV-1P	Needle Valve, 1/8" NPT, Screwdriver Slot
MNV-1KP	Needle Valve, 1/8" NPT, Knurled Knob

## 5° Needle Valves, #10-32



**Input Pressure:** 300 psig max.  
**Air Flow:** 1 SCFM @ 50 psig; 2.5 SCFM @ 100 psig

Part No.	Description
MNV-2	Needle Valve, #10-32, Screwdriver Slot
MNV-2K	Needle Valve, #10-32, Knurled Knob

## 3° Needle Valves, #10-32



**Input Pressure:** 2000 psig/40 bar max.  
**Air Flow:** 2.5 SCFM @ 50 psig; 5 SCFM @ 100 psig; 120 l/min @ 6 bar

Part No.	Description
MNV-3	Needle Valve, #10-32, Screwdriver Slot
MNV-3-M5	Needle Valve, M5, Screwdriver Slot
MNV-3K	Needle Valve, #10-32, Knurled Knob
MNV-3K-M5	Needle Valve, M5, Knurled Knob