Control Valves & Valve Accessories

Features

The highly reliable "O" Series valve is available in 2-Way or 3-Way normally closed. Ideal for limited space applications (OAL not more than 2.43") this miniature valve features seven swivel input options- virtually eliminating the need for additional fittings!

- Miniature size
- Poppet design contributes to long product life
- Seven input options
- Swivel input port to accommodate critical alignment
- Closed crossover (NC Only)
- Non-threaded exhaust port

Closed Cross-Over

The normally closed "O" Series features a stem and poppet that work in conjunction with one another. The poppet seals the exhaust port before it opens to flow (normally closed). There is no transitional state from one function to the next providing the user precise control between positions.

Technical Data

Performance Data

Temperature Range	Operating Pressure	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
			50 PSI	125 PSI		
-20° to 160° F	0 to 125 psi	.24	8.2	17.3	.02	.06

C_v per ANSI / (NFPA) T3.21.3

Actuation Force

Actuator Style	2-Way Valve		3-Way Valve	
	50 PSI	125 PSI	50 PSI	125 PSI
Nylon Toggle	4 oz	6 oz	4 oz	6 oz
Push Button	3 lbs	5 1/2 lbs	3 lbs	5½ lbs

Actuation force for NC **ONLY**

Materials

Aluminum/ Anodize or Brass/ Electroless Nickel, Acetal, Stainless Steel, Nylon, Buna-N (optional seals available- contact factory)

"O" Series Cross Section

3-Way Normally Closed

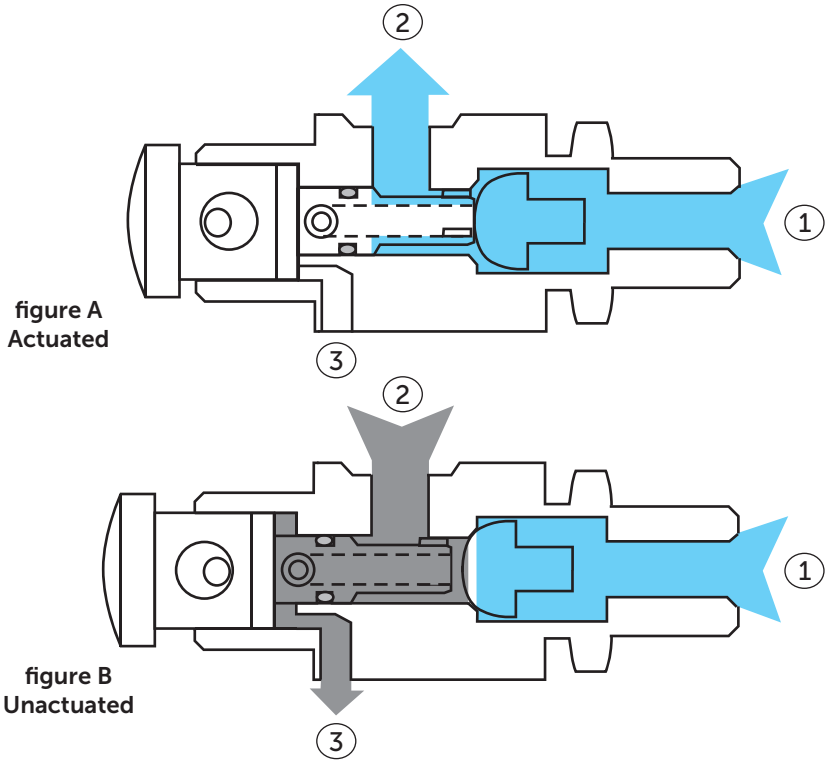
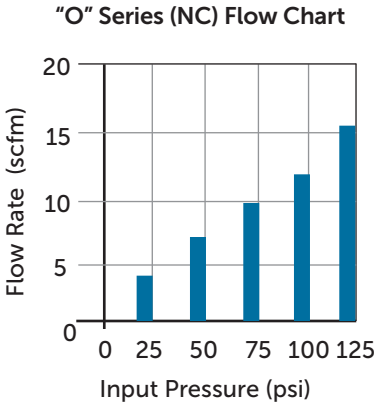


figure A
Actuated

figure B
Unactuated



Function

When a 3-Way normally closed valve is actuated (figure A) the stem unseats the poppet allowing flow through port 1 around the poppet and stem and out port 2.

In the unactuated position (figure B) the poppet is seated. When flow enters from port 2 it travels through the hollow stem and exhausts to atmosphere through port 3. The poppet design provides a large durable surface that can withstand millions of cycles.

The normally open "O" Series features a stem design with standard Buna-N O-rings.

Swivel input is NOT to be used as a rotary union.

Port Options

Definition	Options
Port 1 Swivel Input	1/8 NPT / 10-32 (F) 10-32 (F) Elbow 10-32 (F) Tee 1/8 NPT (F) 170 Barb* 1/4 Push-in 5/32 Push-in
Port 2 Output	10-32 (F)
Port 3 Exhaust	non-threaded, exhausts to atmosphere

*170 barb- recommended for use with .170 ID PUR or .170 ID PE

Mounting Method

Panel	Surface
Nominal mounting hole dimension 31/64"	MB-1 or MB-1F Mounting Bracket
(2) nuts and (1) lockwasher provided	

Product Information

- To order standard product refer to Product Information listing
- Optional seals available - contact factory
- Metal push button available - use an “M” as the second character to indicate metal
- Nylon toggles and push buttons are available in seven colors with black as standard. To order colored actuator specify the color, by code, as a “-code#” suffix following the part number

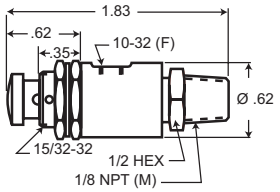
2-Way Normally Closed

Actuator	Part Number	Input
Push Button	AO-20-1	1/8 NPT /10-32 (F)
	AO-20-2	10-32 (F) Elbow
	AO-20-3	10-32 (F) Tee
	AO-20-4	1/8 NPT (F)
	AO-20-5	170 Barb
	AO-20-6	1/4 Push-in
Detented Toggle	HO-20-1	1/8 NPT /10-32 (F)
	HO-20-2	10-32 (F) Elbow
	HO-20-3	10-32 (F) Tee
	HO-20-4	1/8 NPT (F)
	HO-20-5	170 Barb
	HO-20-6	1/4 Push-in
	HO-20-7	5/32 Push-in
Momentary Toggle	FO-20-1	1/8 NPT /10-32 (F)
	FO-20-2	10-32 (F) Elbow

3-Way Normally Closed

Actuator	Part Number	Input
Push Button	AO-30-1	1/8 NPT /10-32 (F)
	AO-30-2	10-32 (F) Elbow
	AO-30-3	10-32 (F) Tee
	AO-30-4	1/8 NPT (F)
	AO-30-5	170 Barb
	AO-30-6	1/4 Push-in
	AO-30-7	5/32 Push-in
Detented Toggle	HO-30-1	1/8 NPT /10-32 (F)
	HO-30-2	10-32 (F) Elbow
	HO-30-3	10-32 (F) Tee
	HO-30-4	1/8 NPT (F)
	HO-30-5	170 Barb
	HO-30-6	1/4 Push-in
	HO-30-7	5/32 Push-in
Momentary Toggle	FO-30-1	1/8 NPT /10-32 (F)
	FO-30-2	10-32 (F) Elbow

Push Button Actuator



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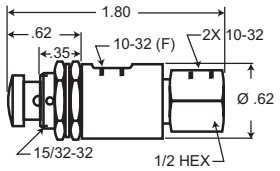

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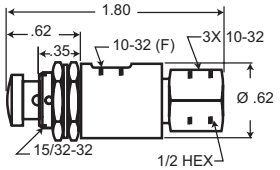

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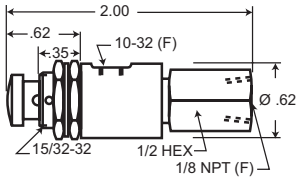

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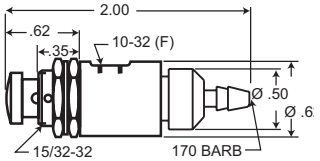

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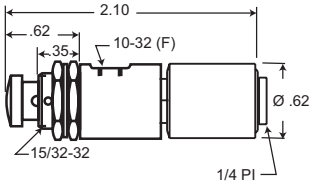

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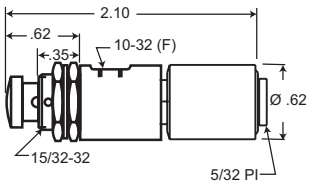
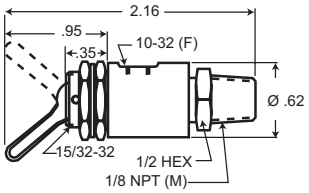


"-7" Input

Toggle Actuator



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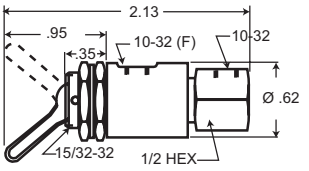

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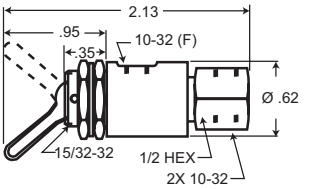

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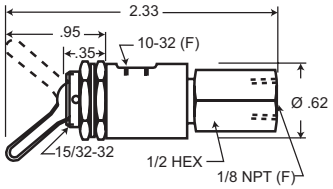

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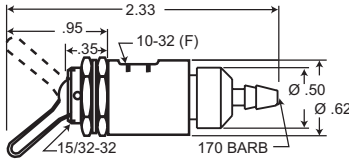

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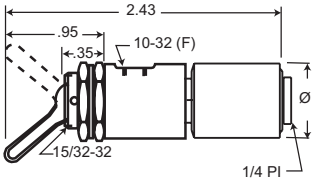

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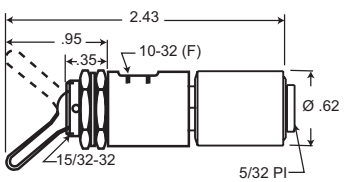


"-7" Input

When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Features

IMI Bimba's "3" Series are 3-Way normally closed, fully ported

- Fully ported
- 3-Way normally closed
- Poppet design contributes to long product life
- Seven input options
- Closed crossover
- Swivel Input Port

Closed Cross-Over

The internal design of the "3" Series features a stem and poppet that work in conjunction with one another. The poppet seals the exhaust port before it opens to flow. There is no transitional state from one function to the next providing the operator precise control between positions.

The addition of the threaded exhaust port makes it possible to direct and capture the exhaust flow in liquid, clean-room or lubricated air applications.

Mufflers can also be threaded in the exhaust port for noise control.

Technical Data

Performance Data

Temperature Range	Operating Pressure	Flow Path	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
				50 PSI	125 PSI		
-20° to 160° F	0 to 125 psi	1-2	.23	7.2	15.4	.02	.04
		3-4	.09	3.7	8.0	.07	n/a

C_v per ANSI / (NFPA) T3.21.3

Actuation Force

Actuator Style	3-Way Valve	
	50 PSI	125 PSI
Nylon Toggle	8 oz	14 oz
Push Button	3½ lbs	6 lbs

Actuation force for NC **ONLY**

Materials

Aluminum/ Anodize or Brass/ Electroless Nickel, Acetal, Stainless Steel, Nylon, Buna-N (optional seals available -contact factory)

"3" Series Cross Section

3-Way Normally Closed

figure A
Actuated

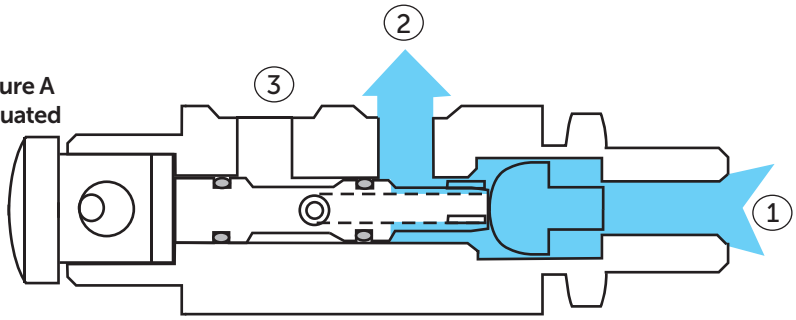
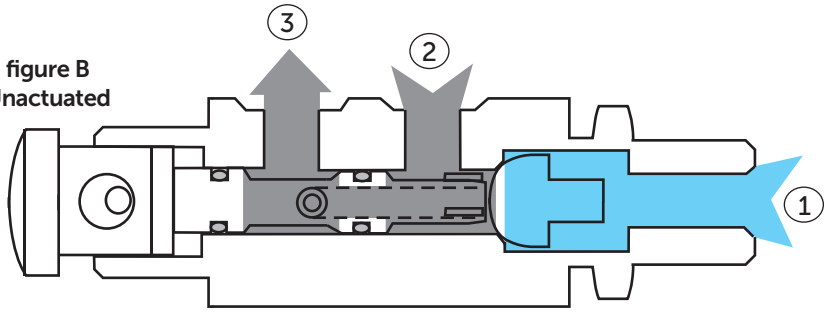
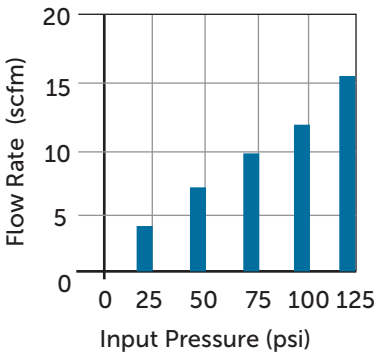


figure B
Unactuated



"3" Series Flow Chart



Function

When a 3-Way normally closed valve is actuated (figure A) the stem unseats the poppet allowing flow through port 1 around the poppet and stem and out port 2.

In the unactuated position (figure B) the poppet is seated. When flow enters from port 2 it travels through the hollow stem and exhausts to atmosphere through port 3. The poppet design provides a large durable surface that can withstand millions of cycles.

This versatile valve can be plumbed as a selector with pressure in port 1 and vacuum plumbed in port 3.

Pick-and-place applications use selector valves to pick up an object, often with a suction cup at port 2, and release the object by breaking the vacuum pressure at port 1.

The "3" Series cannot be plumbed as normally open, we recommend using our "300" Series 10-32 fully ported

Swivel input is NOT to be used as a rotary union.

Port Options

Definition	Options
Port 1 Swivel Input	1/8 NPT / 10-32 (F) 10-32 (F) Elbow 10-32 (F) Tee 1/8 NPT (F) 170 Barb* 1/4 Push-in 5/32 Push-in
Port 2 Output	10-32 (F)
Port 3 Exhaust	non-threaded, exhausts to atmosphere

*170 barb- recommended for use with .170 ID PUR or .170 ID PE

Mounting Method

Panel	Surface
Nominal mounting hole dimension 31/64"	MB-1 or MB-1F Mounting Bracket
(2) nuts and (1) lockwasher provided	

The input port swivels to accommodate critical alignment

Product Information

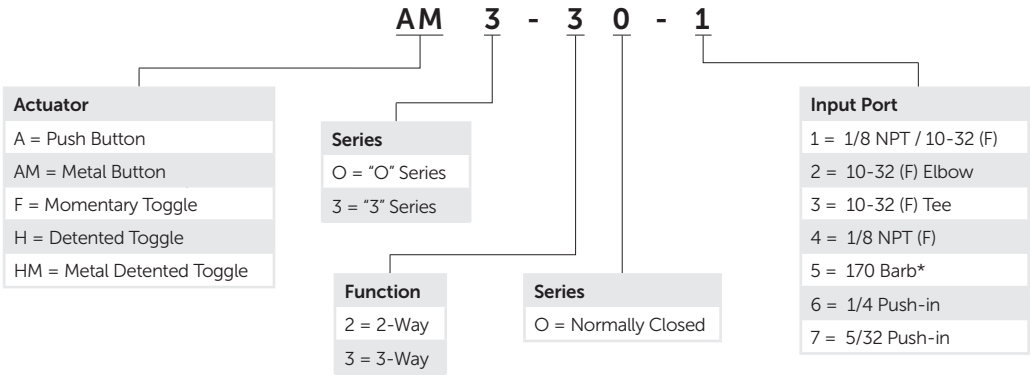
- To order standard product refer to Product Information listing
- Metal push button available- use “AM” as the prefix to indicate metal
- Optional seals available - contact factory
- Nylon toggles and push buttons are available in seven colors with black as standard. To order colored actuator specify the color, by code, as a “-code#” suffix following the part number

Example: Metal push button, “3” Series, 3-Way, Normally Closed, 1/8 NPT/ 10-32 (F) Input Port

3-Way Normally Closed

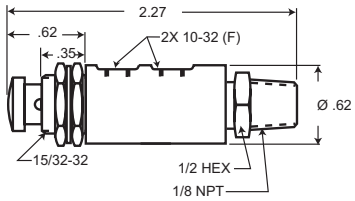
Actuator	Part Number	Input
Push Button	A3-30-1	1/8 NPT/ 10-32 (F)
	A3-30-2	10-32 (F) Elbow
	A3-30-3	10-32 (F) Tee
	A3-30-4	1/8 NPT (F)
Detented Toggle	H3-30-1	1/8 NPT/ 10-32 (F)
	H3-30-2	10-32 (F) Elbow
	H3-30-3	10-32 (F) Tee
	H3-30-4	1/8 NPT (F)

“O” Series & “3” Series



*170 barb- recommended for use with .170 ID PUR or .170 ID PE

Push Button Actuator



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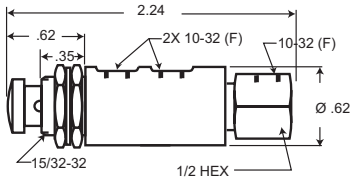

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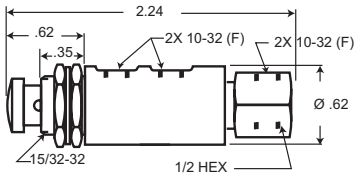

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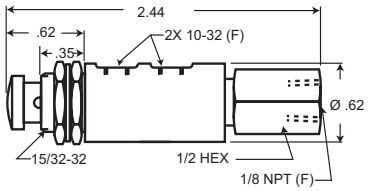

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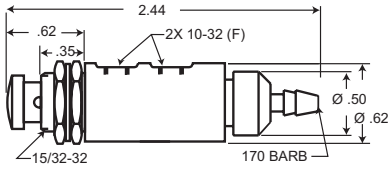

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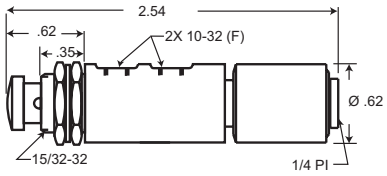

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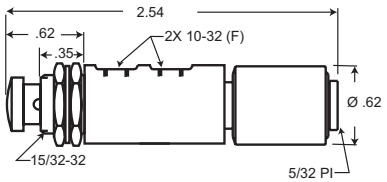
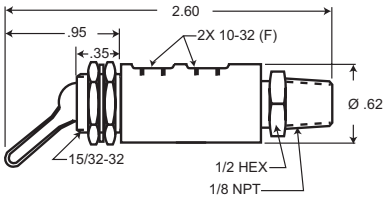


"-7" Input

Toggle Actuator



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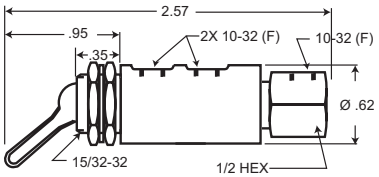

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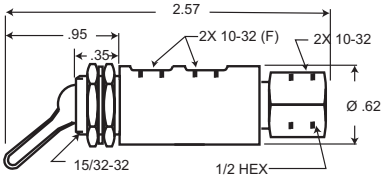

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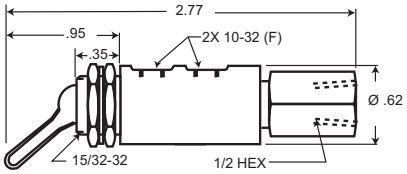

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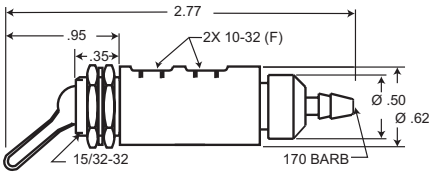

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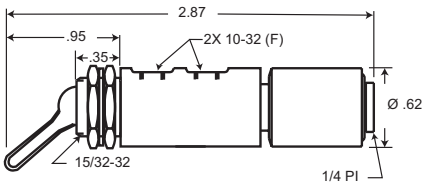

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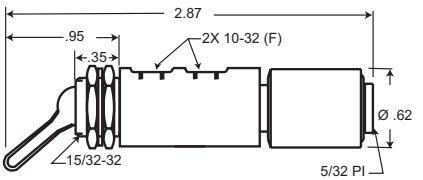


"-7" Input

When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Features

The “11” Series features 1/8 NPT female and 1/4 push-to-connect connections contributing to higher flow rates. Push-in connections are available on both the input and output ports for plumbing convenience.

- 158 possible configurations
- Four input options
- Swivel output port
- High flow
- Poppet design contributes to long product life
- Closed crossover (NC Only)

Closed Cross-Over

The normally closed “11” Series features a stem and poppet that work in conjunction with one another. The poppet seals the exhaust port before it opens to flow (normally closed). There is no transitional state from one function to the next providing the operator precise control between positions.

Technical Data

Performance Data

Temperature Range	Operating Pressure	Type	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
				50 PSI	125 PSI		
-20° to 160° F	0 to 125 psi	Normally Open	.23	8.6	19.0	.015	.035
		Normally Open	.29	10.2	222.1	.01	.05

C_v per ANSI / (NFPA) T3.21.3

Actuation Force

Actuator Style	Normally Open		Normally Closed	
	50 PSI	125 PSI	50 PSI	125 PSI
Nylon Toggle	8 oz	19 oz	8 oz	14 oz
Push Button	7½ lbs	11 lbs	3½ lbs	7 lbs

Actuation force for NC **ONLY**

Materials

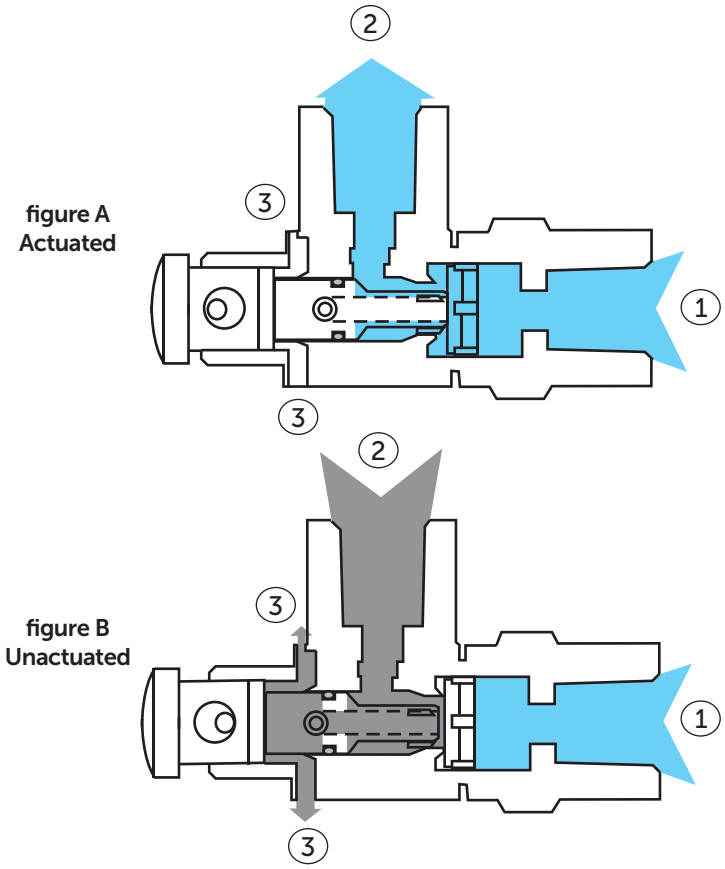
Aluminum/ Anodize, Brass/ Electroless Nickel, Stainless Steel, Nylon, Acetal Copolymer, Buna-N (optional seals available- contact factory)

"11" Series Cross Section

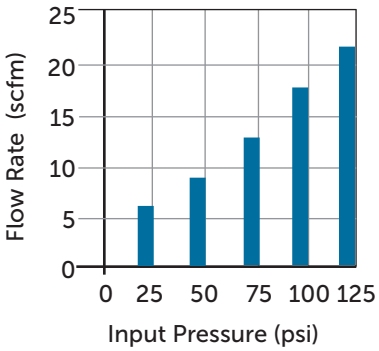
3-Way Normally Closed

figure A
Actuated

figure B
Unactuated



"11" Series Flow Chart



Function

When a 3-Way normally closed valve is actuated (figure A) the stem unseats the poppet allowing flow through port 1 around the poppet and stem and out port 2.

In the unactuated position (figure B) the poppet is seated. When flow enters from port 2 it travels through the hollow stem and exhausts to atmosphere through port 3. The specially designed poppet has a Buna-N sealing surface which can withstand millions of cycles.

Swivel input is NOT to be used as a rotary union.

Port Options

Definition	Options
Port 1 Input	1/8 NPT / 10-32 (F) 1/8 NPT (F) 1/4 Push-in 5/32 Push-in
Port 2 Swivel Output	1/8 NPT (F) 1/4 Push-in 5/32 Push-in
Port 3 Exhaust	non-threaded, exhausts to atmosphere

Mounting Method

Panel	Surface
Nominal mounting hole dimension 31/64"	MB-1 or MB-1F Mounting Bracket
(2) nuts and (1) lockwasher provided	

Product Information

The “11” Series specially designed poppet has a Buna-N sealing surface which can withstand millions of cycles

2-Way Normally Closed

Actuator	Part Number	Input	Output
Push Button	A11-20-14	1/8 NPT	1/8 NPT (F)
	A11-20-16		1/4 Push-in
	A11-20-17		5/32 Push-in
	A11-20-44	1/8 NPT (F)	1/8 NPT (F)
	A11-20-46		1/4 Push-in
	A11-20-47		5/32 Push-in
	A11-20-64	1/4 Push-in	1/8 NPT (F)
	A11-20-66		1/4 Push-in
	A11-20-67		5/32 Push-in
	A11-20-74	5/32 Push-in	1/8 NPT (F)
	A11-20-76		1/4 Push-in
	A11-20-77		5/32 Push-in
Detented Toggle	H11-20-14	1/8 NPT	1/8 NPT (F)
	H11-20-16		1/4 Push-in
	H11-20-17		5/32 Push-in
	H11-20-44	1/8 NPT (F)	1/8 NPT (F)
	H11-20-46		1/4 Push-in
	H11-20-47		5/32 Push-in
	H11-20-64	1/4 Push-in	1/8 NPT (F)
	H11-20-66		1/4 Push-in
	H11-20-67		5/32 Push-in
	H11-20-74	5/32 Push-in	1/8 NPT (F)
	H11-20-76		1/4 Push-in
	H11-20-77		5/32 Push-in
Momentary Toggle	F11-20-14	1/8 NPT	1/8 NPT (F)
	F11-20-16		1/4 Push-in
	F11-20-17		5/32 Push-in
	F11-20-44	1/8 NPT (F)	1/8 NPT (F)
	F11-20-46		1/4 Push-in
	F11-20-47		5/32 Push-in
	F11-20-64	1/4 Push-in	1/8 NPT (F)
	F11-20-66		1/4 Push-in
	F11-20-67		5/32 Push-in
	F11-20-74	5/32 Push-in	1/8 NPT (F)
	F11-20-76		1/4 Push-in
	F11-20-77		5/32 Push-in

3-Way Normally Closed

Actuator	Part Number	Input	Output
Push Button	A11-30-14	1/8 NPT	1/8 NPT (F)
	A11-30-16		1/4 Push-in
	A11-30-17		5/32 Push-in
	A11-30-44	1/8 NPT (F)	1/8 NPT (F)
	A11-30-46		1/4 Push-in
	A11-30-47		5/32 Push-in
	A11-30-64	1/4 Push-in	1/8 NPT (F)
	A11-30-66		1/4 Push-in
	A11-30-67		5/32 Push-in
	A11-30-74	5/32 Push-in	1/8 NPT (F)
	A11-30-76		1/4 Push-in
	A11-30-77		5/32 Push-in
Detented Toggle	H11-30-14	1/8 NPT	1/8 NPT (F)
	H11-30-16		1/4 Push-in
	H11-30-17		5/32 Push-in
	H11-30-44	1/8 NPT (F)	1/8 NPT (F)
	H11-30-46		1/4 Push-in
	H11-30-47		5/32 Push-in
	H11-30-64	1/4 Push-in	1/8 NPT (F)
	H11-30-66		1/4 Push-in
	H11-30-67		5/32 Push-in
	H11-30-74	5/32 Push-in	1/8 NPT (F)
	H11-30-76		1/4 Push-in
	H11-30-77		5/32 Push-in
Momentary Toggle	F11-30-14	1/8 NPT	1/8 NPT (F)
	F11-30-16		1/4 Push-in
	F11-30-17		5/32 Push-in
	F11-30-44	1/8 NPT (F)	1/8 NPT (F)
	F11-30-46		1/4 Push-in
	F11-30-47		5/32 Push-in
	F11-30-64	1/4 Push-in	1/8 NPT (F)
	F11-30-66		1/4 Push-in
	F11-30-67		5/32 Push-in
	F11-30-74	5/32 Push-in	1/8 NPT (F)
	F11-30-76		1/4 Push-in
	F11-30-77		5/32 Push-in

Refer to Product Number Diagram

Product Information

The standard “11” Series valve output port swivels to accommodate critical alignment.

System 11 is a method of consolidating 2 to 10 components with a common pressure source.

This custom product is shown with “11” Series valves.

- To order standard product refer to Product Information listing
- To order metal push button- use “AM” as the prefix to indicate metal
- Optional seals available- contact factory
- Nylon toggles and push buttons are available in seven colors with black as standard. To order colored actuator specify the color, by code, as a “-code#” suffix following the part number

Example: Nylon push button, “11” Series, 2-Way, Normally Closed, 1/8 NPT /10-32 (F) Input Port, 1/8 (F) Output

“11” Series

A 11 - 2 0 - 1 4

Actuator
A = Push Button
AM = Metal Button
F = Momentary Toggle
H = Detented Toggle
HM = Metal Detented Toggle

Series
11 = “11” Series

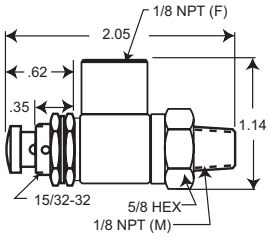
Function
2 = 2-Way
3 = 3-Way

Position One
O = Normally Closed

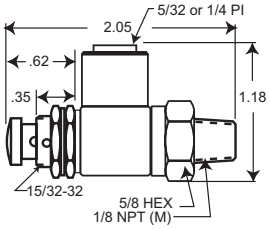
Input Port
1 = 1/8 NPT / 10-32 (F)
2 = 10-32 (F) Elbow
3 = 10-32 (F) Tee
4 = 1/8 NPT (F)
5 = 170 Barb*
6 = 1/4 Push-in
7 = 5/32 Push-in

Output Port
4 = 1/8 NPT (F)
6 = 1/4 Push-in
7 = 5/32 Push-in

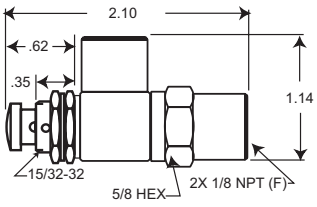
Push Button Actuator



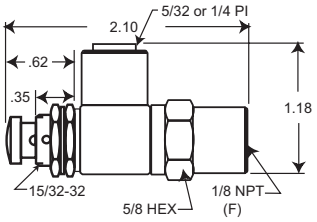
"-14" Porting



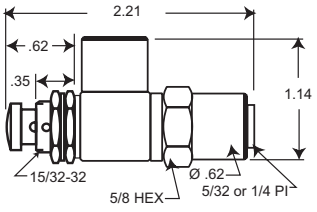
"-16" Porting
"-17" Porting



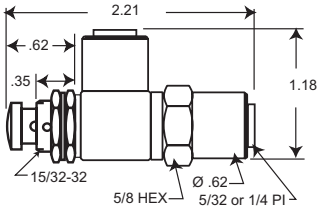
"-44" Porting



"-46" Porting
"-47" Porting

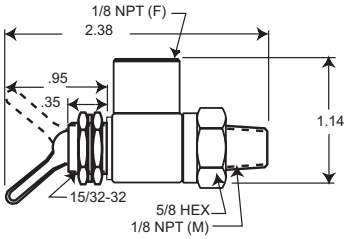


"-64" Porting
"-74" Porting

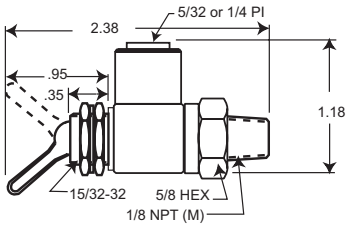


"-66" Porting
"-67" Porting
"-76" Porting
"-77" Porting

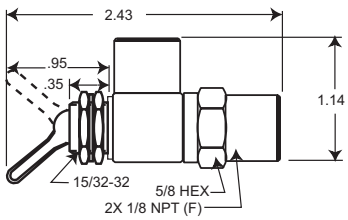
Toggle Actuator



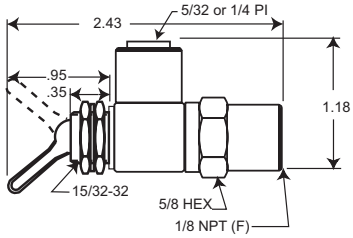
"-14" Porting



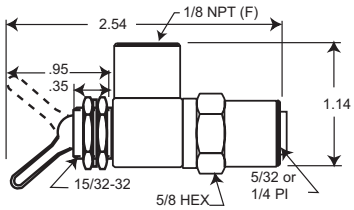
"-16" Porting
"-17" Porting



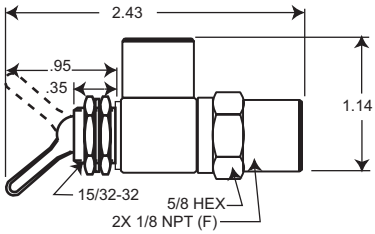
"-44" Porting



"-46" Porting
"-47" Porting



"-64" Porting
"-74" Porting



"-66" Porting
"-67" Porting
"-76" Porting
"-77" Porting

When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Features

The “300” Series valves feature miniature size and a single stem design, and is available with five porting configurations offering the following:

- 10-32 (F) Input/Output: Ideal for use as a pilot actuating device and for basic on/off functions
- Rear Ported: Streamlined profile with side-by-side porting for use in space constrained applications
- 1/8 NPT Input: Ideal for direct mounting in a manifold or other machine member
- Cartridge: Ideal for use in manifold systems and custom applications where space is limited
- 10-32 (F) Fully ported: Threaded exhaust port can be used in applications to direct and capture exhaust flow- see Plumbing Options for Fully Ported Valves, page 32, for alternative plumbing options.

- Single stem design
- Compact size
- Four input options
- Numerous porting configurations
- Fully ported design offers plumbing versatility

Technical Data

Performance Data

Temperature Range	Operating Pressure	Product	C_v		Flow Rate (scfm) Port 1-2		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
			Port 1-2	Port 2-3	50 PSI	125 PSI		
-20° to 160° F	26” Hg to 125 psi	“300” Series 10-32 (F) Input/output	.20	n/a	7.2	15.5	.02	.04
		“300” Series 10-32 (F) Fully ported	.27	.25	9.0	20.0	.014	.035
		“300” Series 1/8 NPT Input	.24	n/a	8.3	17.8	.014	.039

2-Way valves ideal for use in liquid applications compatible with materials of construction

C_v per ANSI / (NFPA) T3.21.3

Actuation Force

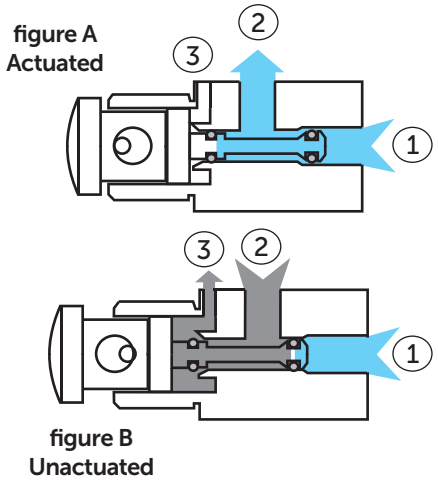
Actuator Style	“300” Series 10-32 Input		“300” Series Fully Ported 10-32 (F)	
	50 PSI	125 PSI	50 PSI	125 PSI
Toggle	6 oz	11 oz	6 oz	11 oz
Ball	29 oz	51 oz	29 oz	51 oz
Push Button	29 oz	51 oz	29 oz	51 oz
Integral Air Pilot	30 psi	40 psi	30 psi	40 psi

Materials

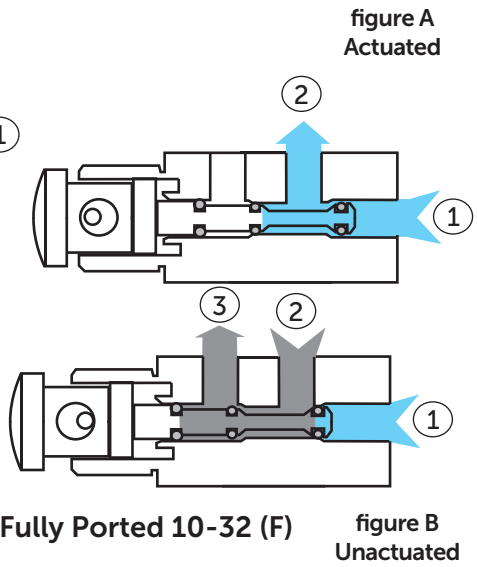
Brass/ Electroless Nickel, Aluminum/ Anodize, Stainless Steel, Buna-N (optional seals available- contact factory)

“300” Series Cross Section

3-Way Normally Closed

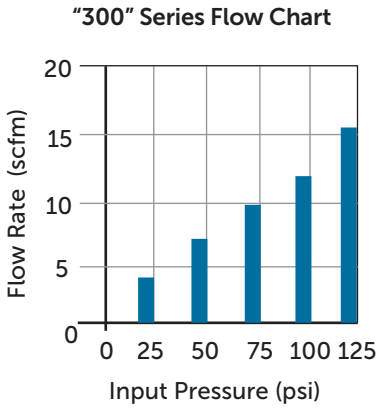


10-32 (F) Input/Output



Fully Ported 10-32 (F)

figure B
Unactuated



Function

In the actuated position (figure A) air flows through port 1 travels around the lower O-ring and flows out port 2- the upper O-ring seals the passage preventing exhaust flow out of the valve.

In the unactuated position (figure B) the lower O-ring seals the flow at port 1, allowing flow to enter port 2 travel around the upper seal and exhaust to atmosphere through port 3.

The 10-32 (F) fully ported valve allows the capture and removal of exhaust flow.

Port Options

Valve	Input 1	Input 2	Exhaust
Barbed	062 Barb	062 Barb	non-threaded
10-32 (F) Input/Output	10-32 (F)	10-32 (F)	non-threaded
Rear Ported	10-32 (F)	10-32 (F)	non-threaded
1/8 NPT Input	1/8 NPT	10-32 (F)	non-threaded
*Cartridge	non-threaded	non-threaded	non-threaded
10-32 (F) Fully Ported	10-32 (F)	10-32 (F)	10-32 (F)

Mounting Method

Panel	Surface
Nominal mounting hole dimension 31/64”	MB-1 or MB-1F Mounting Bracket
(2) nuts and (1) lockwasher provided	

Product Information

Stainless Steel 10-32 Fully Ported valve with M5 threads available - contact factory

“300” Series Standard 10-32 (F)

Type	Part Number	Operator
2-Way Normally Closed	C030201	Toggle Detented
	C030203	Toggle Momentary
	C030205	Nylon Button
	C030207	Nylon Ball
	C030209	062 Barb Integral Air Pilot
	C030221	Metal Toggle Detented
	C030223	Metal Toggle Momentary
	C030225	Metal Button
	C030227	Stainless Steel Ball
3-Way Normally Closed	C030101	Toggle Detented
	C030103	Toggle Momentary
	C030105	Nylon Button
	C030107	Nylon Ball
	C030109	062 Barb Integral Air Pilot
	C030121	Metal Toggle Detented
	C030123	Metal Toggle Momentary
	C030125	Metal Button
	C030127	Stainless Steel Ball

“300” Series Standard 10-32 (F)

Type	Part Number	Operator
2-Way Normally Closed	C030227	Stainless Steel Ball
3-Way Normally Closed	C030127	Stainless Steel Ball

Product Information

"300" Series 10-32 Fully Ported

Type	Part Number	Operator
3-Way Normally Closed	C030501	Toggle Detented
	C030503	Toggle Momentary
	C030505	Nylon Button
	C030507	Nylon Ball
	C030509	062 Barb Integral Air Pilot
	C030510	Pin
	C030521	Metal Toggle Detented
	C030523	Metal Toggle Momentary
	C030525	Metal Button
	C030527	Stainless Steel Ball

"300" Series 1/8 NPT Input

Type	Part Number	Operator
2-Way Normally Closed	C030701	Toggle Detented
	C030703	Toggle Momentary
	C030705	Nylon Button
	C030707	Nylon Ball
	C030721	Metal Toggle Detented
	C030723	Metal Toggle Momentary
	C030725	Metal Button
	C030727	Stainless Steel Ball
3-Way Normally Closed	C030601	Toggle Detented
	C030603	Toggle Momentary
	C030605	Nylon Button
	C030607	Nylon Ball
	C030621	Metal Toggle Detented
	C030623	Metal Toggle Momentary
	C030625	Metal Button
	C030627	Stainless Steel Ball

"300" Series Standard Stainless Steel 10-32 (F)

Type	Part Number	Operator
2-Way Normally Closed	C032101	Toggle Detented
	C032103	Toggle Momentary
	C032105	Nylon Button
	C032107	Nylon Ball
	C032121	Metal Toggle Detented
	C032123	Metal Toggle Momentary
	C032125	Metal Button
	C032127	Stainless Steel Ball
3-Way Normally Closed	C032201	Toggle Detented
	C032203	Toggle Momentary
	C032205	Nylon Button
	C032207	Nylon Ball
	C032221	Metal Toggle Detented
	C032223	Metal Toggle Momentary
	C032225	Metal Button
	C032227	Stainless Steel Ball

"300" Series Standard Stainless Steel 10-32 (F)

Type	Part Number	Operator
3-Way Normally Closed	C032001	Toggle Detented
	C032003	Toggle Momentary
	C032005	Nylon Button
	C032007	Nylon Ball
	C032021	Metal Toggle Detented
	C032023	Metal Toggle Momentary
	C032025	Metal Button
	C032027	Stainless Steel Ball

"300" Series Cartridge

Type	Part Number	Operator
2-Way Normally Closed	C032401	Toggle Detented
	C032403	Toggle Momentary
	C032405	Nylon Button
	C032407	Nylon Ball
	C032421	Metal Toggle Detented
	C032423	Metal Toggle Momentary
	C032425	Metal Button
	C032427	Stainless Steel Ball
3-Way Normally Closed	C032301	Toggle Detented
	C032303	Toggle Momentary
	C032305	Nylon Button
	C032307	Nylon Ball
	C032321	Metal Toggle Detented
	C032323	Metal Toggle Momentary
	C032325	Metal Button
	C032327	Stainless Steel Ball

Look for this symbol next to the part number listing to easily locate stainless steel products.

Product Information

The threaded exhaust port can be used in applications to direct and capture exhaust flow.

"300" Series valves feature miniature size and a single stem design.

- To order standard product refer to Product Information listing
- With Ethylene Propylene O-ring seal, change the "CO" in the part number to "CE"
- With FKM O-ring seal, change the "CO" in the part number to "CV"
- Nylon toggles and push buttons are available in seven colors with black as standard. To order colored actuator specify the color, by code, as a "-code#" suffix following the part number

"300" Series

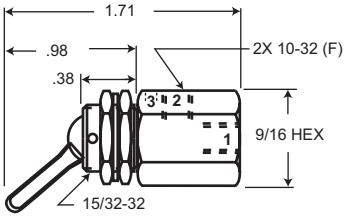
CO 301 01

Seals
O= Buna-N
E= Ethylene Propylene
V= FKM

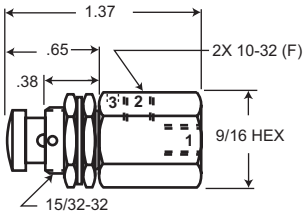
Style and Function	
301 Standard 3WNC	320 Fully Ported SS 3WNC
302 Standard 2WNC	321 Standard SS 2WNC
305 Fully Ported 3WNC	322 Standard SS 3WNC
306 1/8 NPT Input 3WNC	323 Cartridge 3WNC
307 1/8 NPT Input 2WNC	324 Cartridge 2WNC

Actuator
01= Detented Nylon Toggle
03= Momentary Nylon Toggle
05= Nylon Button
07= Nylon Ball
09= 062 Barb Integral Air Pilot
10= Pin
21= Metal Detented Toggle
23= Metal Momentary Toggle
25= Metal Button
27= Stainless Steel Ball

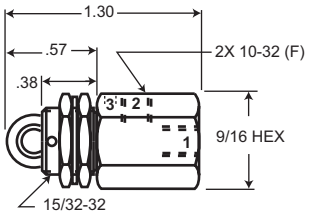
Push Button Actuator



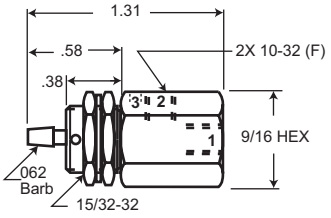
C030101
C030201
C030103
C030203



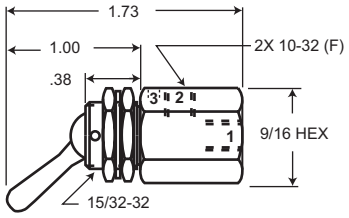
C030105
C030205
C030125
C030225



C030107
C030207
C030127
C030227



C030109
C030209



C030121
C030221
C030123
C030223

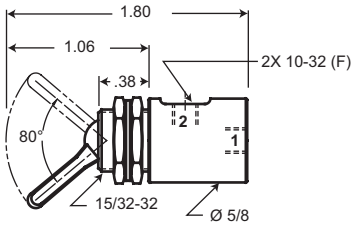
Refer to Product Number Diagram for part number description.

Port 3 is for 3-Way products only.

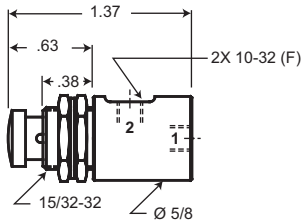
When design makes a dimension critical- contact factory for confirmation.

All dimensions shown subject to change without notice.

Standard (Stainless Steel)



C032101
C032103
C032201
C032203



C032105
C032125
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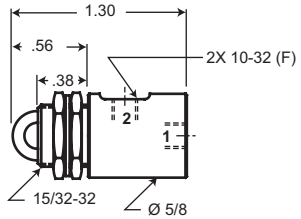
C032225



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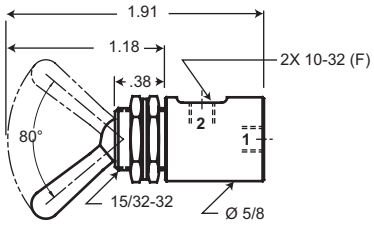
C032227



C032121
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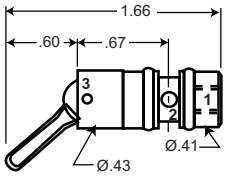
C032223

Cartridge



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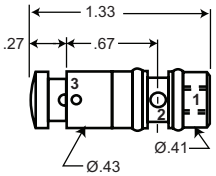

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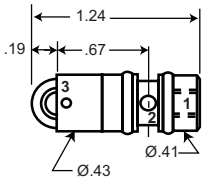

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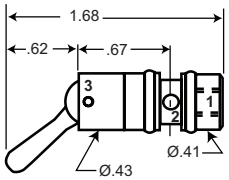

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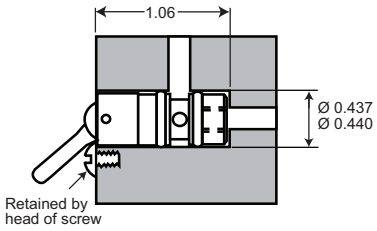
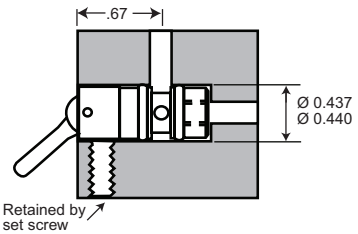
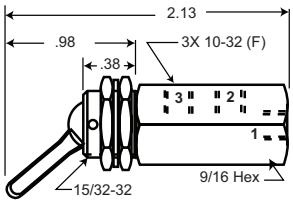


Mounting Options
Preferred Method



Caution- do NOT over torque
retention screw

Fully Ported



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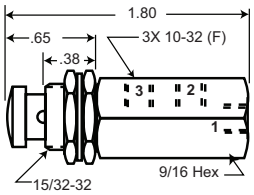

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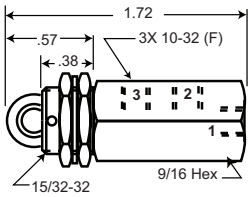

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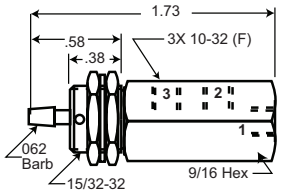

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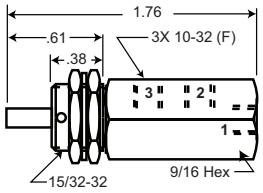

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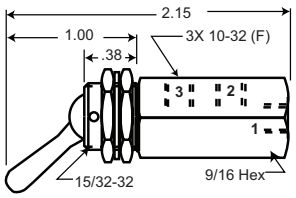
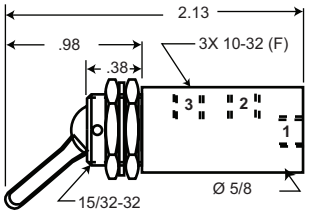


C030521
C030523

Fully Ported (Stainless Steel)



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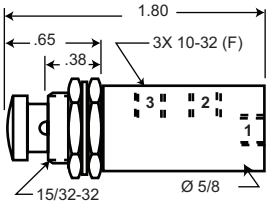

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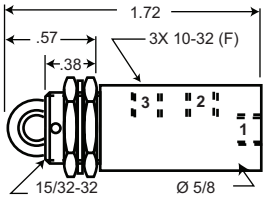

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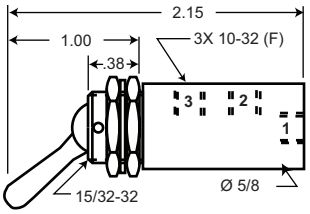
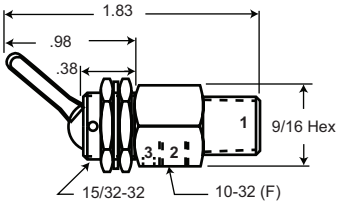


C032021
C032023

Refer to Product Number Diagram for part number description.
When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

1/8 NPT Input



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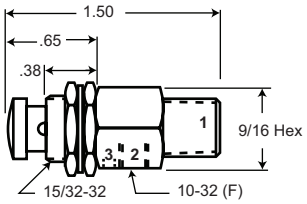

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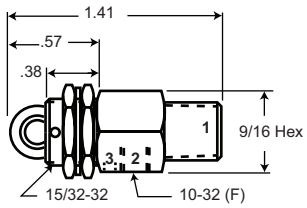

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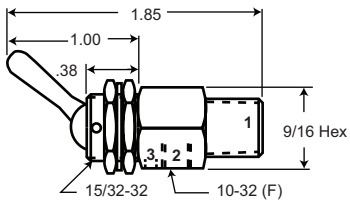


C030621
C030623
C030721
C030723

Refer to Product Number Diagram for part number description.
Port 3 is for 3-Way products only.
When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Features

The “400” Series valves offer 2 and 3-Way Normally Closed functions and feature several configurations for plumbing convenience.

The 1/8 NPT (F) Standard Ported valve features 1/8 NPT female bottom input and side output ports. The exhaust port is non-threaded and is located opposite the output port.

The 1/8 NPT (F) Fully Ported and 1/8 NPT (F) Side Ported valves feature a threaded exhaust port that can be used in applications to direct and capture exhaust flow.

The cartridge valve is ideal for use in manifold systems and custom applications where space is limited.

The 1/8 NPT (F) Rear Ported valve features parallel bottom input and output porting with a streamlined design ideal for use in space constrained applications.

- Compact size (1.5” OAL)
- 4 Porting configurations
- High flow
- Single stem design
- Plumbing versatility
- Mounting versatility
- Vacuum applications to 26” Hg

Technical Data

Performance Data

Temperature Range	Operating Pressure	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
			50 PSI	125 PSI		
-20° to 160° F	26” Hg to 125 psi	.42	15.0	33.0	.01	.03

Flow information supplied for flow path 1-2.

Plumbing Options for Fully Ported Valves

Function	Port 1	Port 2	Port 3
3-Way N.C.	Input	Output	Exhaust
3-Way N.O.	Exhaust	Output	Input
3-Way Vacuum	Input	Output	Exhaust
2-Way Diverter	Output	Input	Output
2-Way Selector	Input	Output	Input
2-Way Vacuum	Output	Input	N/A

Note: Alternative plumbing methods for fully ported valves only.

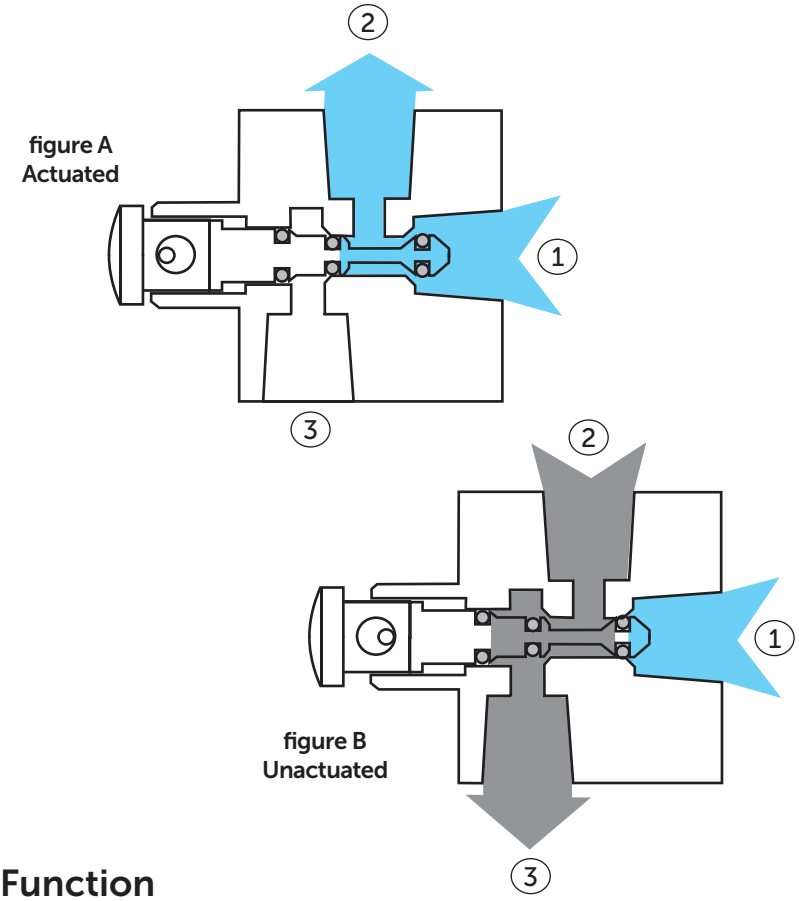
C_v per ANSI / (NFPA) T3.21.3

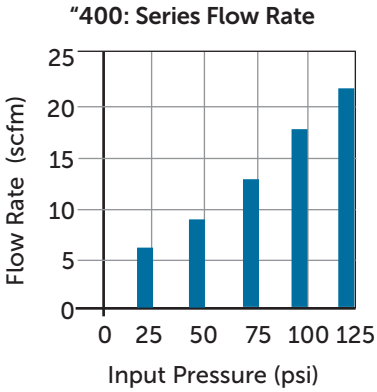
Materials

Aluminum/ Anodize, Brass/ Electroless Nickel, Acetal, Stainless Steel, Nylon, Brass, Buna-N (optional seals available - contact factory)

“400” Series Cross Section

3-Way Normally Closed





“400” Series 1/8 NPT
Side Ported Valves

Function

In the actuated position (Figure A) air flows through port 1 travels around the lower O-ring and out port 2. The center O-ring seals the passage blocking exhaust flow.

In the unactuated position (Figure B) the lower O-ring seals port 1 allowing return flow to enter port 2, travel around the center seal and exhaust to atmosphere through port 3.

Port Options

Definition	1/8 NPT Standard	1/8 NPT Rear Ported	1/8 NPT Fully Ported	1/8 NPT Side Ported
Port 1 Input	1/8 NPT (F)	1/8 NPT (F)	1/8 NPT (F)	1/8 NPT (F)
Port 2 Output	1/8 NPT (F)	1/8 NPT (F)	1/8 NPT (F)	1/8 NPT (F)
Port 3 Exhaust	*non-threaded	*non-threaded	1/8 NPT (F)	1/8 NPT (F)

* Exhausts to atmosphere

Actuation Force

Actuator Style	50 PSI	125 PSI
Toggle	13 oz	19 oz
Ball	3½ lbs	5½ lbs
Push Button	3½ lbs	5½ lbs

Product Information

The 1/8 NPT Rear Ported valve features parallel porting in a compact design

Eight standard operators options are available on the “400” Series valves

The cartridge valve is ideal for use in manifold systems and custom applications where space is limited

1/8 NPT Standard

Type	Part Number	Operator
2-Way Normally Closed	C040201	Toggle Detented
	C040203	Toggle Momentary
	C040205	Nylon Button
	C040207	Nylon Ball
	C040221	Metal Toggle Detented
	C040223	Metal Toggle Momentary
	C040225	Metal Button
	C040227	Stainless Steel Ball
3-Way Normally Closed	C040101	Toggle Detented
	C040103	Toggle Momentary
	C040105	Nylon Button
	C040107	Nylon Ball
	C040121	Metal Toggle Detented
	C040123	Metal Toggle Momentary
	C040125	Metal Button
	C040127	Stainless Steel Ball

1/8 NPT Side Ported

Type	Part Number	Operator
3-Way Normally Closed	C040401	Toggle Detented
	C040403	Toggle Momentary
	C040405	Nylon Button
	C040407	Nylon Ball
	C040421	Metal Toggle Detented
	C040423	Metal Toggle Momentary
	C040425	Metal Button
	C040427	Stainless Steel Ball

Mounting Method

Panel	Surface
Nominal mounting hole dimension 31/64”	(2) .20 diam. thru holes
(2) nuts and (1) lockwasher provided	

Product Information

Panel mount or surface mount
1/8 NPT input valves

The “400” Series valves feature
plumbing versatility

1/8 NPT Fully Ported

Type	Part Number	Operator
3-Way Normally Closed	C040501	Toggle Detented
	C040503	Toggle Momentary
	C040505	Nylon Button
	C040507	Nylon Ball
	C040521	Metal Toggle Detented
	C040523	Metal Toggle Momentary
	C040525	Metal Button
	C040527	Stainless Steel Ball

Cartridge

Type	Part Number	Operator
2-Way Normally Closed	C040701	Toggle Detented
	C040703	Toggle Momentary
	C040705	Nylon Button
	C040721	Metal Toggle Detented
	C040723	Metal Toggle Momentary
	C040725	Metal Button
3-Way Normally Closed	C040601	Toggle Detented
	C040603	Toggle Momentary
	C040605	Nylon Button
	C040621	Metal Toggle Detented
	C040623	Metal Toggle Momentary
	C040625	Metal Button

1/8 NPT Rear Ported

Type	Part Number	Operator
2-Way Normally Closed	C041001	Toggle Detented
	C041003	Toggle Momentary
	C041005	Nylon Button
	C041007	Nylon Ball
	C041021	Metal Toggle Detented
	C041023	Metal Toggle Momentary
	C041025	Metal Button
	C041027	Stainless Steel Ball
3-Way Normally Closed	C040901	Toggle Detented
	C040903	Toggle Momentary
	C040905	Nylon Button
	C040907	Nylon Ball
	C040921	Metal Toggle Detented
	C040923	Metal Toggle Momentary
	C040925	Metal Button
	C040927	Stainless Steel Ball

Product Information

The “400” Series valves are available in a 2-Way function featuring several configurations for plumbing convenience.

The 1/8 NPT Side Ported Valve is able to accommodate reverse flow applications- contact factory

- To order standard product refer to Product Information listing
- With Ethylene Propylene O-ring seal, change the “CO” in the part number to “CE”
- With FKM O-ring seal, change the “CO” in the part number to “CV”
- Nylon toggles and push buttons are available in seven colors with black as standard. To order colored actuator specify the color, by code, as a “-code#” suffix following the part number

Example: 400 Series - Buna N O-rings, Standard 3-Way Normally Closed, with Detented Nylon Toggle

“400” Series

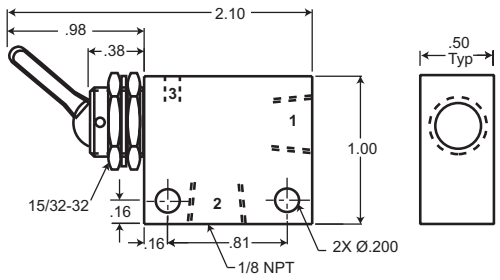
CO 401 01

Seals
O= Buna-N
E= Ethylene Propylene
V= FKM

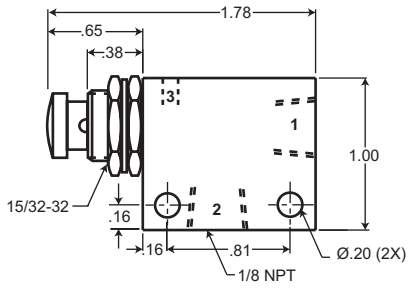
Style and Function
401= Standard 3WNC
402= Standard 2WNC
404= Side Ported 3WNC
405= Fully Ported 3WNC
406= Cartridge 3WNC
407= Cartridge 2WNC
409= Rear Ported 3WNC
410= Rear Ported 2WNC

Actuator
01= Detented Nylon Toggle
03= Momentary Nylon Toggle
05= Nylon Button
07= Nylon Ball
21= Metal Detented Toggle
23= Metal Momentary Toggle
25= Metal Button
27= Stainless Steel Ball
25= Metal Button
27= Stainless Steel Ball

Standard



C040101
C040103
C040201
C040203



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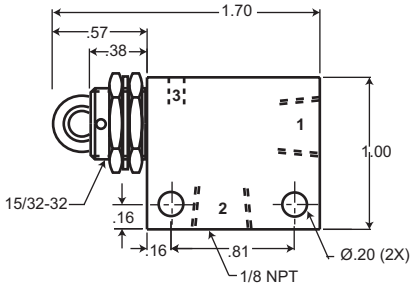

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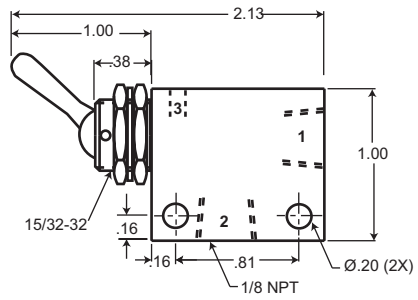

C040121
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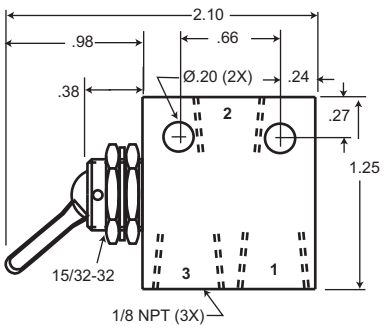
C040221
C040223

Side Ported



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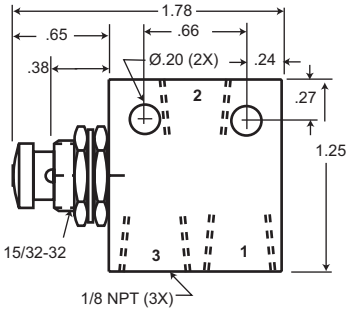

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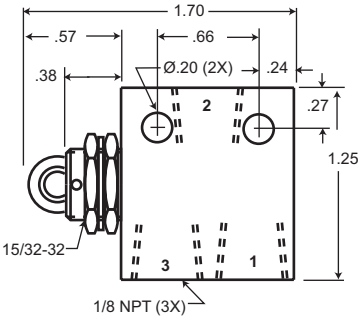

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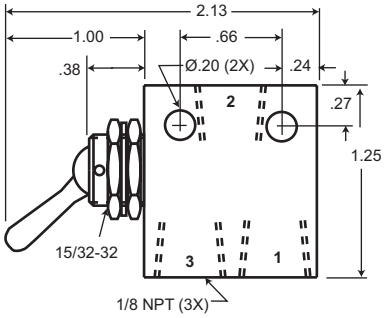


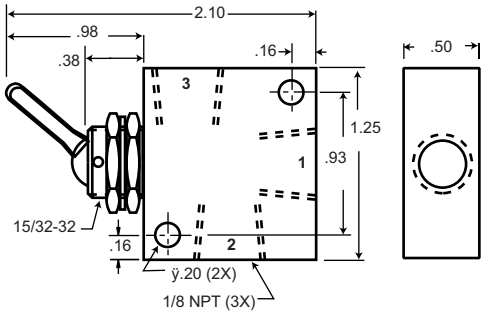
C040421
C040423

Refer to Product Number Diagram for part number description.

When design makes a dimension critical- contact factory for confirmation.

All dimensions shown subject to change without notice.

Fully Ported



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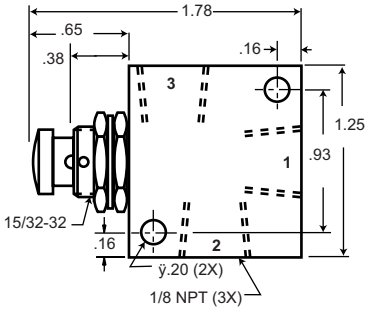

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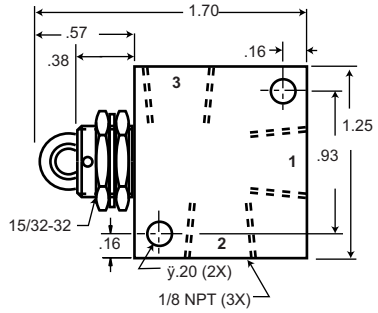

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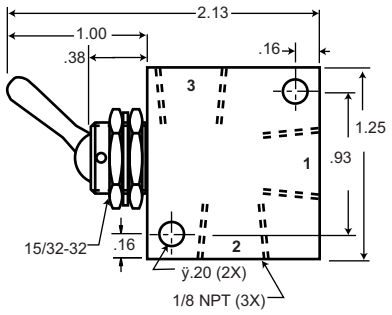
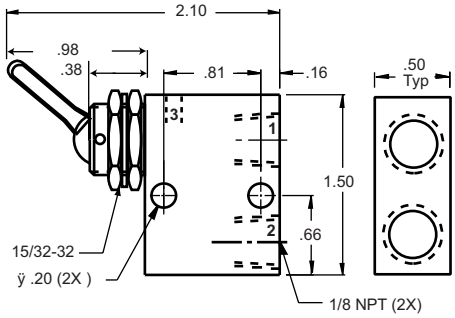


C040521
C040523

Rear Ported



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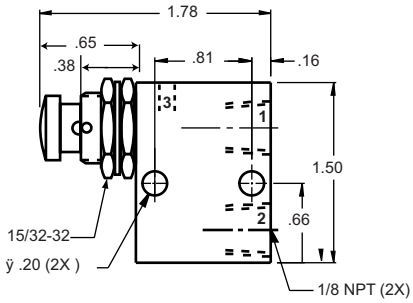
C040903
C041001
C041003



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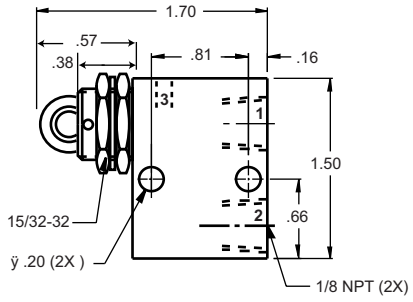

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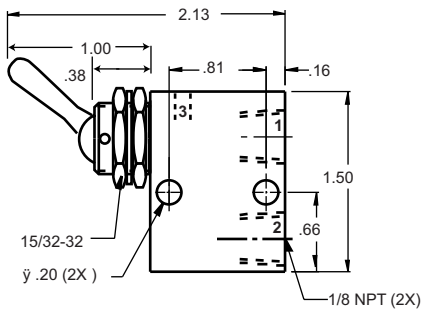
C040927
C041007
C041027



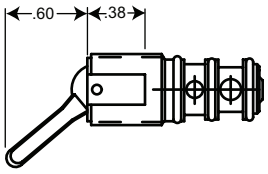
C040921
C040923
C041021
C041023

Port 3 is for 3-Way products only

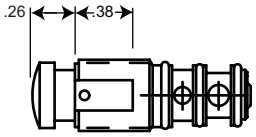
When design makes a dimension critical- contact factory for confirmation.

All dimensions shown subject to change without notice.

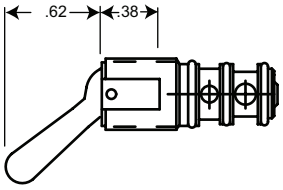
3-Way Cartridge



C040601
C040603

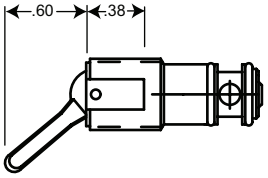


C040605
C040625

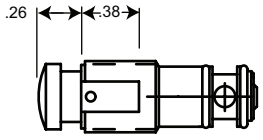


C040621
C040623

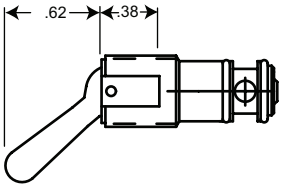
2-Way Cartridge



C040701
C040703



C040705
C040725



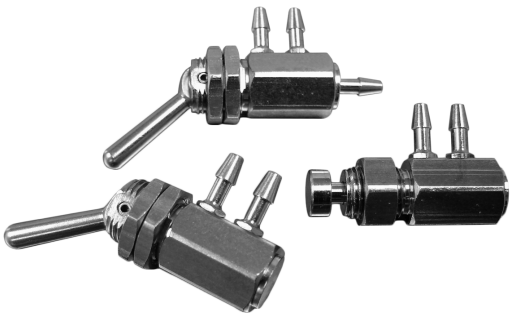
C040721
C040723

Contact factory for cavity dimension drawing.
When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Features

IMI Bimba's Sub-Micro valves offer a higher flow rate than similar subminiature valves in the marketplace. An impressive flow rate of 2.9 scfm at 125 psi produces a Cv of .04. In addition to accommodating vacuum applications, the versatile design allows these 3-Way valves to be plumbed as normally closed or normally open.

Metal actuators enhance the robust design of IMI Bimba's sub-micro valves. The unique design of the detented toggle offers roller ball-like actuation resulting in less wear and longer product life. Flats on the threaded neck ensure that the valve will not rotate when panel mounted. Electroless nickel plating provides corrosion resistance and a pleasing appearance.



- Plumbing versatility
- Metal actuators
- 1/16 barbs
- Precision machined
- Robust design

Technical Data

Performance Data

Temperature Range	Operating Pressure	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
			50 PSI	125 PSI		
-20° to 160° F	26" Hg to 125 psi	.04	1.27	2.90	.11	.19

C_v per ANSI / (NFPA) T3.21.3

Actuation Force

Actuator Style	2-Way Valve		3-Way Valve	
	50 PSI	125 PSI	50 PSI	125 PSI
Push Button	24 oz	41 oz	.24 oz	41 oz
Toggle	7 oz	11 oz	7 oz	11 oz

Plumbing Options for Fully Ported Valves

Function	Port 1	Port 2	Port 3
3-Way N.C.	Exhaust	Output	Input
3-Way N.O.	Input	Output	Exhaust
2-Way Diverter	Output	Input	Output
2-Way Selector	Input	Output	Input

Note: For vacuum application, plumb vacuum source at port 3.

C_v per ANSI / (NFPA) T3.21.3

Materials

Brass / Electroless Nickel, Stainless Steel, Buna-N, Phosphate

Product Information

Sub-Micro Valve

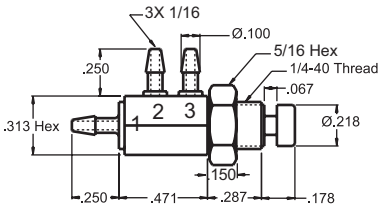
The Sub-Micro valve features an impressive flow rate of 2.9 scfm at 125 psi producing a C_v of .04

- To order standard product refer to Product Information listing.
- Mounting nuts provided.

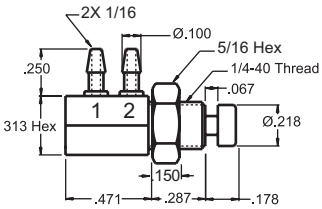
1/16 barbs recommended for use with 1/16 ID PUR tubing

Type	Part Number	Operator
2-Way Normally Closed	AMM-20-1616	Metal Button
	HMM-20-1616	Toggle Detented
3-Way Normally Closed	AMM-30-1616	Metal Button
	HMM-30-1616	Toggle Detented

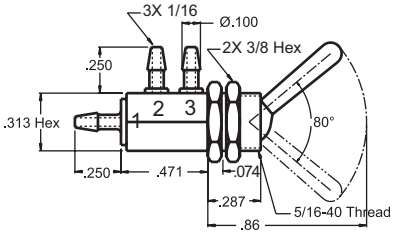
AMM-30-1616



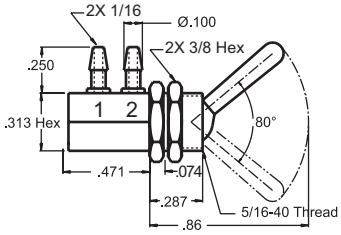
AMM-20-1616



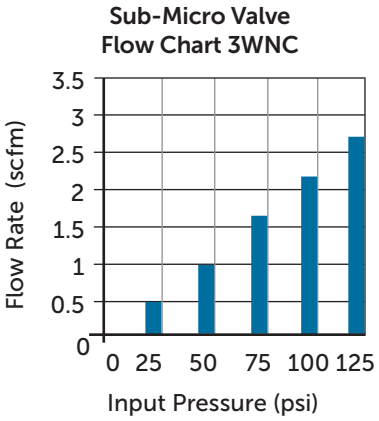
HMM-30-1616



HMM-20-1616



Sub-Micro Valve Flow Chart 3WNC



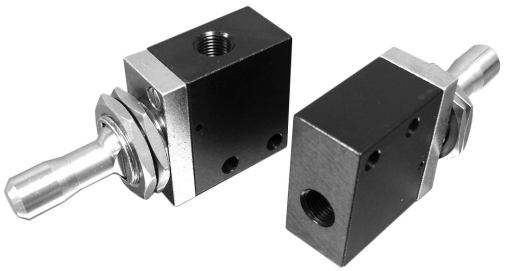
Mounting Method

Nominal Panel Mounting Hole Dimension		
AMM-*0-1616	Ø 17/64"	(1) nut provided
HMM-*0-1616	Ø 21/64"	(2) nuts provided

Features

2-Position Toggle valves shown with Heavy Duty actuator for use in extreme environments. Standard detented and momentary toggles differ in appearance.

The new 2-Position Valves are ideal for use in rugged applications. The combination of the solid aluminum body and stainless steel toggle provides the strength needed to withstand harsh conditions. These 2-Way and 3-Way valves feature 1/8 NPT (F) ports and provide a flow rate of 41 scfm at 125 psi. Both detented and momentary toggles are offered to fit actuation requirements. For extreme environments, heavy duty toggles are also available (-HD option).



- 1/8 NPT (F) ports
- Heavy duty toggle available
- 2-Way or 3-Way function
- Detented & Momentary actuation
- Panel or surface mount
- Anodized for corrosion resistance

Technical Data

Performance Data

Temperature Range	Operating Pressure	Media
-20° to 160° F	0 to 125 psi	Compatible w/ seals

Product	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
		50 PSI	125 PSI		
C04220X C04230X	.47	19	41	.006	.030

Actuation Force

Pressure	2-Way	3-Way
50 psi	72 oz	72 oz
125 psi	7½ lbs	7½ lbs

Mounting Method

Panel	Surface
Nominal hole dimension 25/32" (2) nuts provided	(2) .19 diam. thru holes

Materials

Aluminum/Anodize, Brass/Electroless Nickel, Stainless Steel, Buna-N (other seals available contact factory)

Product Information

2-Position Toggle Valve

Type	Part Number	Porting	Actuation*
2-Way Normally Closed	C042201	1/8 NPT (F)	Det
	C042203	1/8 NPT (F)	Mom
Heavy Duty Toggle	C042201-HD	1/8 NPT (F)	Det
	C042203-HD	1/8 NPT (F)	Mom
3-Way Normally Closed	C042301	1/8 NPT (F)	Det
	C042303	1/8 NPT (F)	Mom
Heavy Duty Toggle	C042301-HD	1/8 NPT (F)	Det
	C042303-HD	1/8 NPT (F)	Mom

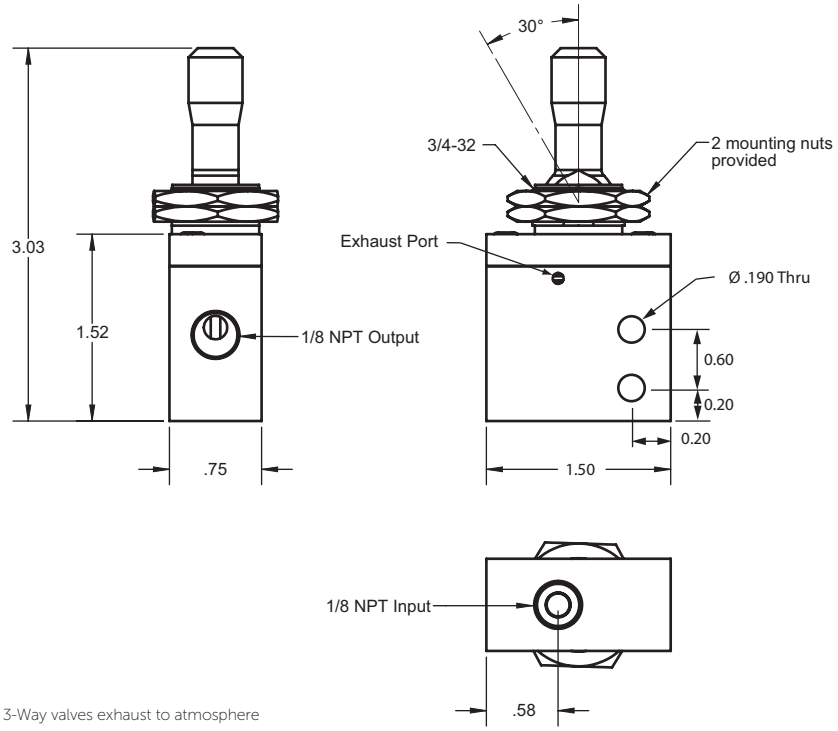
- To order standard product refer to Product Information listing
- With Buna-N O-ring seal, part number listed in chart.
- With Ethylene Propylene O-ring seal, change the "CO" in the part number to "CE"
- With FKM O-ring seal, change the "CO" in the part number to "CV"

When design makes a dimension critical- contact factory for confirmation.

All dimensions shown subject to change without notice.

* 2-Position toggle valve shown with Heavy Duty toggle style (at left) and with Silicone Protective Boot (sold separately) installed (at right)

C04230x-HD



3-Way valves exhaust to atmosphere

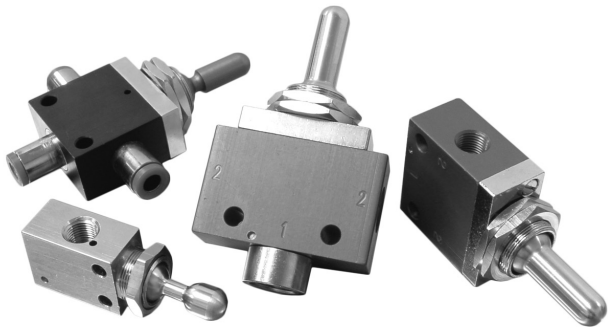
Accessory

Part Number	Description
PPB-3/4	Silicone protective boot for use with momentary style 2-Position Toggle Valves Only

Features

The 3-Position Toggle Valve offers the highest flow rate of the IMI Bimba valve line. This dual function product contains two valves in one body with a common input and common exhaust. The 2-Way high flow valves (C042803 & C042903) feature a red anodized body for easy identification.

The smaller electroless nickel version (C04240X) is ideal in limited space applications.



- Maximum flow rate for miniature valve line
- Dual function
- Mounting versatility
- Push-to-connect fittings available
- Available with 1/8 NPT or 1/4 NPT porting

Technical Data

Performance Data

Product	Temperature Range	Flow Path	Operating Pressure	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
					50 PSI	125 PSI		
C04240X	-20° to 160° F	1-2	0 to 125 psi	.14	5	11	.03	.05
C04250X C04260X		1-2		.54	23	50	.006	.02
C04280X C04290X		1-2/2-1	0 to 150 psi	.70	27	57	.005	.009

Caution: ONLY High Flow version can be plumbed with input at Port 2.

C_v per ANSI / (NFPA) T3.21.3

Actuation Force

Product	2-Way Valve		3-Way Valve	
	50 PSI	125 PSI	50 PSI	125 PSI
C04240X	N/A	N/A	56 oz	72 oz
C04250X & C04260X	72 oz	7-1/2 lbs	72 oz	7-1/2 lbs
C04280X & C04290X	64 oz	84 oz	N/A	N/A

Materials

Aluminum/ Anodize, Brass/ Electroless Nickel, Stainless Steel, Buna-N (other seals available contact factory)

3-Position toggle valve shown with Heavy Duty Toggle style (at left) and with Silicone Protective Boot (sold separately) installed (at right)

3 Position Toggle Cross Section

3-Way Normally Closed

The 3-Position Toggle Valve offers the highest flow rate of the IMI Bimba valve

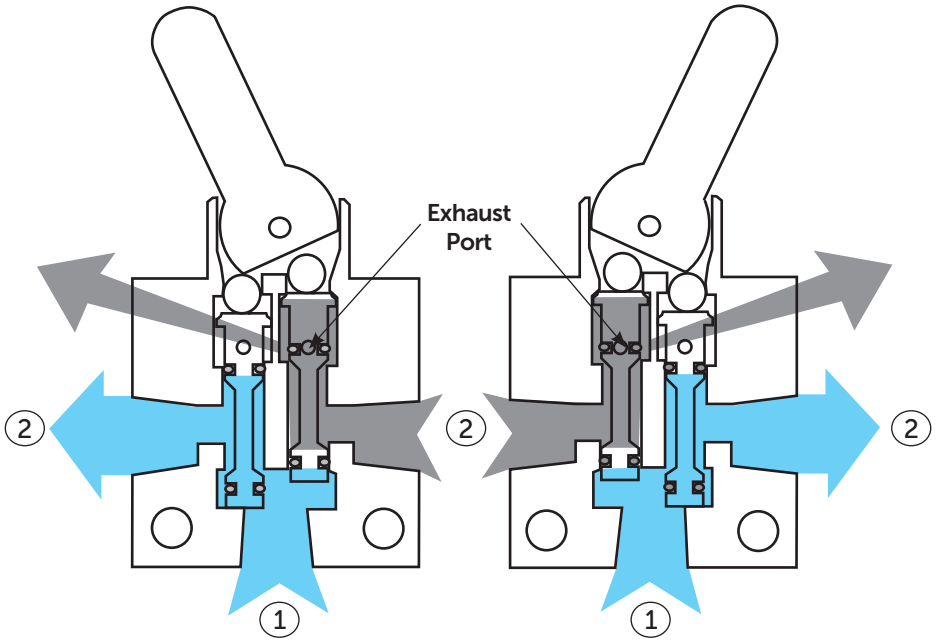
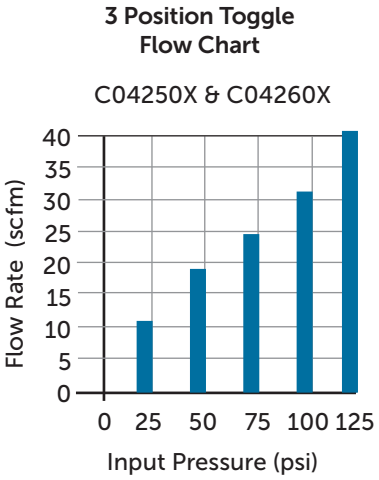


figure A

figure B



Function

When the toggle is centered in the 2-Way configuration all ports are blocked, in the 3-Way configuration both output ports are open to exhaust.

3-Position toggle valve (C042403) features a black anodized body for corrosion and wear resistance.

Port Options

Port 1 Input	1/8 NPT (F) 1/4 NPT (F)
Port 2 Output	1/8 NPT (F) 1/4 NPT (F)
Exhaust	Non-threaded (3-Way Exhausts to Atmosphere)

Mounting Method

Product	Panel	Surface	Hardware
C04240X	Nominal hole dimension 21/32"	(2) .20 diam. thru holes	(1) nuts provided
C04250X C04260X C04280X C04290X	Nominal hole dimension 25/32"	(2) .20 diam. thru holes	(2) nuts provided

Product Information

- With Buna-N O-ring seal, part number listed in chart.
- With Ethylene Propylene O-ring seal, change the "CO" in the part number to "CE"
- With FKM O-ring seal, change the "CO" in the part number to "CV".

"400" Series 3-Position Toggle Valve

Type	Part Number	Porting	Actuation
2-Way (Standard)	C042601	1/8 NPT (F)	Det/ Det
	C042602	1/8 NPT (F)	Det/ Mom
	C042603	1/8 NPT (F)	Mom/ Mom
2-Way (High Flow)	C042801	1/8 NPT (F)	Det/ Det
	C042802	1/8 NPT (F)	Det/ Mom
	C042803	1/8 NPT (F)	Mom/ Mom
	C042901	1/4 NPT (F)	Det/ Det
	C042903	1/4 NPT (F)	Mom/ Mom
2-Way (Heavy Duty Toggle)	C042601-HD	1/8 NPT (F)	Det/ Det
	C042602-HD	1/8 NPT (F)	Det/ Mom
	C042603-HD	1/8 NPT (F)	Mom/ Mom
3-Way (Mini)	C042401	1/8 NPT (F)	Det/ Det
	C042402	1/8 NPT (F)	Det/ Mom
	C042403	1/8 NPT (F)	Mom/ Mom
3-Way (Standard)	C042501	1/8 NPT (F)	Det/ Det
	C042502	1/8 NPT (F)	Det/ Mom
	C042503	1/8 NPT (F)	Mom/ Mom
3-Way (Heavy Duty Toggle)	C042501-HD	1/8 NPT (F)	Det/ Det
	C042502-HD	1/8 NPT (F)	Det/ Mom
	C042503-HD	1/8 NPT (F)	Mom/ Mom

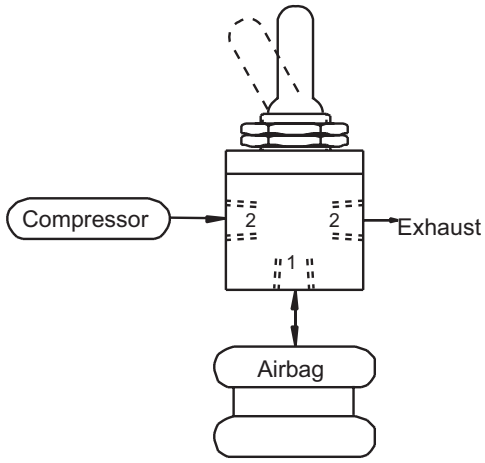
Accessory

Part Number	Description
PPB-3/4	Silicone protective boot for use with momentary style 3-Position Toggle Valves Only

Dual Function Use:

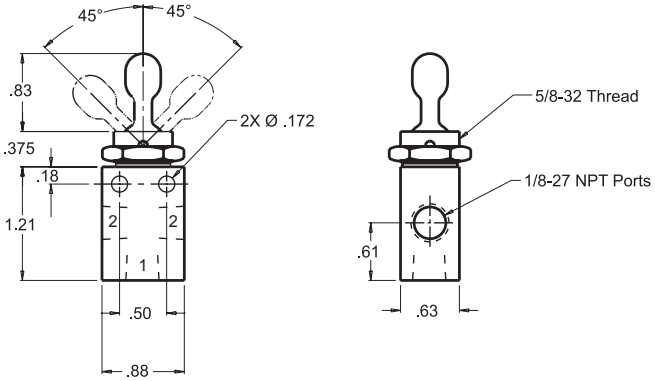
2-Way High Flow C042803 & C042903
Flow Path 2-1
Inflate and deflate an air bag lift device (shown below) Dual pressure selector

3-Way Standard C04250X
Flow Path 1-2 (not shown)
Can be used in 4-W applications (open center) to extend and retract cylinders Pneumatic pilot control on a hydraulic valve



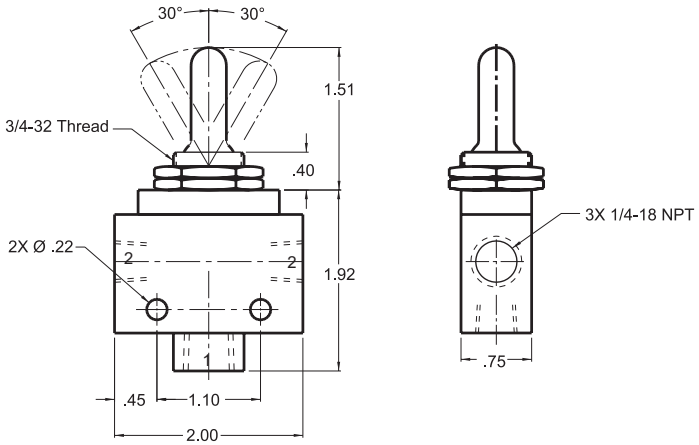
Product Information

3-Position Toggle Valve

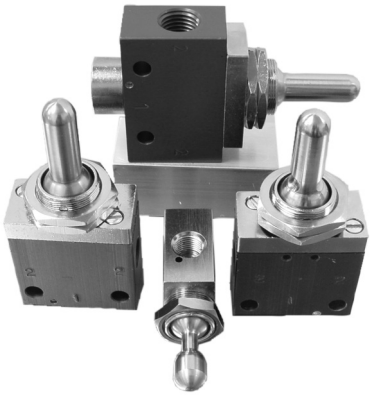


Mini
C04240X

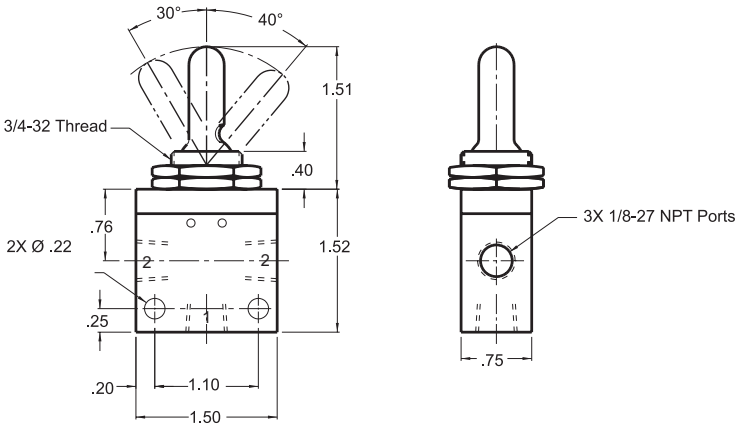
The smaller electroless nickel version (C04240X) is ideal in limited space applications.



1/4 NPT
C04290X



1/8", 5/32", and 1/4" push-to-connect fittings available- see page 182



1/8 NPT
C04250X
C04260X
C04280X

When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Features

Selector Valves allow the actuation of up to six individual circuits from a common input port. Two styles of valves, Standard and Shut-off, are available to accommodate application requirements.

The Standard Selector Valve directs flow through each output port as the knob is turned.

The Shut-off Selector Valve requires the knob to be pushed-in and turned, blocking flow to the output ports until a position is selected. These 3-Way valves exhaust to atmosphere upon selection of a new output port.

A spring-loaded "wear compensating seat" retains a tight fit ensuring that the valve will not leak with wear. Pneumadyne's O-ring style and Push-to-Connect fittings are ideal for use in the 10-32 (F) input and output ports.

- 6-positions, allowing actuation of up to 6 individual circuits
- Common input
- Detented knob
- Two styles of actuation
- Black anodized for corrosion resistance
- Panel mount
- 10-32 (F) ports

Technical Data

Performance Data

Temperature Range	Operating Pressure	Product	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
				50 PSI	125 PSI		
-20° to 160° F	0 to 125 psi	MPS-6-100	.11	4.0	8.8	.0313	.0313
		MPS-6-100-S	.09	3.2	6.7	.0428	.0428

C_v per ANSI / (NFPA) T3.21.3

Mounting Method

Panel
Nominal mounting hole dimension 41/64"
(2) nuts provided

Materials

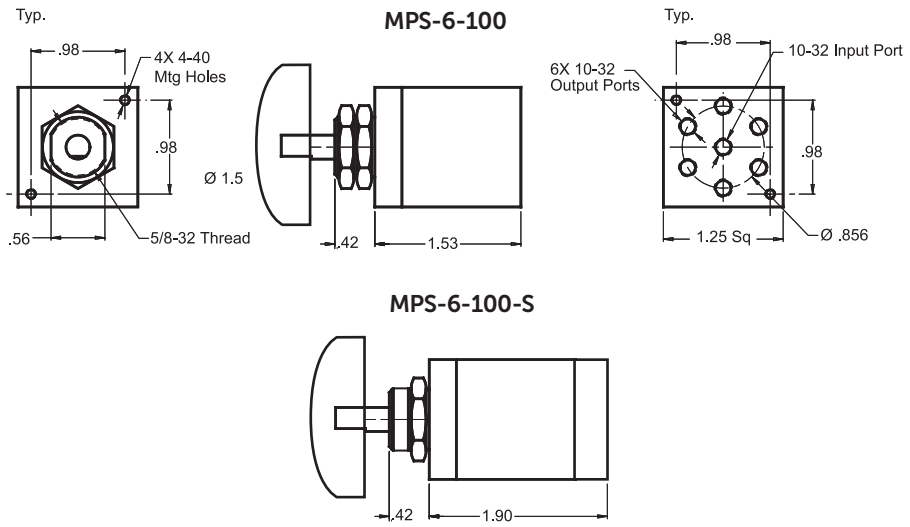
Aluminum/Anodize, Brass/Electroless Nickel, Stainless Steel, Buna-N, Acetal Copolymer, PTFE, Phenolic

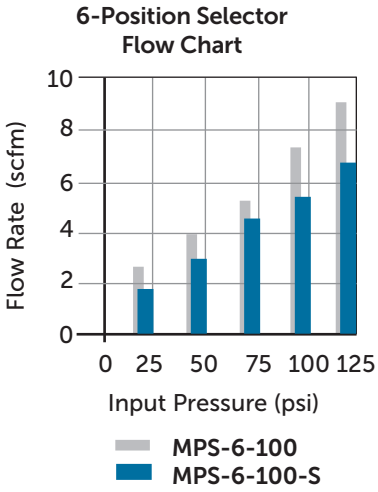
Product Information

6-Position Selector

Part Number	Description
MPS-6-100	Standard Actuation
MPS-6-100-S	Shut-off Actuation

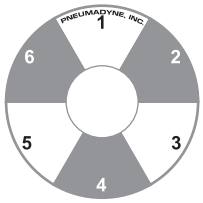
- To order standard product refer to Product Information listing.
- Contact factory for custom configurations.





Standard Products Ideal for use with Selector Valves

6-Position Selector Label (included)



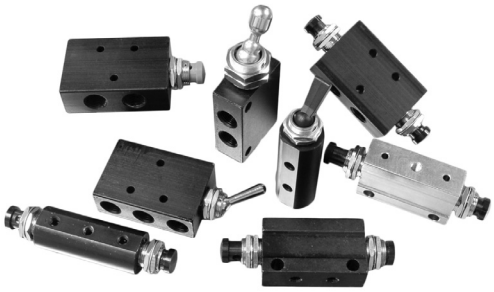
2" dial label is included for use as a visual guide on a panel.

Knob alignment: the set screw must be aligned with the flat on the stem.

O-ring Barb Fittings & Plugs (sold separately)

Unused output ports can be plugged with SPG-10
Reliability of a metal-to-metal mechanical fit
Captured O-ring for superior seal
Precision machined barb design
Electroless nickel plated brass

Features



4-Way valves are one of the most commonly used pneumatic components for directional control. A 4-Way has four distinct flow paths within the valve and is commonly used to cause reversible motion of a cylinder or motor. IMI Bimba manufactures two complete series of 4-Way valves featuring multiple actuator and porting options.

The "4" Series valves feature five actuator options including a specially designed Heavy Duty Toggle for use in rugged applications.

The "45" Series valves feature higher flow rates and a balanced spool allowing the use of threaded exhaust ports to direct and capture exhaust flow. In addition to the standard toggles and buttons, a Double Push Button (-DP) has been added to accommodate circuitry requirements. The Double Push Button is most commonly used in conjunction with air pilot operators. This combination allows two different pneumatic signals to actuate the valve and direct air flow.
For plumbing convenience, push-to-connect fittings are also available.

- 4-Way 2 position function
- Balanced spool design (45 Series)
- Heavy duty toggle available
- Panel or surface mount
- Push-to-connect fittings available

Technical Data

Performance Data

Temperature Range	Operating Pressure	Media
-20° to 160° F	0 to 125 psi	Compatible w/ seals

Product	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10 PSI
		50 PSI	125 PSI		
"45" Series 10-32 (F)	.23	7.8	17.3	.02	.03
"45" Series 1/8 NPT (F)	.37	12.1	27.2	.01	.02
"4" Series	.13	5.1	10.9	.03	.05

C_v per ANSI / (NFPA) T3.21.3

Port Options

Panel	Port 1, Input	Port 2, 4 Output	Port 3, 5 Exhaust
"45" Series 10-32 (F)	10-32 (F)	10-32 (F)	10-32 (F)
"45" Series 1/8 NPT (F)	1/8 NPT (F)	1/8 NPT (F)	1/8 NPT (F)
"4" Series	(x3) 10-32 (F) (x3) 5/32" PI	(x3) 1/4" PI (x3) 1/8" PI	non-threaded NOT TO BE RESTRICTED
	(x3) 1/8 NPT (F)		

Cv per ANSI / (NFPA) T3.21.3

Materials

Aluminum/ Anodize, Brass/ Electroless Nickel, Acetal, Stainless Steel, Nylon, Nickel, Buna-N (other seals available - contact factory)

Note: If the valve is used to select between two different pressures, the higher pressure must flow between ports 4 and 5, the lower pressure between port 2 and 3.

"4" Series Cross Section

4-Way 2-Position

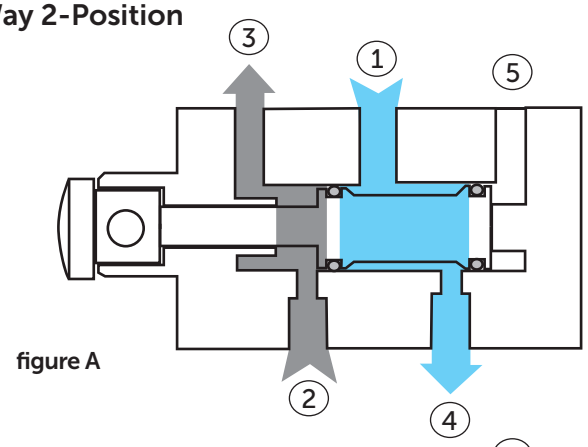


figure A

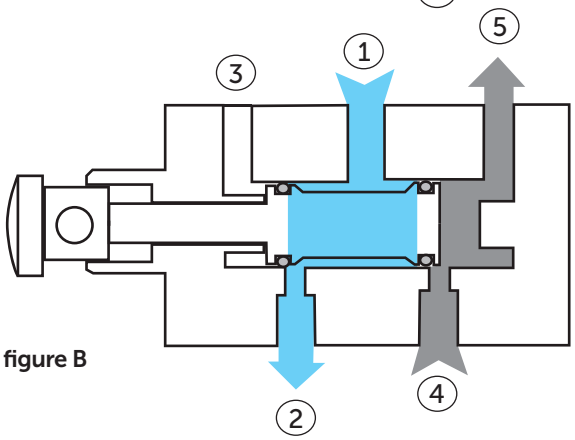
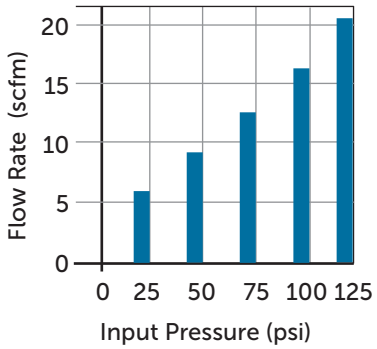
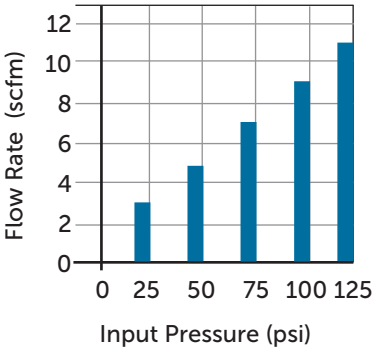


figure B

45 Series: 1/8 NPT (F)
Flow Chart



4 Series
Flow Chart



Function

In the example above (Figure A) flow is directed through port 1 to port 4 as port 2 exhausts to atmosphere through port 3.

In Figure B the spool is reversed and the flow is directed through port 1 to 2 as port 4 exhausts to atmosphere through port 5.

Actuation Force

Actuator Style	"45" Series: 10-32 (F)		"45" Series: 1/8 NPT (F)		"4" Series	
	50 PSI	125 PSI	50 PSI	125 PSI	50 PSI	125 PSI
Nylon Toggle	16 oz	16 oz	16 oz	20 oz	N/A	N/A
Metal Toggle	13 oz	13 oz	13 oz	16 oz	16 oz	16 oz
Push Button	5 lbs	8 lbs	5 lbs	8 lbs	3 lbs	3 lbs
Double Push	16 oz	3 lbs	16 oz	3 lbs	12 oz	12 oz

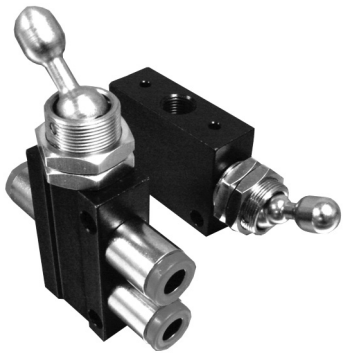
Mounting Method

Series	Panel	Surface
"45" Series 10-32 (F)	31/64"	MB-1 or MB-1F
"45" Series 1/8 NPT (F)	31/64"	(3) .14 diam. thru holes
"4" Series	31/64"	(2) .20 diam. thru holes
"4" Series Heavy Duty Toggle	21/32"	(2) .20 diam. thru holes

Product Information

Please use Product Number Diagram to interpret part numbers (do not attempt to build part numbers) see Product Information for part number listing.

- To order standard product refer to Product Information listing.
- Optional seals- contact factory.
- Spring Bias function available to custom orders.
- Push/Pull Knob (PK) now available in red. To order add a -3 suffix to the part number.
- Nylon toggles and push buttons are available in seven colors with black as standard. To order colored actuators specify the color, by code, as a "-code# " suffix following the part number



"4" Series valve with Heavy Duty Toggle and push-to-connect fittings

Example: "4" Series, Aluminum/ Black Anodize, 10-32 (F) ports, Double Push Button

"4" Series

A 4 C - 100 - DP

Actuator
A= Push Button
H= Heavy Duty Detent Toggle
F= Heavy Duty Momentary Toggle

Port Options
100= 10-32 (F)
1/8= 1/8 NPT (F)

Actuator Style
DP= Double Push
DT= Toggle Detent
PK= Push/Pull Knob
SR= Spring Return

Series
4= "4" Series

Finish
C= Black Anodize
N= Electroless Nickel (10-32 Only)

Example: "45" Series, Nylon Button, 10-32 Fully Ported, Spring Return

"45" Series

AP 45 - 100 - SR

Actuator
AP= Push Button
AM= Metal Button
FP= Momentary Toggle
HP= Detented Toggle
HM= Metal Detented Toggle

Port Options
100= 10-32 (F)
1/8= 1/8 NPT (F)

Series
45= "45" Series

Actuator Style
DP= Double Push
DT= Detented
SR= Spring Return

Product Information

“4” Series Standard
4-Way 3 Port 2 Position

Porting	Part Number	Actuator
10-32 (F)	A4C-100-DP	Double Push Button
	A4C-100-PK	Push/Pull Knob
	A4C-100-SR	Button w/ Spring Return
	A4N-100-DP	Double Push Button- ENI
	A4N-100-PK	Push/Pull Knob- ENI
	A4N-100-SR	Button w/ Spring Return- ENI
	H4C-100-DT	Heavy Duty Toggle-Det
1/8 NPT (F)	A4C-1/8-DP	Double Push Button
	A4C-1/8-PK	Push/Pull Knob
	A4C-1/8-SR	Button w/ Spring Return
	H4C-1/8-DT	Heavy Duty Toggle-Det

“45” Series
10-32 (F) Fully Ported
4-Way 5 Port 2 Positions

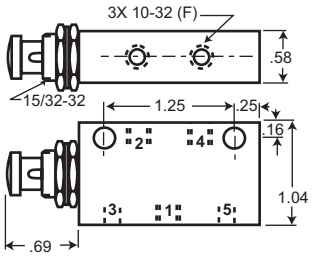
Porting	Part Number	Actuator
10-32 (F)	AP45-100-DP	Double Push Button
	AP45-100-SR	Nylon Button
	AM45-100-SR	Metal Button
	FP45-100-SR	Nylon Tog Mom
	HP45-100-DT	Nylon Tog Det
	HM45-100-DT	Metal Tog Det

“45” Series
1/8 NPT (F) Fully Ported
4-Way 5 Port 2 Positions

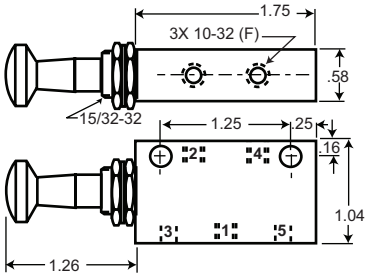
Porting	Part Number	Actuator
1/8 NPT (F)	AP45-1/8-DP	Double Push Button
	AP45-1/8-SR	Nylon Button
	AM45-1/8-SR	Metal Button
	FP45-1/8-SR	Nylon Tog Mom
	HP45-1/8-DT	Nylon Tog Det
	HM45-1/8-DT	Metal Tog Det

“4” Series

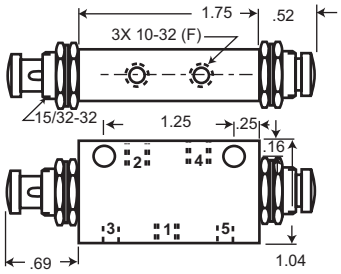
Spring Return
A4C-100-SR
A4N-100-SR



Push/Pull Knob
A4C-100-PK
A4N-100-PK

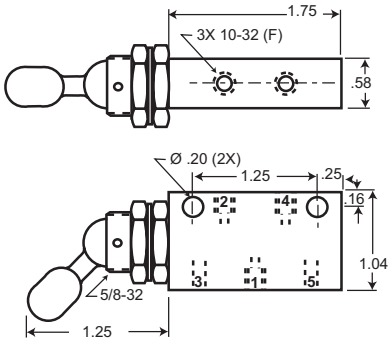


Double Push Button
A4C-100-DP
A4N-100-DP

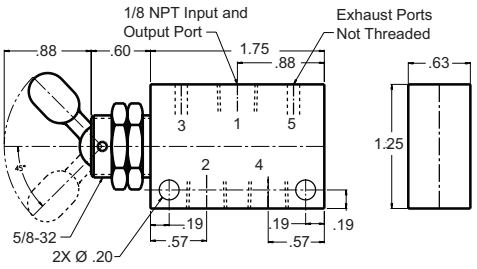


“4” Series

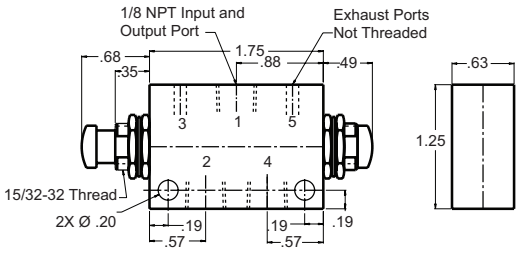
Heavy Duty Toggle
H4C-100-DT



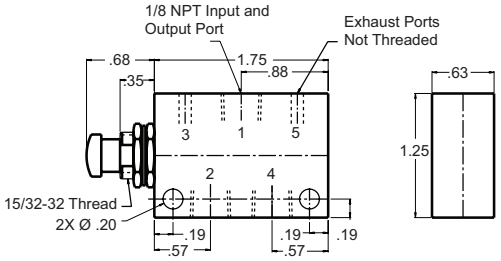
Heavy Duty Toggle
H4C-1/8-DT



Double Push Button
A4C-1/8-DP



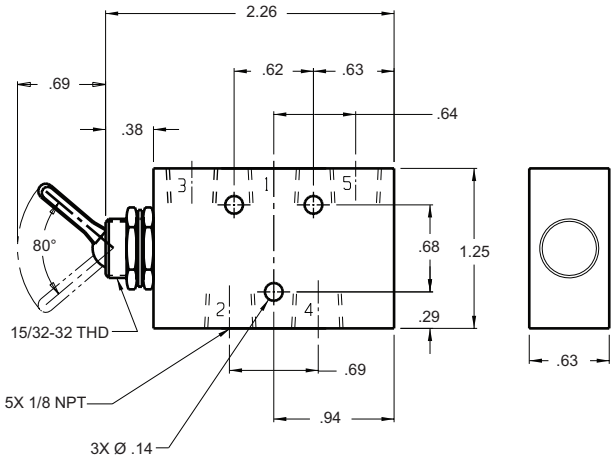
Spring Return
A4C-1/8-SR



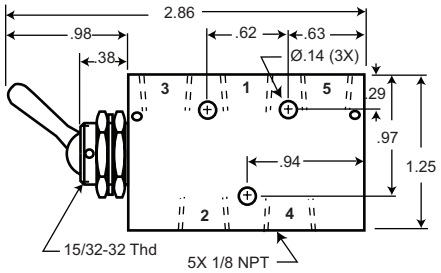
When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

“4” Series

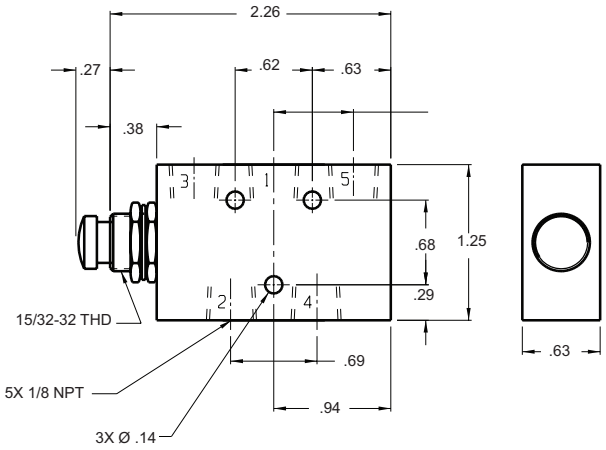
FP45-1/8-SR
HP45-1/8-DT



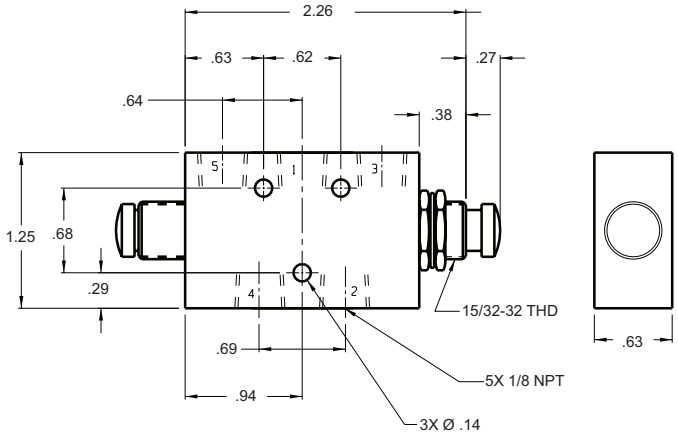
HM45-1/8-DT



AP45-1/8-SR
AM45-1/8-SRT



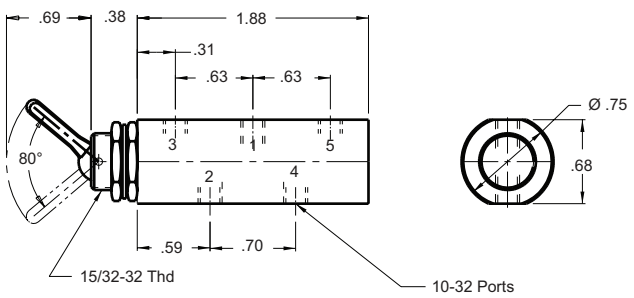
AP45-1/8-DP



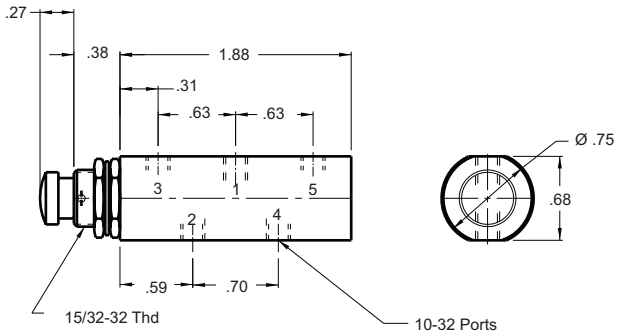
When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

“45” Series

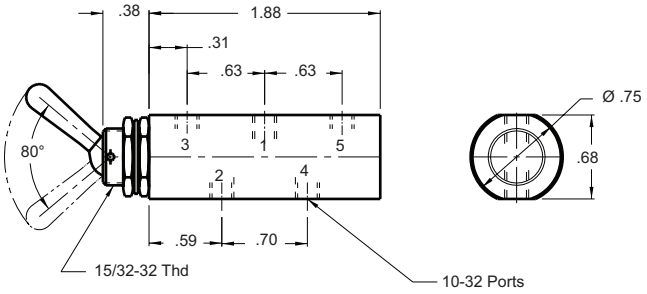
FP45-100-SR
HP45-100-DT



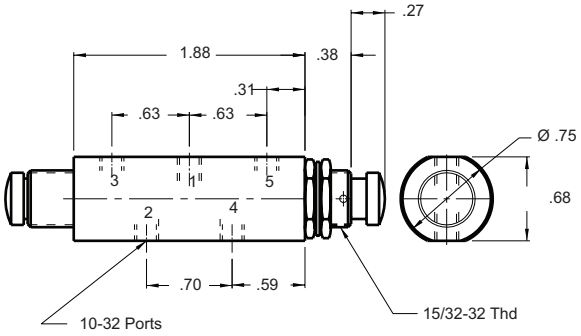
AP45-100-SR
AM45-100-SR



HM45-100-DT



AP45-100-DP



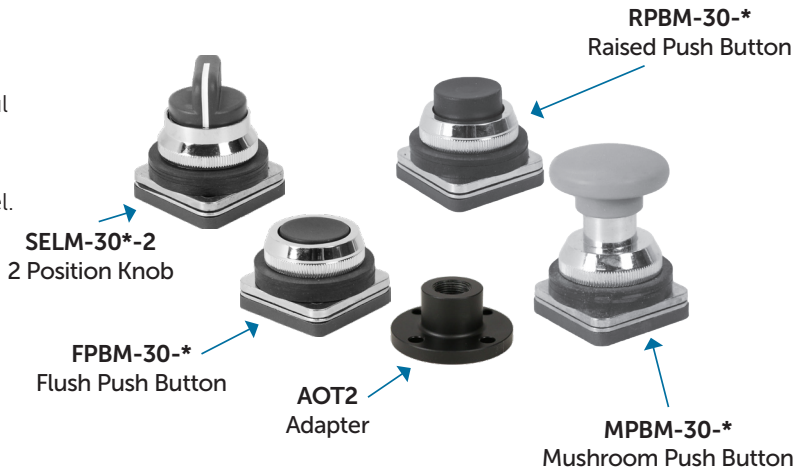
Features

IMI Bimba's offering of Oil Tight Operators provides a selection of push buttons in flush, raised and mushroom styles as well as knob operators. All operators offer easy actuation and several are available in assorted colors, useful in coding control panels.

The rugged design is oil and water tight, ensuring that liquids will not leak behind the operator and into your panel.

Oil Tight Operators can be used with IMI Bimba's push button style valves. The AOT2 Adapter is required to install the operator on to the valve.

- Rugged design
- Several styles in an assortment of colors
- Oil and water tight
- 30 mm diameter
- Panel mount
- Matches electrical controls
- For use with Pneumadyne push button valves



Technical Data

Performance Data

Size 30 Part Number	Description	Available Color	Valve Lock Washer Req.
FPBM-30-*	Flush Push Button	2, 3, 5, 6	
MPBM-30-*	Mushroom Push Button	2, 3, 5	
RPBM-30-*	Raised Push Button	2, 3, 5	
SELM-301-2	2 Position Knob Selector-Det	2	•
SELM-302-2	2 Position Knob Selector-Mom	2	•
AOT2	Oil Tight Adapter	2	

* Use color code to indicate color selection not all colors are available to all actuators see "Available Color" for possible selections

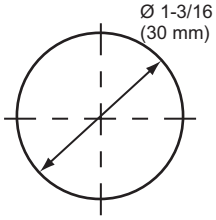
2= Black 3= Red 5= Green 6=Yellow

These styles require installation of a lockwasher on the valve neck before fixing the valve to the oil tight adapter.

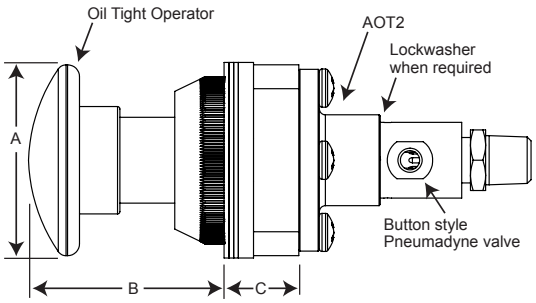
Product Information

Oil Tight Operators

- To order standard product refer to Product Information listing.
- All parts sold separately.



Standard hole dimensions for IMI Bimba Oil Tight Operator

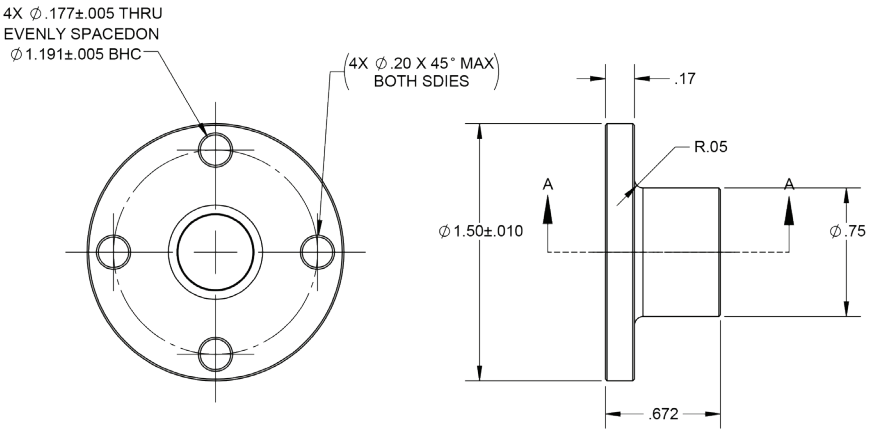


Typical Oil Tight Operator with Valve installed

Size 30 Part Number	Dimensions A	B	C
FPBM-30-*	1.37	.44	.65
MPBM-30-*	1.56	1.6	.65
RPBM-30-*	1.37	.71	.65
SELM-30*-2	1.37	1.25	.65

When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Oil Tight Adapter



Part Number: **AOT2**

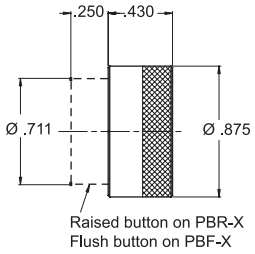
Mounting screws included (2 each)

Features

- Accessories to customize and enhance our standard product line are sold separately
- Operators: Cam Operators, Thumb Operator, Shrouded Button Operator, Heavy Duty Operator
- Mounting Brackets
- Dress Plates
- Micro Gauge

Shrouded Button Operator

Designed for use with IMI Bimba push button valves, the Shrouded Button provides a larger tactile surface for actuation. Available in three colors. Replace the "X" in the part number with the desired color code number.



Note: One 5/64" thick locknut (provided) is required when installed without a mounting bracket.

When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

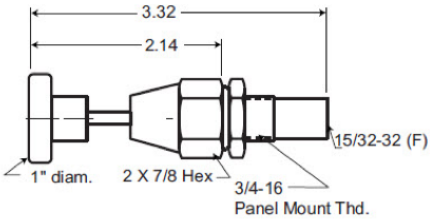
Part Number	Mounting	Description	Standard Available Color
PBF-X	15/32-32 (F)	Flush	2= Black 3= Red 5= Green
PBR-X	15/32-32 (F)	Raised	

Materials

Aluminum/ Anodize, Aluminum/ Electroless Nickel, Brass

Heavy Duty Operator

The heavy duty operator is designed for use on IMI Bimba's push button valves and is available in push and push-to-lock styles. Ideal for heavy-duty industrial use.



Part Number	Style	Max Stroke	Mounting Holes
HDO	Push	.35	3/4"
HDOL	Push-to-Lock	.35	

Materials

Aluminum/ Anodize, Brass, Steel, Buna-N, Stainless Steel/ Zinc

Cam Operators

Designed for use on IMI Bimba push button valves and available in three styles. All are manufactured from steel with electro nickel plating. The roller is manufactured from durable acetal plastic. All cams feature a unique acetal pad which minimizes side load and virtually eliminates wear.

(Not for use on "4" Series valves)

Part Number	Stroke	Mounting Holes
CA-1	2.1	31/64"
CA-4	6	31/64"

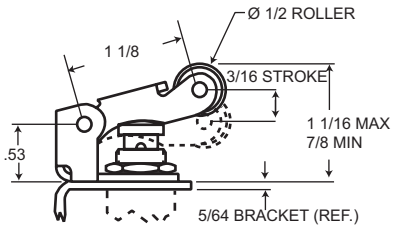
Stroke ratio defined in glossary

Must be installed with a mounting bracket MB-1 or MB-1F, or 5/64" thick nut (supplied with valve).

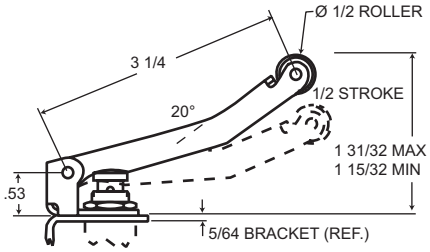
Materials

Steel/ Electroless Nickel, Acetal, Stainless Steel

CA-1

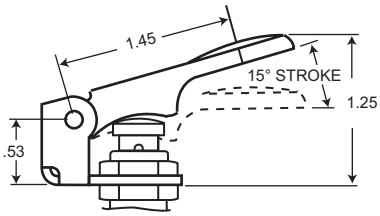


CA-4



Thumb Operators

Designed for use on IMI Bimba push button valves to provide greater tactile surface and reduce operator fatigue. Features a unique acetal pad which minimizes side load and virtually eliminates wear. (Not for use on "4" Series valves)



To prevent pre-stroking All cam operators must be installed with a mounting bracket, MB-1 or MB-1F or 5/64" thick nut (supplied with the valve).

Part Number	Stroke	Mounting Holes
TA-1	2.7	31/64"

Stroke ratio defined in glossary

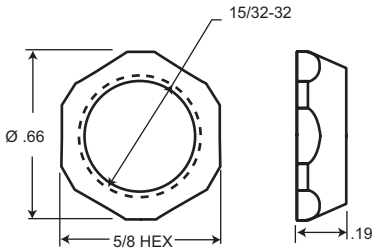
Materials

Steel/ Electroless Nickel, Acetal, Stainless Steel

When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Dress Plate

Dress plates are manufactured from aluminum and are either black anodized or electroless nickel plated for appearance and corrosion resistance. To provide a finished look first install the dress plate on the valve then tighten from behind the control panel.



DP-11
DP-22

Part Number	Thread	Finish
DP-11	15/32-32	Black Anodize
DP-22	15/32-32	Electroless Nickel

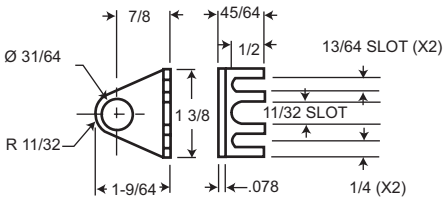
Materials

Aluminum/ Black Anodize or Aluminum/ Electroless Nickel

Mounting Brackets

The flat and angled mounting brackets are manufactured from steel and provide a convenient method for mounting valves to a machine member.

Part Number	Description
MB-1	90° angle bracket
MB-1F	Flat bracket

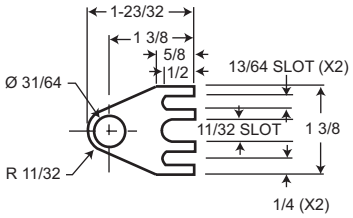


MB-1
90° angle mounting bracket

Materials

Steel/ Electro Nickel

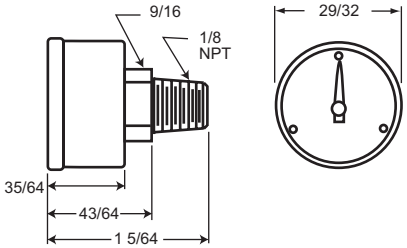
* One locknut and washer required to secure mounting bracket against valve shoulder.



MB-1F
Flat mounting bracket

Micro Gauge

Ideal for space constrained applications that require separate pressure readings. The micro gauge is easily installed using the 1/8 NPT male thread. The micro gauge can be mounted on the IMI Bimba "11" Series regulators with an extended gauge port, providing a point of use pressure indicator.



When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Part Number	Pressure Range	Temperature Range	Repeatability	Accuracy	Mounting	Hex
PMG-60	0-60 psi	-40° F to 150° F	+/-1%	+/- 5% Full Scale	1/8 NPT (M)	9/16
PMG-100	0-100 psi					
PMG-160	0-160 psi					

Materials

Bourdon Tube: Spiral Beryllium copper, soft soldered to socket
Pointer: Red painted brass
Dial: White/ Aluminum with black scale
Window: Polycarbonate
Fill: Dry
Case: Black ABS plastic

Features

Check valves are used in pneumatic circuits which require free flow in one direction and no flow in the opposite direction.

Application

Check valves are generally used in systems as a bypass valve, allowing flow around components like needle valves which otherwise restrict flow in both directions.

- Multiple porting options
- Durable brass construction
- Low cracking pressure
- Compact in-line or port mounting styles

Technical Data

Performance Data

Temperature Range	Operating Pressure	Porting Option In/ Out	C_v	Flow Rate (scfm)		Cracking Pressure	Fill sec/ in^3 0-90 PSI
				50 PSI	125 PSI		
-20° to 160° F	0 to 125 psi	062 Barb/ 062 (min. flow option)	.03	1.09	2.5	0.1	.13
		10-32 Thd/ 10-32 Thd (max. flow option)	.09	4.5	9.5	0.1	.03
		1/8 NPT (F)/ 1/8 NPT (F)*	.41	14.3	31.5	0.5	.01
		1/8 NPT / 1/4 PI*	.32	9.7	24.5	0.5	.012
		1/4 PI / 1/4 PI*	.26	9.0	19.5	0.5	.014

*Other cracking pressures available- contact factory

C_v per ANSI / (NFPA) T3.21.3

* 062 barb recommended for use with 1/16 ID PUR tubing

* 110 barb recommended for use with 5/64 ID PUR tubing

* 170 barb recommended for use with .170 ID PUR tubing

Materials

Brass/ Electroless Nickel, Buna-N, Stainless Steel

Twenty-One check valve configurations available

Check Valve Cross Section

- To order standard product refer to Product Information listing.
- Optional batwing materials available- contact factory.
- Custom barbs available- contact factory.

Figure A

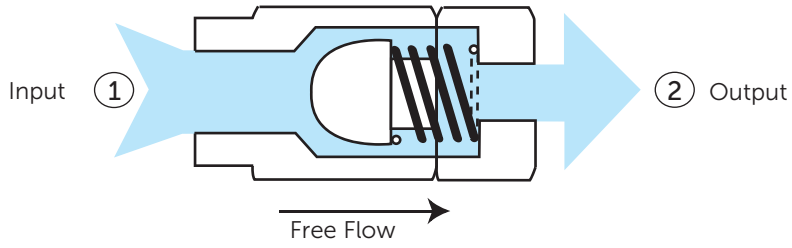
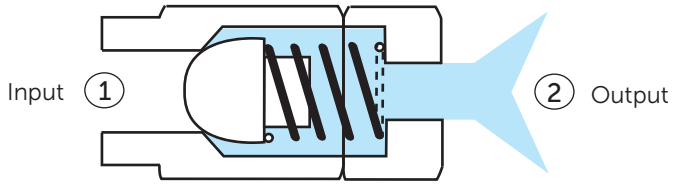


Figure B



Part Number	Input	Output
C050101	1/16 Barb	1/16 Barb
C050102	110 Barb	110 Barb
C050104	170 Barb	170 Barb
C050201	10-32 (M)	1/16 Barb
C050202	10-32 (M)	110 Barb
C050204	10-32 (M)	170 Barb
C050205	10-32 (M)	10-32 (M)
C050206	1/16 Barb	10-32 (M)
C050210	170 Barb	10-32 (M)
C050301	10-32 (M)	10-32 (F)
C050302	10-32 (F)	10-32 (M)
C050401	10-32 (F)	10-32 (F)
C050401-SS	10-32 (F)	10-32 (M)
C050501	1/8 NPT (F)	1/8 NPT (F)
C050501-SS	1/8 NPT (F)	1/8 NPT (F)
C050502	1/8 NPT (F)	1/8 NPT
C050503	1/8 NPT	1/8 NPT (F)
C050504	1/8 NPT	1/8 NPT
C050601	1/8 NPT (F)	1/4 PI
C050602	1/8 NPT	1/4 PI
C050603	1/4 PI	1/8 NPT (F)
C050604	1/4 PI	1/8 NPT
C050605	1/4 PI	1/4 PI

*-SS used to indicate stainless steel

Function

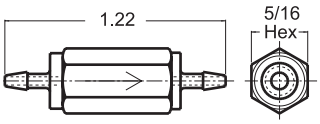
Two internal designs were developed to ensure a low cracking pressure. The 1/8 NPT style utilizes a poppet and spring, whereas, the 10-32 / barb styles feature a batwing.

When system pressure at the check valve input 1 is high enough to overcome the low spring force (1/2 psi) the poppet is moved off its seat allowing flow out port 2. The flow of a fluid through the check valve is defined as “free flow”. When fluid flow reverses the poppet is pushed into its seat, blocking or “checking” the system flow (figure B).

In comparison, the batwing in the 10-32 / barb styles flexes to allow flow through the output port when system pressure exceeds cracking pressure. When fluid flow reverses the batwing straightens, “checking” the system flow.

1/8 NPT (F) style utilizes a poppet and spring design

Product Information



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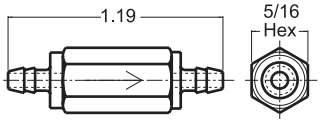

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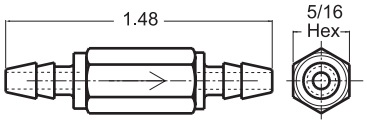

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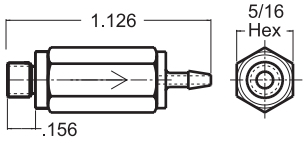

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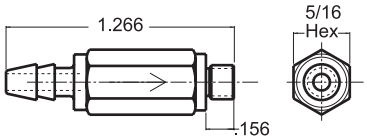

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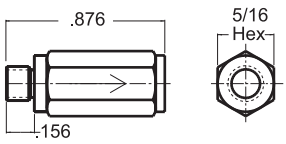

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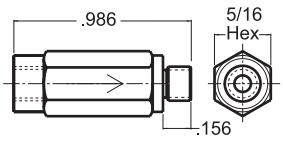

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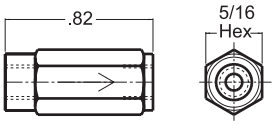

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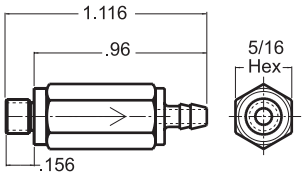

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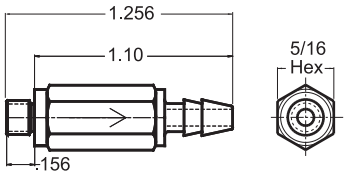

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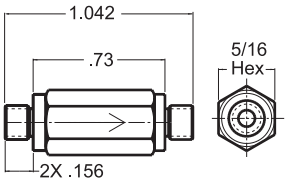

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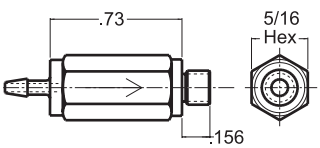
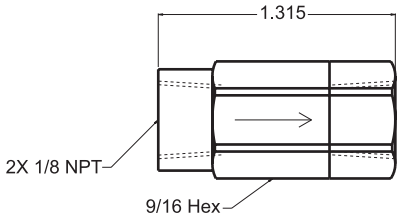


C050206

Product Information



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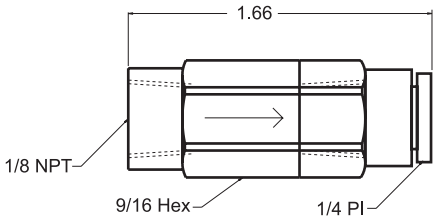

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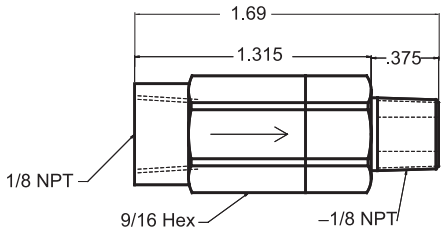

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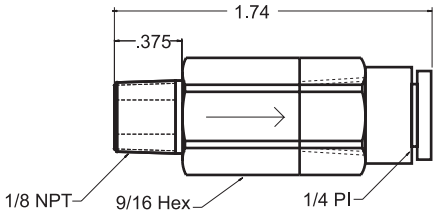

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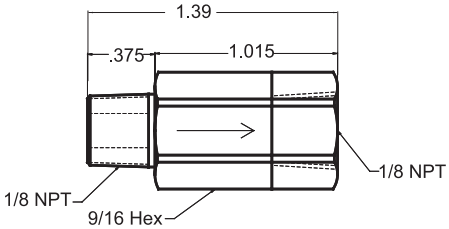

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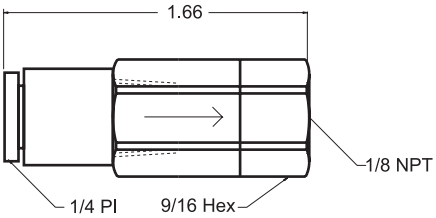

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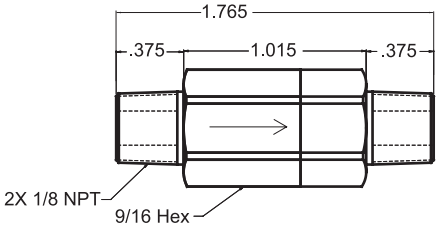

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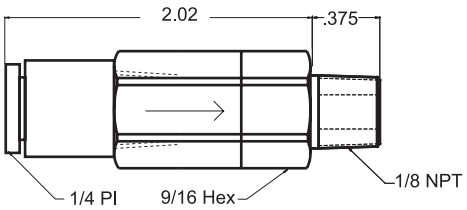

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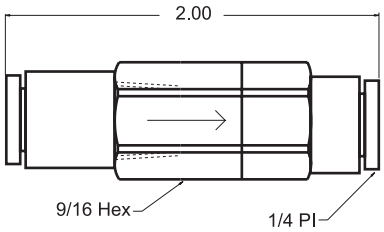


C050605

When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

Features

Designed for use in applications requiring an actuator to be locked in position, Pilot Operated Check Valves allow free flow from the input port through the output port. Supplying a pilot pressure to the valve allows flow in the opposite direction.

IMI Bimba's new Pilot Operated Check Valves are ideal for reliably holding an actuator position in a variety of applications. These rugged valves feature a 1/4 or 1/8 NPT output port which mounts directly on a cylinder, minimizing space requirements and easing installation. The input port swivels to accommodate valve alignment and contains a 1/4 push-in connection to speed tubing installation. 10-32 (F) and 1/4 push-in pilot ports are available to fit plumbing specifications.

Ideal for reliably holding an actuator position in a variety of applications.

- Swivel input port
- Direct cylinder mount
- 10-32 (F) or 1/4 push-in pilot ports
- Plated for corrosion resistance
- Low cracking pressure
- Thread sealant standard on output ports

Technical Data

Performance Data

Part Number	Temperature Range	Operating Pressure (PSI)	Maximum Supply Pressure (PSI)	C_v	Cracking Pressure (PSI)
POC-41-F POC-61-F	0° to 160°F	15 to 150	150	.23	10
POC-68-F POC-68-6	-40° to 240°F	0 to 150	150	.35	less than .1

Part Number	Flow Rate (scfm) 1-2		Flow Rate (scfm) 2-1	
	50 PSI	100 PSI	50 PSI	100 PSI
POC-41-F POC-61-F	2.8	5.2	3.1	5.7
POC-68-F POC-68-6	13	22	13	22

C_v per ANSI / (NFPA) T3.21.3

Materials

POC-41-F & POC-61-F

Body: Zinc Plated Brass & Anodized Aluminum
Internal Components: Brass, Stainless Steel & Polyamide
Seals: Buna-N
Spring: Stainless Steel

POC-68-F & POC-68-6

Body: Anodized Aluminum & Electroless Nickel Plated Brass
Stem: Brass
Seals: Buna-N
Spring: Stainless Steel
Media: Lubricated and non-lubricated air

Mounting Method

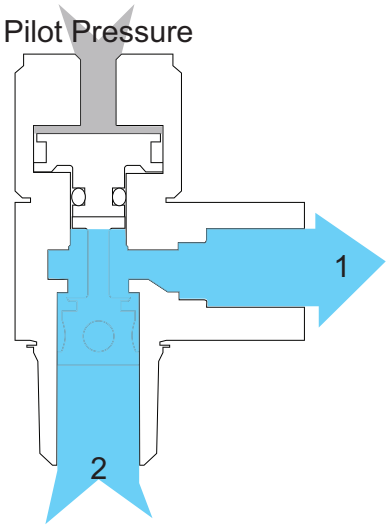
Part Number	Direct Cylinder Mount	Max. Installation Torque
POC-41-F	1/8 NPT	5.1 ft-lbs
POC-61-F	1/8 NPT	5.1 ft-lbs
POC-68-F	1/4 NPT	12 ft-lbs
POC-68-6	1/4 NPT	12 ft-lbs

Pilot Operated Check Valves Cross Section

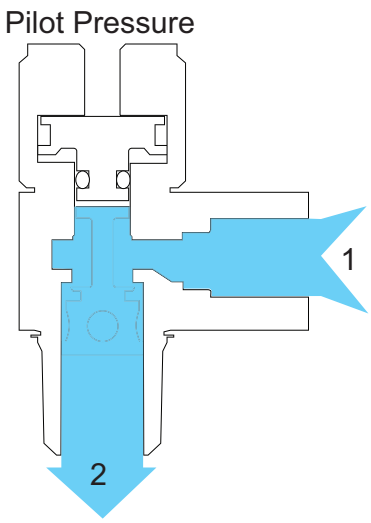
- To order standard product refer to Product Information listing.
- Optional seals available - contact factory.

Part Number	Input	Output	Pilot
POC-41-F	1/8 NPT (F)	1/8 NPT	10-32 (F)
POC-61-F	1/4 PI	1/8 NPT	10-32 (F)
POC-68-F	1/4 PI	1/4 NPT	10-32 (F)
POC-68-6	1/4 PI	1/4 NPT	1/4 PI

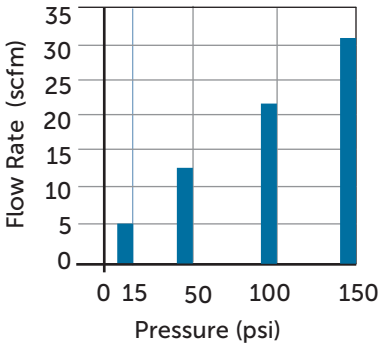
Pilot Pressure Applied



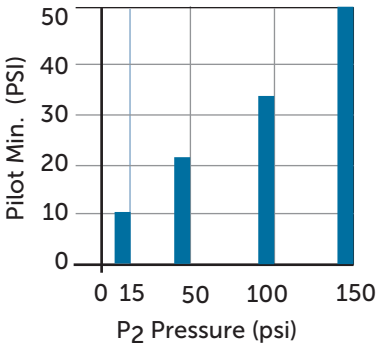
Free Flow



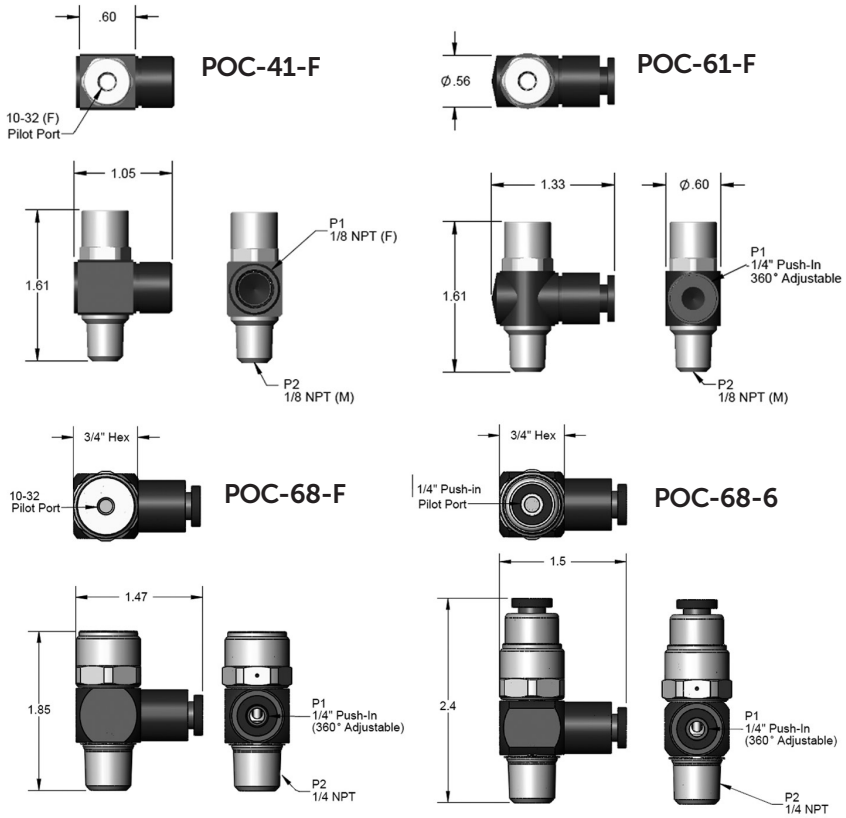
Pilot Operated Check Valves Flow Chart: POC-68-F



Pilot Operated Check Valves Pilot Pressure- POC-68-F



Pilot Operated Check Valve



Features

Flow controls and Needle valves are used to reduce the rate of flow in a leg of a system, consequently the restriction slows cylinder speed.

Finely threaded stems allow gradual adjustment of controlled flow to match system requirements.

Although the **basic function** is flow restriction, the fundamental difference between the two is the **needle valve** controls flow in both directions (bi-directional) and the **flow control valve** controls flow in only one direction (allowing free flow in the opposite direction).

Mini Flow Controls and Needle Valves are ideal for use with miniature cylinders

- Multiple porting options- including push-to-connect fittings
- Flow controls available in reverse flow
- Compact size
- Panel mountable
- Instrument quality collet knob

Technical Data

Performance Data

Temperature Range	Operating Pressure
-20° to 160° F	26" Hg to 125 psi

Identification

"O" Series "11" Series	Flow Control: Red Cap	Needle Valve: Yellow Cap
"700" Series Knob	Low Flow: Brass	2 to 1
Mini	Contact factory	

Mounting Method

Product Group	Panel Nominal Mounting Hole Dimension	Surface
"O"	31/64"	MB-1 or MB-1F
"11"	31/64"	MB-1 or MB-1F
"700" FC	11/32"	(3) .14 diam. holes
"700" NV	11/32"	N/A
Mini	N/A	Inline/ direct port mount
Banjo	N/A	Inline/ direct port mount

Banjo flow control mounting requirements:

Ø 3/8 min. x .10 max. deep counter-bore required when mounting to a cylindrical surface.

Nut(s) and lockwasher provided

Materials

"O" Series: Brass/ Black Dichromate, Brass/ Electroless Nickel, Stainless Steel, Nylon, Buna-N, Acetal collets

"11" Series: Aluminum/ Black Anodize, or Brass/ Electroless Nickel, Stainless Steel, Nylon, Buna-N, Acetal collets

"700" Series: Brass/ Electroless Nickel, Stainless Steel, Buna-N

Mini (non-mount): Brass, Acetal, Stainless Steel, Buna-N Banjo: Brass/ Electroless Nickel, Buna-N, Stainless Steel, PA6 (plastic)

Optional seals available- contact factory

IMI Bimba Flow Controls and Needle Valves are not leak tight.

Not to be used as a shut-off device.

Port Options

Type	Def.	Options
"O" Series	Port 1 Swivel Input	10-32 (F), 5/32 Push-in, 5/32 Push-in, 1/8 NPT, 1/4 Push-in, 170 Barb*
	Port 2 Output	10-32 (F)
"11" Series	Port 1 Input	5/32 Push-in, 1/8 NPT, 1/4 Push-in, 1/8 NPT (F)
	Port 2 Swivel Output	5/32 Push-in, 1/4 Push-in, 1/8 NPT (F) Additional options available- contact factory
"700" Series FC	Port 1 Input	10-32 (M)
	Port 2 Output	10-32 (F)
"700" Series NV	Port 1 Input	10-32 (M), 1/8 NPT
	Port 2 Output	10-32 (F)
Mini	Port 1 Input	10-32 (M), 1/8 NP
	Port 2 Output	10-32 (F)
Banjo	Port 1 Input	10-32 (M)
	Port 2 Output	10-32 (F), 5/32 Push-in

*170 Barb recommended for use with .170 ID PUR or .170 ID PE

Function

In both the flow control and needle valve a finely threaded stem allows gradual adjustment of the amount of **controlled flow** passing through the valve. Flow enters port 1, travels through an orifice sized by the tapered stem and out port 2. The flow control features a by-pass check which allows rapid free flow out port 1.

IMI Bimba offers a **variety of configurations** with several flow rate options. Choose from twenty-five needle valves and thirty-nine flow controls- the multiple porting options virtually eliminate the need for additional

Flow Control & Needle Valve

Product	Flow Rate (scfm)		C_v	Cracking Pressure (FC Only)	Function Code
	50 PSI	125 PSI			
"O" Series	4.4	9.4	.13	.1 psi	MO, BI
"11" Series	12.0	27.0	.29	.1 psi	MO, BI
"700" Series	3.2	6.2	.09	.1 psi	MO, BI
Mini (FC & NV Series)	3.3	6.8	.10	.1 psi	MO, BI
Banjo Flow Control	4.0	8.7	.11	.1 psi	MO

Performance data operating full open at 125 psi

Flow Control: Reverse Control Flow (from 2-1)

Product	Flow Rate (scfm)		C_v	Cracking Pressure (FC Only)	Function Code
	50 PSI	125 PSI			
Banjo	5.1	11.3	.13	.1 psi	MI
"11" Series	12.0	27.0	.29	.1 psi	MI

C_v per ANSI / (NFPA) T3.21.3

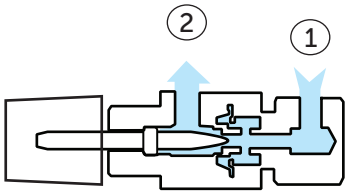
Function Code Flow (from 2-1)

Code	Function	Controlled Flow	Free Flow
MO	*Meter Out	1 to 2	2 to 1
MI	Meter In	2 to 1	1 to 2
BI	Meter Bi-Directional	metered flow in both directions	N/A

*Standard product

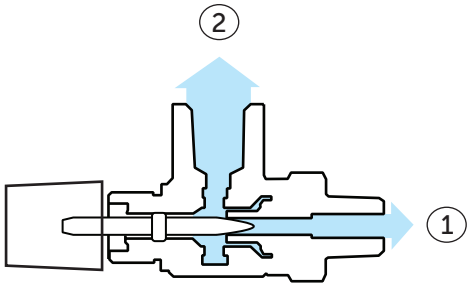
Flow Control / Needle Valve Cross Section

- Flow Control Valve illustrations represent the controlled flow path; free flow is 2 to 1.
- Standard Flow Control Valves meter out, flowing from 1 to 2.
- Note: Needle Valves control flow in both directions.



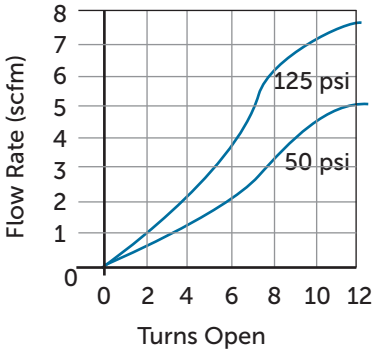
Free Flow

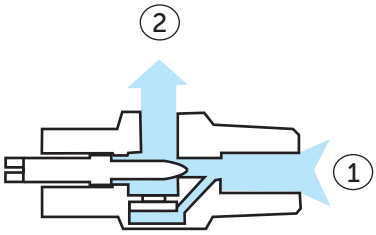
"O" Series
Flow Control



"11" Series
Needle Valve

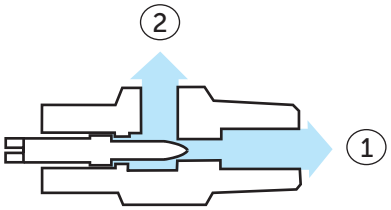
"700" Series Flow Control Turns to Open (gen. flow)





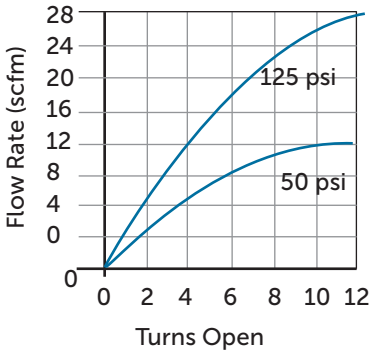
Free Flow

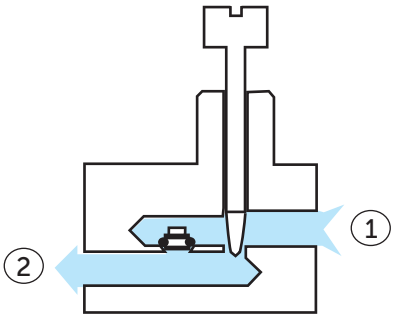
Mini
Flow Control



Mini
Needle Valve

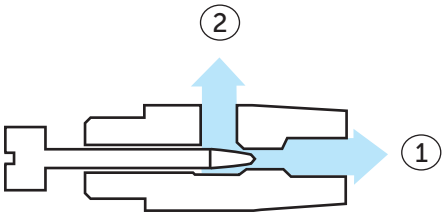
"11" Series Flow Control Turns to Open





Free Flow

"700" Series
Flow Control



"700" Series
Needle Valve

Instrument quality panel knob now available for all "700" Series Valves -prevents excess seat stress

Product Information

- To order standard product refer to Product Information listing.
- To order "700" Series valves with instrument quality panel knob- add a -PK suffix to the part number.
- Optional seals available- contact factory.
- Contact factory for reverse flow applications.

Flow Controls

"11" Series

Part Number	Input	Output
PFC11-14	1/8 NPT (F) 10-32(F)	1/8 NPT (F)
PFC11-16		1/4 Push-in
PFC11-17		5/32 Push-in
PFC11-44	1/8 NPT (F)	10-32(F)
PFC11-46		1/4 Push-in
PFC11-47		5/32 Push-in
PFC11-64	1/8 NPT (F)	10-32(F)
PFC11-66		1/4 Push-in
PFC11-67		5/32 Push-in
PFC11-74	1/8 NPT (F)	
PFC11-76		1/4 Push-in
PFC11-77		5/32 Push-in

Reverse Flow

Part Number	Input	Output
PFC11R-14	1/8 NPT / 10-32 (F)	1/8 NPT (F)
PFC11R-16		1/4 Push-in
PFC11R-17		5/32 Push-in
PFC11R-44	1/8 NPT (F)	1/8 NPT (F)
PFC11R-46		1/4 Push-in
PFC11R-47		5/32 Push-in
PFC11R-64	1/4 Push-in	1/8 NPT (F)
PFC11R-66		1/4 Push-in
PFC11R-67		5/32 Push-in
PFC11R-74	5/32 Push-in	1/8 NPT (F)
PFC11R-76		1/4 Push-in
PFC11R-77		5/32 Push-in

"700" Series - panel knob available

Part Number	Input	Output
C070501 low	10-32 (F)	10-32 (F)
C070503 gen.	10-32 (F)	10-32 (F)

Needle Valves

"O" Series

Part Number	Input	Output
PNV0-0	10-32 (F)	10-32 (F)
PNV0-1	1/8 NPT / 10-32(F)	10-32 (F)
PNV0-2	10-32 (F) Elbow	10-32 (F)
PNV0-3	10-32 (F) Tee	10-32 (F)
PNV0-4	1/8 NPT (F)	10-32 (F)
PNV0-5	170 Barb	10-32 (F)
PNV0-6	1/4 Push-in	10-32 (F)
PNV0-7	5/32 Push-in	10-32 (F)
PNV0-1/8	1/8 NPT / 10-32 (F)	10-32 (F)

"11" Series

Part Number	Input	Output
PNV11-14	1/8 NPT (F) / 10-32 (F)	1/8 NPT (F)
PNV11-16		1/4 Push-in
PNV11-17		5/32 Push-in
PNV11-44	1/8 NPT (F)	1/8 NPT (F)
PNV11-46		1/4 Push-in
PNV11-47		5/32 Push-in
PNV11-64	1/4 Push-in	1/8 NPT (F)
PNV11-66		1/4 Push-in
PNV11-67		5/32 Push-in
PNV11-74	5/32 Push-in	1/8 NPT (F)
PNV11-76		1/4 Push-in
PNV11-77		5/32 Push-in

"700" Series - panel knob available

Part Number	Input	Output
C070301 low	10-32 (M)	10-32 (F)
C070303 gen.	10-32 (M)	10-32 (F)
C070601 low	1/8 NPT	10-32 (F)
C070603 gen.	1/8 NPT	10-32 (F)

Note: The Low Flow option flows 1.2 scfm at 5 turns and 125 psi.

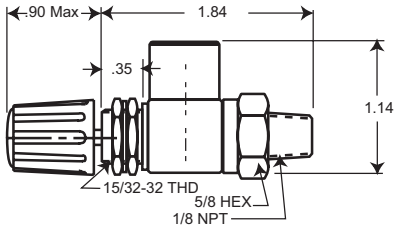
The General Flow option provides increased flow with fewer needle turns: 3.4 scfm at 5 turns and 125 psi.

Full open, both valves offer the same flow rate.

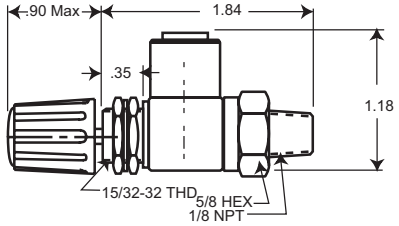
Mini

Part Number	Input	Output
NV-32	10-32 (M)	10-32 (F)
NV-52	1/8 NPT	10-32 (F)

“11” Series

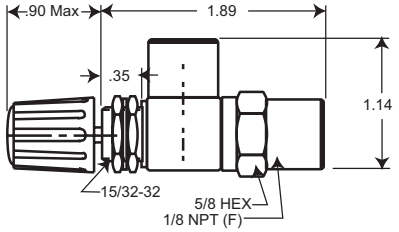


“-14” Porting

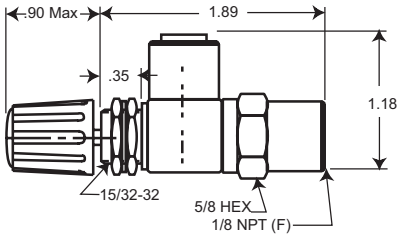


“-16” Porting

“-17” Porting

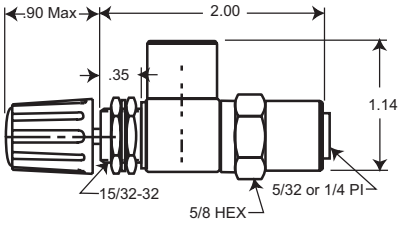


“-44” Porting



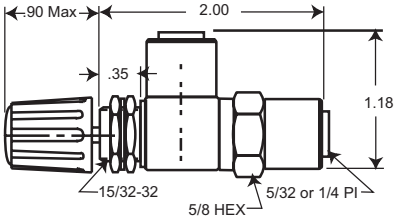
“-46” Porting

“-47” Porting



“-64” Porting

“-74” Porting



“-66” Porting

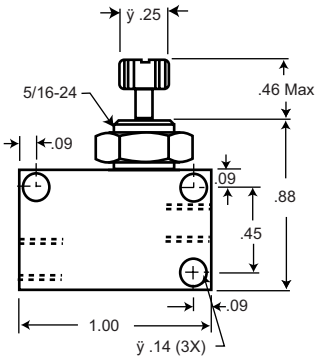
“-67” Porting

“-76” Porting

“-77” Porting

When design makes a dimension critical- contact factory for confirmation.
All dimensions shown subject to change without notice.

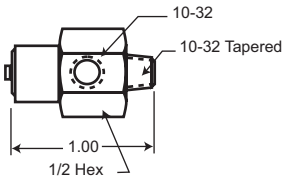
“700” Series - Flow Control



Product Number

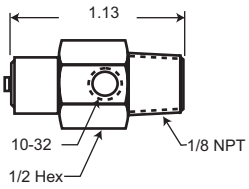
C070501 low
C070503 general

Mini - Needle Valves



Product Number

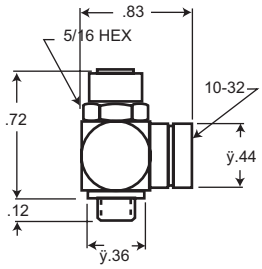
NV-32



Product Number

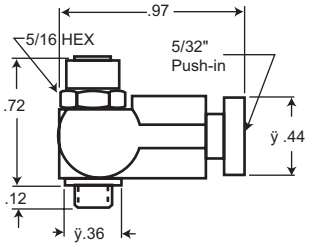
NV-52

Banjo - Flow Control



Product Number

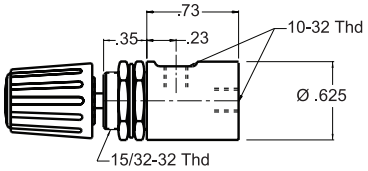
BFC-32
BFCR-32



Product Number

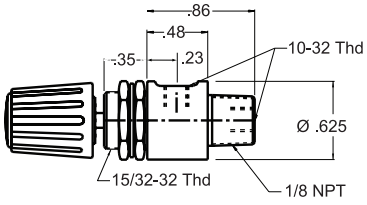
BFC-32P
BFCR-32P

“O” Series - Needle Valves



Product Number

PNVO-O



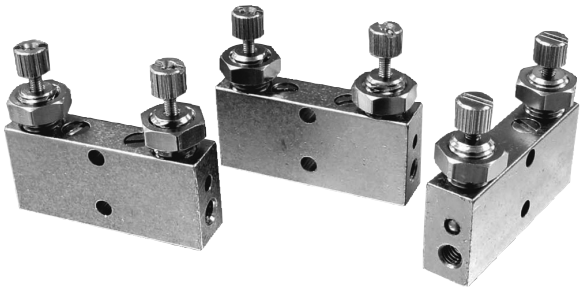
Product Number

PNVO-1/8

Features

This unique component replaces two flow controls in a pneumatic system and allows the adjustment of cylinder extension and retraction from one location.

- 10-32 (F) ports
- Low cracking pressure
- Slotted knob for precision control
- Mounting versatility
- Compact size



Technical Data

Performance Data

Temperature Range	Operating Pressure	Part Number	C_v Full Open	Flow Rate (scfm)		Cracking Pressure
				50 psi	125 psi	
-20° to 160° F	0 to 125 PSI	C070505	.07	2.75	6.2	.1 PSI

C_v per ANSI / (NFPA) T3.21.3

Materials

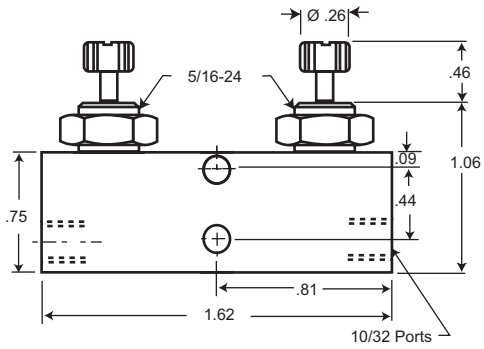
Brass/ Electroless Nickel, Stainless Steel, Buna-N

Function

The cylinder may be plumbed to either port of the Pneumadyne Double Flow Control. The adjustment knob closest to the cylinder controls the input or extension speed, the knob furthest from the cylinder controls the exhaust or retraction speed.

How To Order

- To order standard product use part number C070505.



C070505

Features

IMI Bimba's "0" & "11" Series Pressure Regulators are used to maintain a preset downstream pressure. Relieving and non-relieving styles are available to accommodate application requirements.

To ease regulator installation, porting options include 10-32 UNF, 1/8 NPT, barbs and push-in connections. For alignment purposes, the "0" Series features a swivel input and the "11" Series features a swivel output port.

The "11" Series can be mounted on a manifold allowing the consolidation of components with varying output pressures on a common pressure source (see figure C - System 11). IMI Bimba's micro gauge can be mounted on the "11" Series regulator with an extended gauge port providing an on-site pressure indicator.

Choose from a knurled knob or an Acetal panel knob for precision adjustment. Regulator components are anodized or

- Mounting versatility
- Knurled knob or Instrument quality knob
- Push-to-connect fittings available
- "O" Series input port rotates 360º
- "11" Series output port rotates 360º
- Direct gauge mount to output (11 Series)

Technical Data

Performance Data

Temperature Range	Operating Pressure	Max. Input Pressure	C_v Full Open	Flow Rate (scfm)	
				50 psi	125 psi
-20°F to 160°F	30 psi to 125 psi	125 psi	.27	9.8	22

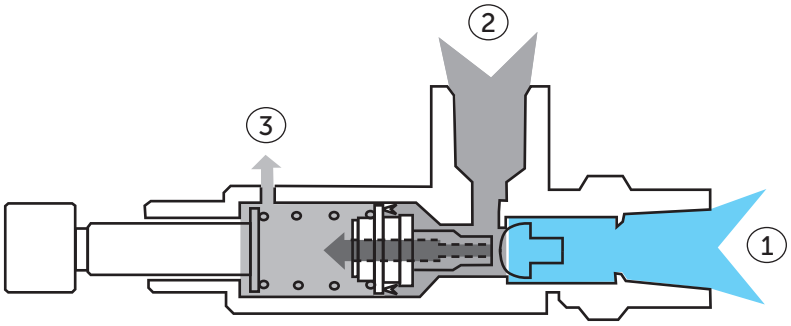
Cv per ANSI / (NFPA) T3.21.3

Materials

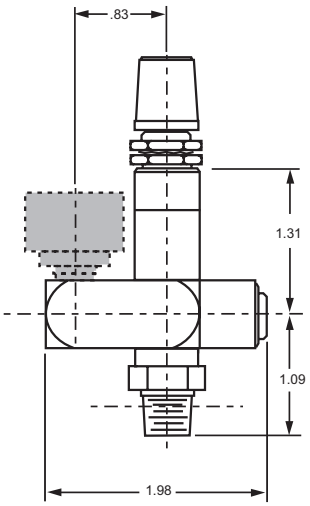
Aluminum/ Black Anodize, Brass and Steel/ Electroless Nickel, Brass/ Black Dichromate, Buna-N, Stainless Steel, Acetal

Pressure Regulator Cross Section

Figure A



"11" Series Regulator



The "11" Series Regulator with extended gauge port housing and micro gauge installed (to prevent damage the gauge is packaged and sold separately).

Function

Relieving Regulator

Figure A - When downstream pressure exceeds the set level the poppet is seated -blocking input flow 1. The back pressure flows in output 2 lifting the Buna-N cup seal and piston allowing air to pass through the hollow stem and out the exhaust port 3.

Non-relieving Regulator

The non-relieving regulator flow path- input 1 to output 2- is the same as the relieving regulator, however the non-relieving regulator contains a solid piston that does not permit backflow at output port 2 to be exhausted.

Warning: for safety reasons only non-relieving regulators are recommended for use with liquids and with adequate means of downstream relief.

Product Information

- To order Pressure Regulators use the Product Information listing to select part number.
- To order a gauge ready regulator, add a -G suffix to the part number.
- Custom Products: Contact factory for applications requiring 1/8 NPT male or 1/4 NPT male output port

"11" Series Regulators

Relieving

Type	Part Number	Input	Output
Knurled Knob	R11-RK-14	1/8 NPT	1/8 NPT (F)
	R11-RK-16		1/4 Push-in
	R11-RK-17		5/32 Push-in
	R11-RK-44	1/8 NPT (F)	1/8 NPT (F)
	R11-RK-46		1/4 Push-in
	R11-RK-47		5/32 Push-in
	R11-RK-64	1/4 Push-in	1/8 NPT (F)
	R11-RK-66		1/4 Push-in
	R11-RK-67		5/32 Push-in
	R11-RK-74	5/32 Push-in	1/8 NPT (F)
	R11-RK-76		1/4 Push-in
	R11-RK-77		5/32 Push-in
Panel Knob	R11-RP-14	1/8 NPT	1/8 NPT (F)
	R11-RP-16		1/4 Push-in
	R11-RP-17		5/32 Push-in
	R11-RP-44	1/8 NPT (F)	1/8 NPT (F)
	R11-RP-46		1/4 Push-in
	R11-RP-47		5/32 Push-in
	R11-RP-64	1/4 Push-in	1/8 NPT (F)
	R11-RP-66		1/4 Push-in
	R11-RP-67		5/32 Push-in
	R11-RP-74	5/32 Push-in	1/8 NPT (F)
	R11-RP-76		1/4 Push-in
	R11-RP-77		5/32 Push-in

Accessories

Part Number	Input	Output
RLN-40	Locking Nut	-
PMG-100	Micro Gauge	0-100 psi
PMG-160	Micro Gauge	0-160 psi
PMG-60	Micro Gauge	0-60 psi

"11" Series

Example: Regulator "11" Series , Relieving with Knurled Knob, 1/8 NPT /10-32 (F) Input x 1/8 NPT (F) Output

R 11 - R K - 1 4

Model
R= Regulator

Series
11= "11" Series

Function
R= Relieving

Actuator Style
K= Knurled Knob
P= Panel Knob

"O" Series Input
1= 1/8 NPT / 10-32 (F)
2= 10-32 (F) Elbow
3= 10-32 (F) Tee
4= 1/8 NPT (F)
5= 170 Barb*
6= 1/4 Push-in
7= 5/32 Push-in

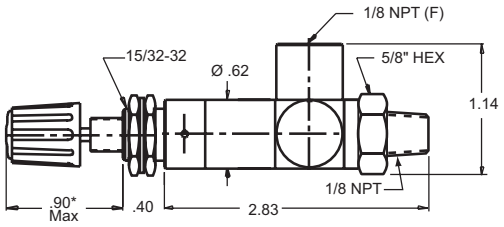
"11" Series input
1= 1/8 NPT / 10-32 (F)
4= 1/8 NPT (F)
6= 1/4 Push-in
7= 5/32 Push-in

"11" Series Output
4= 1/8 NPT (F)
6= 1/4 Push-in
7= 5/32 Push-in

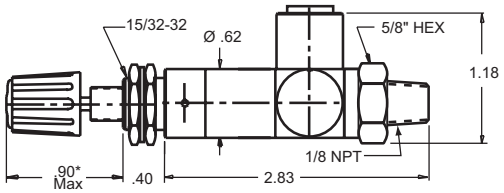
***"O" Series Output**
10-32 (F) ONLY
no designation

*170 barb- recommended for use with .170 ID PUR or .170 ID PE tubing

“11” Series - Shown with Panel Knob

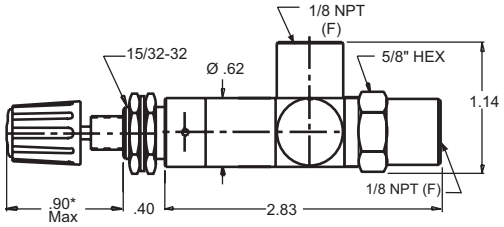


“-14” Porting

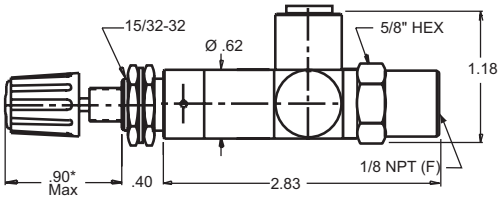


“-16” Porting

“-17” Porting

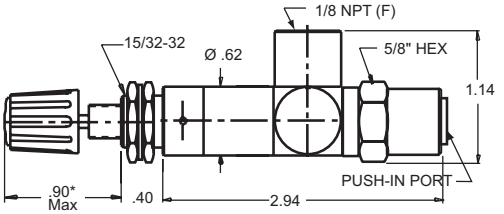


“-44” Porting



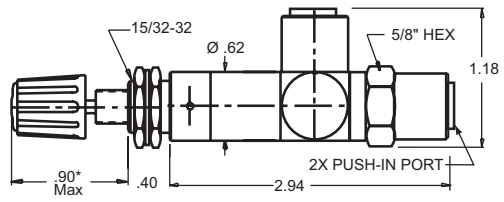
“-46” Porting

“-47” Porting



“-64” Porting

“-74” Porting



“-66” Porting

“-67” Porting

“-76” Porting

“-77” Porting

*.74 Max for knurled knob- all regulators

Features

In-line

The 570 In-line Quick Exhaust offers the convenience of in-line plumbing with a 1/8 NPT output and 1/8 NPT(F) input. Six exhaust holes located on either side relieve large amounts of flow in a minimal amount of time. It is ideal for allowing rapid cylinder return without air traveling back through the system.

"11" Series- Right Angle

IMI Bimba's "11" Series Quick Exhaust Valve allows rapid cylinder return without permitting air to travel back through the system. There are sixty possible porting configurations incorporating the standard IMI Bimba "11" Series design with the addition of the 1/4 NPT male and 1/8 NPT male output ports. The exhaust port options include the 1/8 NPT female for use with a sintered bronze or industrial muffler, the 1/4-28 UNF female for use with a speed control needle (at right), and the 1/4" push-to-connect fitting that is specially designed with a captive collet that is retained even when tubing is disconnected (recommended for use with 1/4 OD Polyurethane (95A) tubing).

- In-line or Right Angle
- Allows rapid cylinder return
- Multiple porting options
- Relieve 100 in^3 in 2 seconds
- Male pipe thread for direct cylinder mount
- Threaded or controllable exhaust port
- Swivel cylinder port
- 1/4" push-to-connect exhaust port is specially designed with a captive collet that is retained even when tubing is disconnected

Technical Data

Performance Data

Part Number	Temperature Range	Operating Pressure	C_v	Flow Rate (scfm)		Fill Time sec/ in^3 0-90 PSI	Exhaust Time sec/ in^3 100-10
				50 psi	125 psi		
C570501	-20°F to 160°F	0-125 psi	.20	7.3	14.7	.02	.01
QE11-*-**			.20	8.2	20.2	.02	.02

*Not recommended for use with cylinders larger than 1" diameter; stroke up to 12".

Flow information supplied for flow path 1-2.

Cv per ANSI / (NFPA) T3.21.3

Materials

In-line: Brass/ Electroless Nickel, Buna-N

Right Angle: Aluminum/ Black Anodize, Brass/ Black Dichromate, Buna-N, Acetal, Stainless Steel, Brass/ Electroless Nickel

Quick Exhaust Cross Section

Figure A
Fill

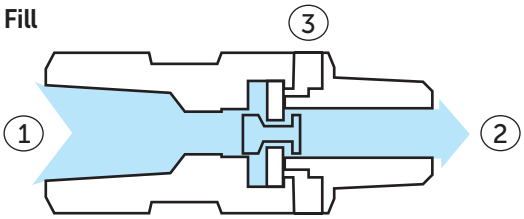


Figure B
Exhaust

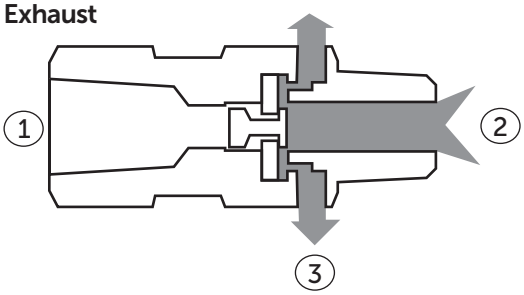


Figure C
Fill

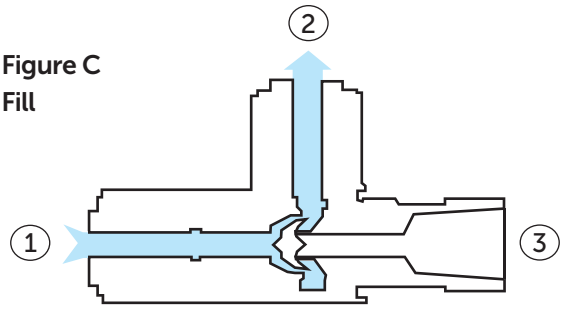
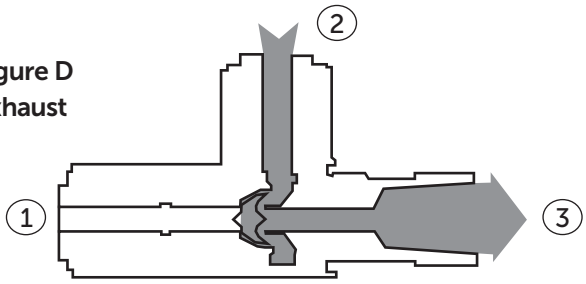
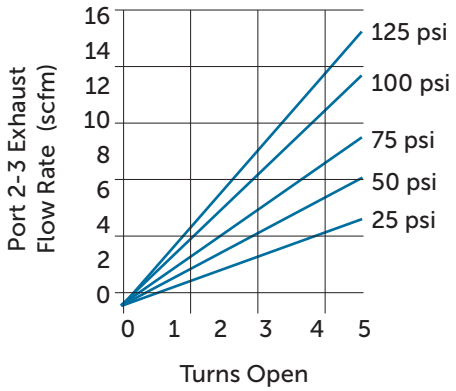


Figure D
Exhaust



Type	Port Options	
	Definition	Options
Inline	Port 1 Input	1/8 NPT (F)
	Port 2 Output	1/8 NPT
	Port 3 Exhaust	Non-Threaded
	RO-RK-4	1/8 NPT (F)
Right Angle	Port 1 Input	10-32 (F) 1/8 NPT / 10-32 (F) 1/8 NPT (F) 1/4 Push-in 5/32 Push-in
	Port 2 Swivel Output	10-32 (M) 1/8 NPT 1/8 NPT (F) 1/4 Push-in 5/32 Push-in 1/4 NPT
	Port 3 Exhaust	10-32 (F) 1/8 NPT (F) 1/4-28 UNF 1/4 Push-in

Quick Exhaust "11" Series with Locking Speed Control Needle



Function

In-Line Function

As pressure is applied through input port 1 (figure A) the poppet and seal shift forward blocking the exhaust port and allowing flow through output port 2.

When pressure is removed from input port 1 (figure B) back flow at port 2 unseats the poppet and allows flow through exhaust port 3.

"11" Series Function

As pressure is applied through input port 1 (figure C) the poppet shifts forward blocking the exhaust port and allowing flow through output port 2.

When pressure is removed from input port 1 (figure D) back flow at port 2 unseats the poppet and allows flow through exhaust port 3.

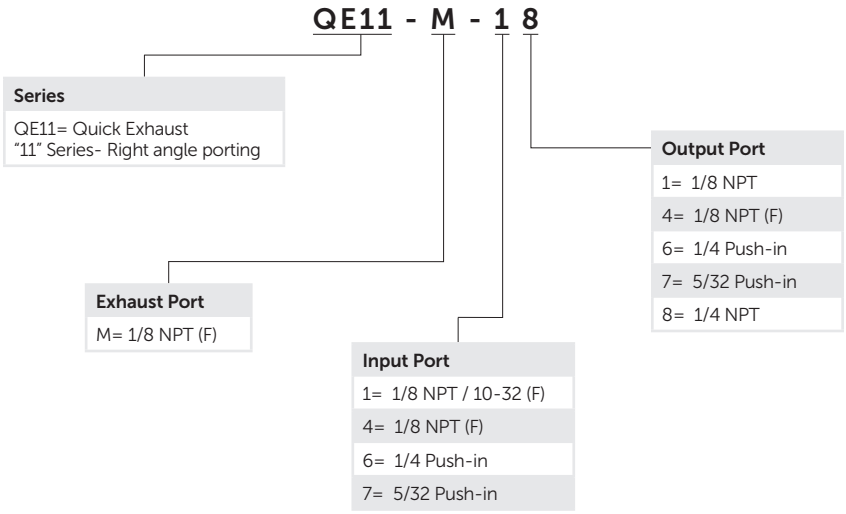
Features

- To order “11” Series Quick Exhaust select product number from Product Information listing or use Product Number Diagram to develop required component configuration.
- QE-MS Sintered Bronze Muffler 1/8 NPT for use with QE-M-xx.
- QE-MI Industrial Muffler 1/8 NPT for use with QE-M-xx.
- Contact factory for custom porting configurations.

1. Replace the “*” in the Product Information listing with one of the exhaust port codes listed below:
   - -M- for 1/8 NPT (F)
   - -S- for 1/4-28 UNF (F)
   - -P- for 1/4 push-to-connect
2. Select from the Additional Accessories (sold separately)

Example: Quick Exhaust, “11” Series, 1/4-28 UNF (F) thread for use with Speed Control Needle (sold separately), 1/8 NPT /10-32 (F) input, 1/4 NPT output.

“11” Series



In-line

Part Number	Input	Output
C570501	1/8 NPT (F)	1/8 NPT

“11” Series Right Angle

Part Number	Input	Output
QE11-*-11	1/8 NPT	1/8 NPT
QE11-*-14	1/8 NPT	1/8 NPT (F)
QE11-*-16	1/8 NPT	1/4 Push-in
QE11-*-17	1/8 NPT	5/32 Push-in
QE11-*-18	1/8 NPT	1/4 NPT
QE11-*-41	1/8 NPT (F)	1/8 NPT

“11” Series Right Angle (cont’d)

Part Number	Input	Output
QE11-*-44	1/8 NPT (F)	1/8 NPT (F)
QE11-*-46	1/8 NPT (F)	1/4 Push-in
QE11-*-47	1/8 NPT (F)	5/32 Push-in
QE11-*-48	1/8 NPT (F)	1/4 NPT
QE11-*-61	1/4 Push-in	1/8 NPT
QE11-*-64	1/4 Push-in	1/8 NPT (F)
QE11-*-66	1/4 Push-in	1/4 Push-in
QE11-*-67	1/4 Push-in	5/32 Push-in
QE11-*-68	1/4 Push-in	1/4 NPT
QE11-*-71	5/32 Push-in	1/8 NPT
QE11-*-74	5/32 Push-in	1/8 NPT (F)
QE11-*-76	5/32 Push-in	1/4 Push-in
QE11-*-77	5/32 Push-in	5/32 Push-in
QE11-*-78	5/32 Push-in	1/4 NPT

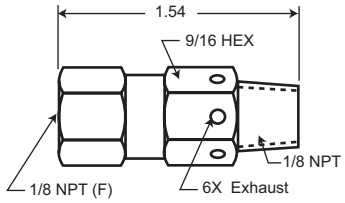
Port Designation

Typical drawings illustrate the overall package size of the Quick Exhaust “11” Series valve. There are sixty (60) possible configurations- contact factory for additional drawings.

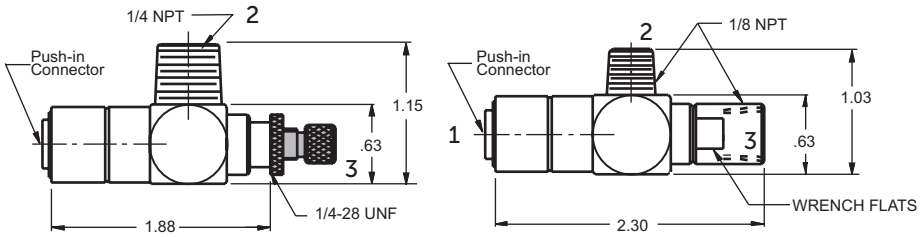
1	Input
2	Cylinder Port
3	Exhaust

C570501

In-Line



Right Angle



When design makes a dimension critical- contact factory for confirmation.

All dimensions shown subject to change without notice.

Additional Accessories

Part Number	Description
QE-MS	1/8 NPT Sintered Bronze Muffler
QE-MI	1/8 NPT Industrial Muffler

In-Line

Part Number	Input	Output
C570501	1/8 NPT (F)	1/8 NPT

“11” Series Right Angle

Part Number	Input	Output
QE11-*-11	1/8 NPT	1/8 NPT
QE11-*-14	1/8 NPT	1/8 NPT (F)
QE11-*-16	1/8 NPT	1/4 Push-in
QE11-*-17	1/8 NPT	5/32 Push-in
QE11-*-18	1/8 NPT	1/4 NPT
QE11-*-41	1/8 NPT (F)	1/8 NPT
QE11-*-44	1/8 NPT (F)	1/8 NPT (F)
QE11-*-46	1/8 NPT (F)	1/4 Push-in
QE11-*-47	1/8 NPT (F)	5/32 Push-in
QE11-*-48	1/8 NPT (F)	1/4 NPT
QE11-*-61	1/4 Push-in	1/8 NPT
QE11-*-64	1/4 Push-in	1/8 NPT (F)
QE11-*-66	1/4 Push-in	1/4 Push-in
QE11-*-67	1/4 Push-in	5/32 Push-in
QE11-*-68	1/4 Push-in	1/4 NPT
QE11-*-71	5/32 Push-in	1/8 NPT
QE11-*-74	5/32 Push-in	1/8 NPT (F)
QE11-*-76	5/32 Push-in	1/4 Push-in
QE11-*-77	5/32 Push-in	5/32 Push-in
QE11-*-78	5/32 Push-in	1/4 NPT

Features

The Bleed Valve offers an easy solution for the release of excess pressure from a system. This compact and durable valve has been IMI Bimba tested to assure dependability and maximum flow.

- Release 100 in^3 in 4 seconds
- Durable construction- available with standard pipe thread and 10-32 thread

Technical Data

Performance Data

Temperature Range	Operating Pressure	Part Number	Mount	Force to Actuate		Exhaust Time sec/ in^3 100-10 psi
				50 psi	125 psi	
-20° to 160° F	Range: 0 to 125 PSI	PBV-10/32	10-32 UNF (5/16" hex)	3 lbs	3 3/4lbs	.06
		PBV-2	1/8 NPT (7/16" hex)	3 lbs	6 1/2 lbs	.04
		PBV-4	1/4 NPT (9/16" hex)			

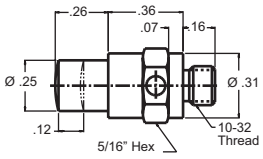
C_v per ANSI / (NFPA) T3.21.3

Materials

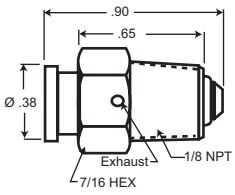
Brass/ Electroless Nickel, Buna-N, Stainless Steel

Function

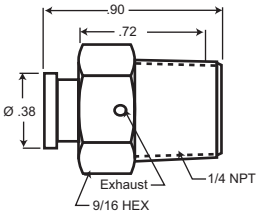
When the button is actuated the stem slides forward and air flow is vented through a non-threaded exhaust port located near the actuator. This valve makes it possible to release pressurized air at a rate of 100 in^3 in 4 seconds.



PBV-10/32



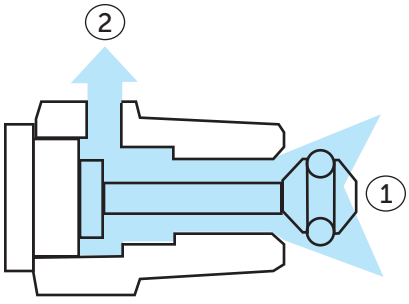
PBV-2



PBV-4

How It Works

Bleed Valve Cross Section



How To Order

To order standard product refer to Performance Data listing (sold separately).

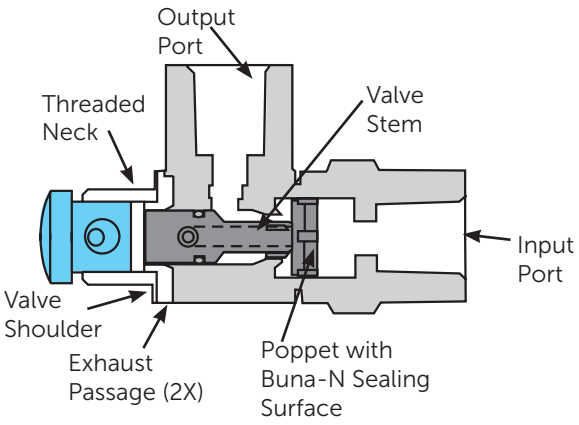
All dimensions and specifications are subject to change.

Control Valves

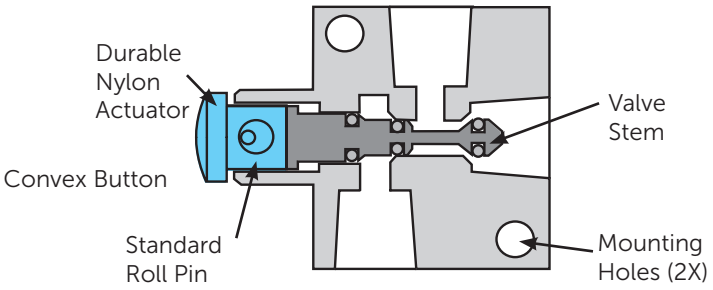
The basic pneumatic valve is a mechanical device consisting of a body and a moving part (poppet and/or stem) which connects or disconnects passages within the body.

IMI Bimba's complete line of miniature manually operated 2-Way, 3-Way & 4-Way pneumatic valves offer a superior design constructed from high quality materials which result in an extremely long cycle

Poppet Valve



Stem Valve



Directional Control Valve Profile

	"O" Series	"3" Series	"11" Series	"1O" Series	"2O" Series	"22" Series	"20O" Series
2-Way	•		•	•	•		•
3-Way	•	•	•	•	•	•	•
4-Way 3 Port 2 Position							
4-Way 5 Port 2 Position					•	•	
4-Way 5 Port 3 Position						•	
Normally Closed	•	•	•	•	•	•	•
Open Crossover							•
Closed Crossover	•	•	•	•	•		
Ported Exhaust		•				•	
Actuator Options	•	•	•		•	•	•
Porting Options	•	•	•	•	•		

	"300" Series				"400" Series					"45" Series		
	10-32	Rear	1/8 NPT	Fully Ported	Standard	Rear	Fully Ported	Side	3-Position	"4" Series	10-32	1/8 NPT
2-Way	•	•	•		•	•			•			
3-Way	•	•	•	•	•	•	•	•	•			
4-Way 3 Port 2 Position										•	•	•
4-Way 5 Port 2 Position												
4-Way 5 Port 3 Position												
Normally Closed	•	•	•	•	•	•	•	•				
Open Crossover	•	•	•	•	•	•	•	•		•	•	•
Closed Crossover												
Ported Exhaust				•			•	•			•	•
Actuator Options	•	•	•	•	•	•	•	•		•	•	•
Porting Options									•	•	•	•

Actuators

IMI Bimba push button and toggle actuators are specially designed and molded from a high quality nylon material with a long service life (all actuators are included with the valve).

IMI Bimba buttons (“A” Style) are convex rather than concave, a shape with many advantages. Ideal for medical and dental applications, convex buttons are easier to keep clean- no well to trap liquids or debris. The convex shape also ensures a full contact fit for smooth actuation when used with cam operators. A slip resistant texture on the surface of the button provides grip for manual operation and guide ribs on the stem of the button ensure proper alignment. This prevents it from disrupting the exhaust path while absorbing moderate sideloads.

IMI Bimba toggles are available for momentary (“F” Style) or detented (“H” Style) actuation.

IMI Bimba actuators are retained by a specially designed stainless steel roll pin which expands to the diameter of the pin hole and holds the actuator in place. The service life of our actuator is extended by the use of the roll pin producing a fit that will not come out of place.

- Push Button
  - » Part number designation “A” Style
  - » Nylon- seven colors (black as standard)
- Momentary Toggle
  - » Part number designation “F” Style
  - » Nylon- seven colors (black as standard)
- Detented Toggle
  - » Part number designation “H” Style
  - » Nylon- seven colors (black as standard)
- Control Knob (Panel Knob)
  - » Flow Control- Black acetal knob with red cap
  - » Needle Valve- Black acetal knob with yellow cap
  - » Regulator- Black acetal knob with black cap
- Control Knob (Knurled Knob)
  - » Regulator- Brass with Electroless Nickel plating
  - » “700” Series Low Flow- Brass
  - » “700” Series General Flow- Brass with Electroless Nickel plating
  - » Double Flow Control- Brass with Electroless Nickel plating

Color Code Information

To order **colored actuators** simply specify the color, by code, as a “-code#” suffix following the part number. No code number is required for standard black actuators.

2 = Black
3 = Red
4 = Blue
5 = Green
6 = Yellow
8 = Gray

All catalog product dimensions are given in inches unless otherwise specified

Flow Rates Determination

All IMI Bimba Cv and flow rates are determined in accordance with ANSI / (NFPA) T3.21.3, Pneumatic fluid power - Flow rating procedure and reporting method - For fixed orifice components.

IMI Bimba has developed data to support system designs, designate operating pressures and determine response times, by using Cv (flow coefficient), flow rates, and fill times. Cv is useful for system sizing and as a component comparison standard, particularly when all Cv's are provided by the same manufacturer. Flow rates are determined for input pressure up to 125 psi and output pressures from atmospheric to the input pressure.

Fill / exhaust times provide a fast, accurate means of establishing cylinder response times.

Time to fill or exhaust a given volume through an orifice or pneumatic device is an exponential function. However, times to fill or exhaust various volumes, through a given system, have a linear relationship; i.e. time to fill 10 in^3 x time to fill 1 in^3 etc.

IMI Bimba uses relatively large tank volumes to measure fill/ exhaust times and measures from 0-90 psi with 100 psi input pressure and 100-10 psi exhaust to atmosphere. A per in^3 time is easily and accurately determined and the 90% parameter simulates a reasonable cylinder reaction without waiting for the infinite (theoretical) 100% fill or exhaust times.

All IMI Bimba components are designed and tested for use with air- or use with other media, consider materials of

Mounting Hole Dimension

Description	Nominal Hole Diameter
"O" Series	31/64"
"3" Series	31/64"
11" Series	31/64"
"200 & 300" Series	31/64"
"400" Series	31/64"
Sub-Micro Valve	
Button	17/64"
Toggle	21/64"
3 Position Toggle Valve	3/4"
6 Position Selector Valve	41/64"
Heavy Duty Toggle Valve	5/8"
("4" Series)	
"4" & "45" Series	31/64"

Description	Nominal Hole Diameter
Flow Control	31/64"
Needle Valves	31/64"
"O" & "11" Series	31/64"
"700" Series 21/64"	31/64"
Pressure Regulators	31/64"
Quick Exhaust "11" Series	31/64"
Air Operated Electric Switch	31/64"
Oil Tight Actuators	
30mm	1-3/16"

Fluid Power Graphic Symbols

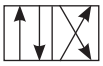
Directional Control

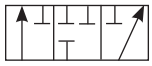

2WNC


2WNO


3WNC

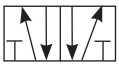

3WNO

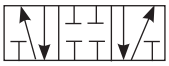

4-Way
2-Position


2-Way
3-Position
Closed center


3-Way
3-Position
Open center


3WNC
Solenoid
Actuator

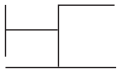

4-Way
5 Ports 2-Position
Exhaust center


4-Way
5 Ports 3-Position
Closed center

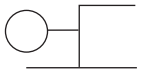

4-Way
5 Ports 3-Position
Exhaust center

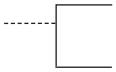

2WNC
Solenoid
Actuator

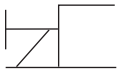
Actuators


Push Button

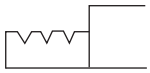

Toggle

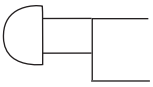

Cam Operated


Pilot Operated

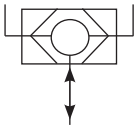

Solenoid Operated
"10" Series


Pilot and Solenoid
"20" Series

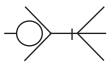

3-Position Detent


Palm Button

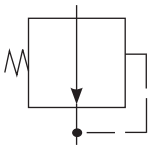
Circuit Control

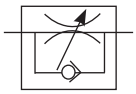

Shuttle Valve

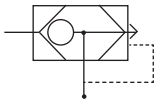

Needle Valve


Quick Disconnect


Check Valve


Regulator


Flow Control


Quick Exhaust

Force to Actuate

Valve Accessory Part Number

	CA-1	CA-4	HDO	PBF-X PBR-X	TA-1
	Lbs	Lbs	Lbs	Lbs	Lbs
"O" Series; NO					
50 psi	1.50	.75	6.25	3.20	1.25
125 psi	2.50	1.00	8.75	5.30	2.25
"O" Series; NC					
50 psi	1.50	.75	6.25	3.20	1.25
125 psi	2.75	1.00	9.25	5.70	2.25
"3" Series					
50 psi	1.75	.75	6.50	3.50	1.50
125 psi	3.00	1.00	9.50	6.10	2.50
"11" Series; NO					
50 psi	3.75	1.25	10.50	7.60	3.00
125 psi	5.25	2.00	14.50	11.00	4.50
"11" Series; NC					
50 psi	2.00	.75	6.75	3.80	1.50
125 psi	3.50	1.25	10.75	7.20	3.00
"200" Series					
50 psi	1.00	.50	5.00	1.90	1.00
125 psi	1.75	.75	6.75	3.20	1.25
"300" Series					
50 psi	1.25	.50	5.50	2.50	1.00
125 psi	1.50	.75	6.75	3.20	1.25
"400" Series					
50 psi	1.75	.75	6.50	3.40	1.50
125 psi	2.50	1.00	8.75	5.30	2.25
"4" Series					
50 psi			6.00	3.00	
125 psi			6.00	3.00	
"45" Series					
50 psi	2.50	1.00	8.00	5.00	2.00
125 psi	4.00	1.50	11.50	8.00	3.25