

PNEUMADYNE

Providing system solutions for fluid control



Catalog 2400 Miniature Pneumatic Components

- Custom Products
- Directional Control Valves
- Valve Accessories
- Solenoid Valves
- Solenoid Operated Valves
- Fittings
- Manifolds
- Tubing & Accessories

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PROVIDING SYSTEM SOLUTIONS FOR FLUID CONTROL

Control Valves

- ▶ 2-Way, 3-Way & 4-Way Valves
- ▶ Pressure Regulators, Flow Controls & Needle Valves
- ▶ Variety of sizes & configurations
- ▶ Anodized or Electroless nickel plated for corrosion resistance



Manifolds

- ▶ Inline
- ▶ Dual Air
- ▶ Junction Blocks
- ▶ Terminal Blocks
- ▶ Aluminum, Brass, Stainless Steel, Nylon & Polypropylene



Valve Accessories

- ▶ Oil Tight Operators
- ▶ Air Pilot, Cam, Thumb, Button & Ball Operators
- ▶ Micro Gauges
- ▶ Air Operated Electric Switches
- ▶ Foot Pedal, Mounting Brackets & Dress Plates



Tubing & Accessories

- ▶ Single & Multi-Tube Polyurethane
- ▶ Polyurethane Coils
- ▶ Variety of colors & sizes
- ▶ Tube Racks & Cutters
- ▶ Quick Disconnects, Micro Couplers, Ribbon Tube Connectors & Bulkhead Connectors



Solenoid Valves

- ▶ 2-Way & 3-Way Valves
- ▶ Variety of voltage, wattage & connector options
- ▶ Fast response times & high flow rates
- ▶ 10 mm & 15 mm Latching Valves
- ▶ Single Bases & Multiple Station Manifolds for mounting & installation convenience



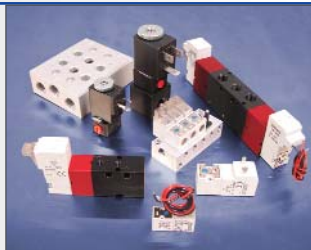
Air Jets

- ▶ 1/32 & 1/16 ID Nozzles
- ▶ Modular design is adaptable for numerous applications
- ▶ Durable brass construction
- ▶ Holder for convenient mounting
- ▶ Variety of possible combinations
- ▶ Ideal for Cooling, Blow Off, Moving & Lubricant applications



Solenoid Operated Valves

- ▶ 3-Way Normally Open & Normally Closed Valves
- ▶ 5 Port 2-Position & 5 Port 3-Position 4-Way Valves
- ▶ Variety of voltage & connector options
- ▶ Lubricated or non-lubricated air
- ▶ Multiple Station Manifolds



Custom Design Products

- ▶ Our fluid power and engineering expertise is an advantage when developing custom pneumatic products
- ▶ Products or systems that meet your defined performance requirements
- ▶ Focus on component consolidation
- ▶ Advanced manufacturing capabilities
- ▶ Over 35 years of experience designing & manufacturing custom products; a priority since our inception



Fittings

- ▶ Barbed, Threaded & Push-to-Connect styles
- ▶ Electroless nickel plated for corrosion resistance
- ▶ Superior o-ring seal
- ▶ Variety of sizes & configurations
- ▶ Brass and stainless steel



Rely on Pneumadyne when:

- ▶ Assistance is needed designing circuitry & selecting components
- ▶ Assembly time & cost must be reduced
- ▶ Performance of an existing circuit needs to be improved
- ▶ Limited space is an issue

**ISO 9001:2008
 certified
 manufacturer of
 pneumatic components**

Industries Served

**Agriculture - Automation - Dental - Entertainment / Recreation - Food & Beverage - Material & Fluid Handling
 Medical - Oil & Gas / Energy - Packaging - Printing - Semiconductor - Testing & Measurement - Transportation**



About Us

History & Milestones

Pneumadyne, Inc, an ISO 9001:2008 certified manufacturer of pneumatic components was founded in New York State by Bill Nugent in 1975. At that time, he was designing and building pneumatic control systems and saw a need for better quality miniature pneumatic components. He also realized that many fluid power distributors across the country could benefit from the product innovations that he was using to make panel building easier and more economical. From this work, the design and manufacture of Pneumadyne directional valves, pneumatic fittings and manifolds evolved.

The 1980s was a decade of product development. As Bill designed valves, it was important to him to develop new products that solved his customer's problems rather than just modify existing valve designs. This belief is as important to all of us at Pneumadyne today as it was to Bill in the 80s. Several patents were awarded for Bill's innovative designs and the majority of these valves, fittings and manifolds remain extremely popular with our customers.

October of 1988 brought about a huge change for Pneumadyne...the company was moved from New York to Minnesota. Bill chose Minnesota for its manufacturing culture and valuable work force. Several schools in the state also provided an environment that was conducive to fluid power technology.

Prior to 1995, the only product line machined in-house was our aluminum manifolds. We relied on outside machine shops for all of our valve components and fittings. In 1995 we purchased our first CNC Mill for the manufacture of manifolds and square valve bodies. This purchase was the beginning of an aggressive expansion of manufacturing operations that continues to this day. In 1997, we expanded our in-house machining capabilities to include CNC Turning. We began our operations with Swiss multi-axis machines with magazine bar feeds which allowed us to produce parts 24-hours a day, 7 days a week while only employing our day shift.

Our decision to expand our machining capabilities was a direct response to continued growth and product demand. A significant event in November of 1996 accelerated this expansion. One of our competitors had decided to exit the industrial market and cease operations by February of 1997. They felt a strong responsibility to give their distributors and customers an alternative; therefore, they contacted Pneumadyne and asked if we could provide this support. It was a big challenge but after 18 months of intensive design and product enhancement, our "Compact Series" line of valves was successfully integrated into the

Pneumadyne product offering. Today, the "Compact Valves" are still a very important part of our product mix and are now known as the "200", "300", "400" and "45" Series of valves.

Providing System Solutions for Fluid Control

In 2004, our commitment to quality received significant recognition when we were granted ISO 9001 Certification.

Stringent quality management systems, standards and guidelines ensure that we are designing and producing products that meet and exceed the highest of customer standards. Our Quality Policy, Quality Through Continuous Improvement, is implemented throughout the entire organization.

Another milestone was reached in June of 2005, we moved into our current 35,000 sq foot building. After fifteen years of change and significant growth, we made the decision to relocate. This move allowed us to configure our workspace much more efficiently as well as plan for future growth and the requirements of new and more diverse products.

Several patents have been issued for our robust and unique designs

Over the years, Pneumadyne has grown from a manufacturer of miniature pneumatic valves to a designer and manufacturer of pneumatic system solutions. Providing products, whether they are standard or custom, which solve problems and exceed customer expectations continues to be our goal.

Over the years, Pneumadyne has grown from a manufacturer of miniature pneumatic valves to a designer and manufacturer of pneumatic system solutions. Providing products, whether they are standard or custom, which solve problems and exceed customer expectations continues to be our goal.

Our Mission Pneumadyne, Inc. continually strives to be a leading manufacturer of fluid control components and systems for distributors and OEMs worldwide. With a proven understanding of the design, technology and precision manufacture of fluid controls, we seek to create solutions for our customers providing them with a competitive advantage. By encouraging all of our employees to pursue their highest potential in an atmosphere of growth, opportunity and training, consistent with the values of teamwork, pride, honesty and reliability, we are confident these goals are attainable.



ISO 9001:2008 certified manufacturer of pneumatic components



Control Valves & Accessories

2-Way & 3-Way Valves

<i>"O" Series:</i> Swivel input port	8
10-32 (F) output port	
Non-threaded exhaust port	
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10-32 (F) output port & exhaust ports	
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Non-threaded exhaust port	
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1/16 barbed output port	
Non-threaded exhaust port	
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System 8	

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Elbow: Fixed, Adjustable	
Tee: Fixed, Adjustable	
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Features

- 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



2 & 3-Way Valves

“O” Series

The highly reliable “O” Series valve is available in 2-Way or 3-Way normally open or 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!

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.

Swivel input port to accommodate critical alignment

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

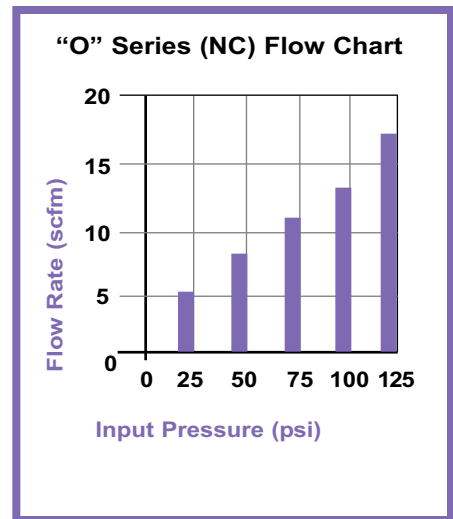
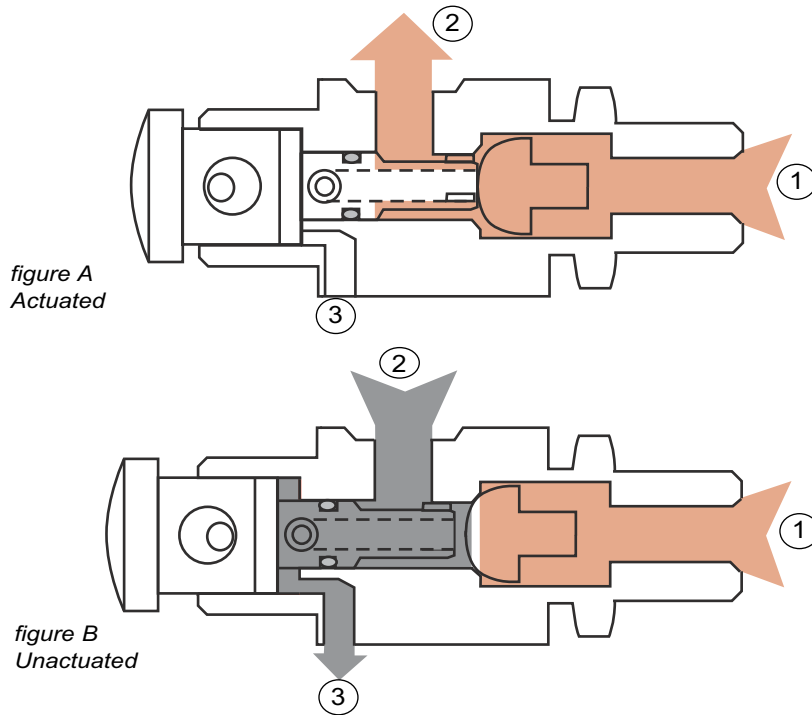
Actuator Style	2-Way Valve		3-Way Valve	
	50 psi	125 psi	50 psi	125 psi
Nylon Toggle	4 oz	6 oz	4 oz	6 oz
Push Button	3 lbs	5 1/2 lbs	3 lbs	5 1/2 lbs

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



Port Options

Definition	Options
Port 1 Swivel Input	<ul style="list-style-type: none"> ● 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

Swivel input is NOT to be used as a rotary union

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.

Normally Open valves are clear anodized for corrosion resistance

Mounting Method

Panel	Surface
Nominal mounting hole dimension 31/64"	MB-1 or MB-1F Mounting Bracket

(2) nuts and (1) lockwasher provided

Ordering 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 (see color code chart).

Product Information

2-Way Normally Closed

	<i>Part Number</i>	<i>Input</i>
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
	AO-20-7	5/32 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
	FO-20-3	10-32 (F) Tee
	FO-20-4	1/8 NPT (F)
	FO-20-5	170 Barb
	FO-20-6	1/4 Push-in
	FO-20-7	5/32 Push-in

3-Way Normally Closed

	<i>Part Number</i>	<i>Input</i>
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
	FO-30-3	10-32 (F) Tee
	FO-30-4	1/8 NPT (F)
	FO-30-5	170 Barb
	FO-30-6	1/4 Push-in
	FO-30-7	5/32 Push-in

2-Way Normally Open

	<i>Part Number</i>	<i>Input</i>
Push Button	AO-21-1	1/8 NPT /10-32 (F)
	AO-21-2	10-32 (F) Elbow
	AO-21-3	10-32 (F) Tee
	AO-21-4	1/8 NPT (F)
	AO-21-5	170 Barb
	AO-21-6	1/4 Push-in
	AO-21-7	5/32 Push-in
Detented Toggle	HO-21-1	1/8 NPT /10-32 (F)
	HO-21-2	10-32 (F) Elbow
	HO-21-3	10-32 (F) Tee
	HO-21-4	1/8 NPT (F)
	HO-21-5	170 Barb
	HO-21-6	1/4 Push-in
	HO-21-7	5/32 Push-in
Momentary Toggle	FO-21-1	1/8 NPT /10-32 (F)
	FO-21-2	10-32 (F) Elbow
	FO-21-3	10-32 (F) Tee
	FO-21-4	1/8 NPT (F)
	FO-21-5	170 Barb
	FO-21-6	1/4 Push-in
	FO-21-7	5/32 Push-in

3-Way Normally Open

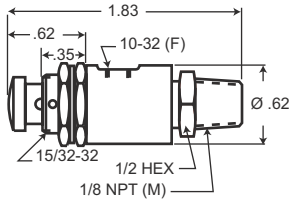
	<i>Part Number</i>	<i>Input</i>
Push Button	AO-31-1	1/8 NPT /10-32 (F)
	AO-31-2	10-32 (F) Elbow
	AO-31-3	10-32 (F) Tee
	AO-31-4	1/8 NPT (F)
	AO-31-5	170 Barb
	AO-31-6	1/4 Push-in
	AO-31-7	5/32 Push-in
Detented Toggle	HO-31-1	1/8 NPT /10-32 (F)
	HO-31-2	10-32 (F) Elbow
	HO-31-3	10-32 (F) Tee
	HO-31-4	1/8 NPT (F)
	HO-31-5	170 Barb
	HO-31-6	1/4 Push-in
	HO-31-7	5/32 Push-in
Momentary Toggle	FO-31-1	1/8 NPT /10-32 (F)
	FO-31-2	10-32 (F) Elbow
	FO-31-3	10-32 (F) Tee
	FO-31-4	1/8 NPT (F)
	FO-31-5	170 Barb
	FO-31-6	1/4 Push-in
	FO-31-7	5/32 Push-in

*Pneumadyne
"O" Series Valves
have been customer
tested over
40 million cycles!*

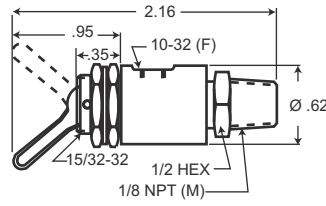
- Refer to **Product Number Diagram** ([page 14](#))

Push Button Actuator

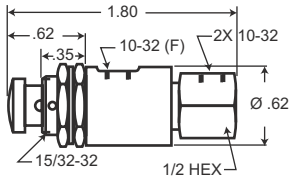
Toggle Actuator



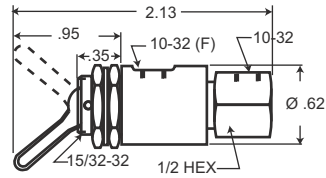
"-1" Input



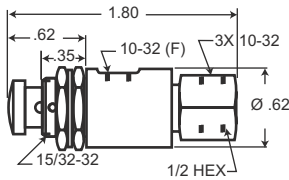
"-1" Input



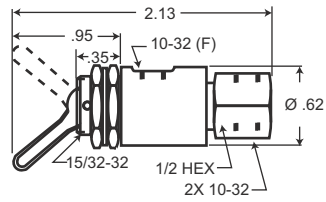
"-2" Input



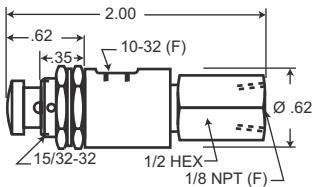
"-2" Input



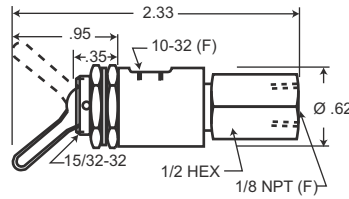
"-3" Input



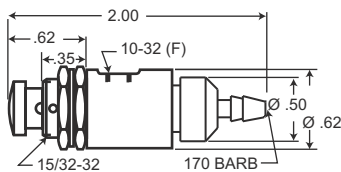
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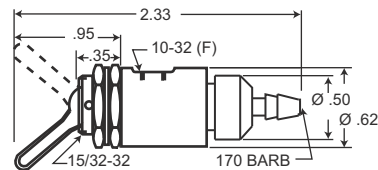
"-4" Input



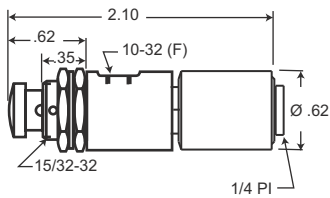
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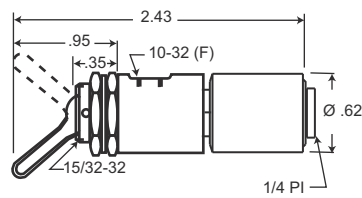
"-5" Input



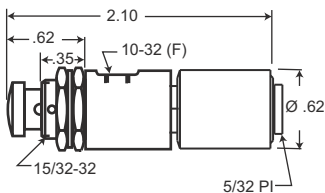
"-5" Input



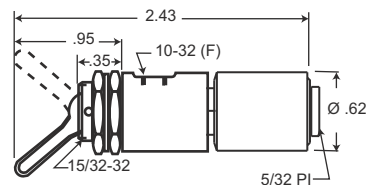
"-6" Input



"-6" Input



"-7" Input



"-7" Input

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

Features

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



3-Way Valves

“3” Series

Pneumadyne’s “3” Series are 3-Way normally closed, fully ported valves.

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.

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
		3-2	.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	3-1/2 lbs	6 lbs

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

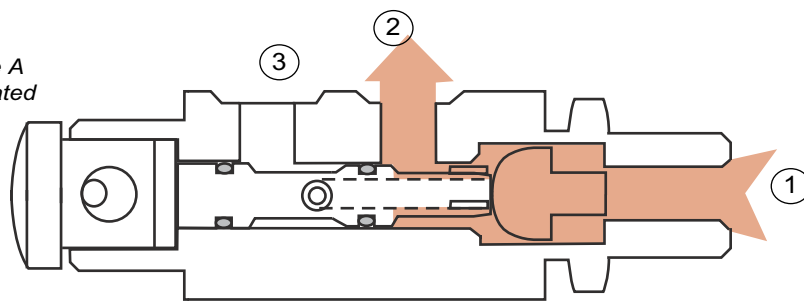
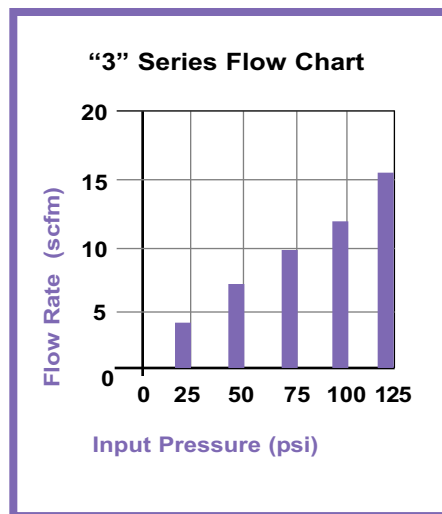
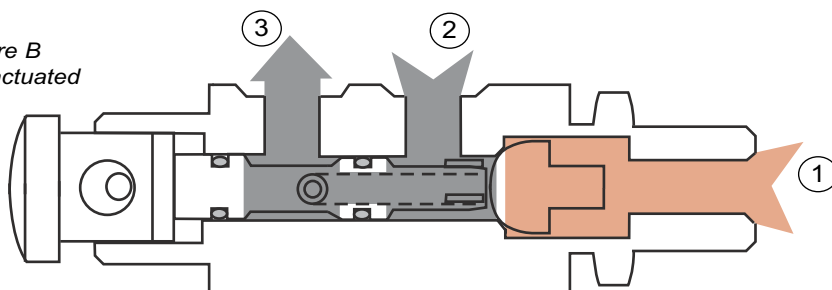


figure B
Unactuated



Port Options

Definition	Options
Port 1 Swivel Input	<ul style="list-style-type: none"> ● 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	10-32 (F)

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

Swivel input is NOT to be used as a rotary union

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

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 valve.

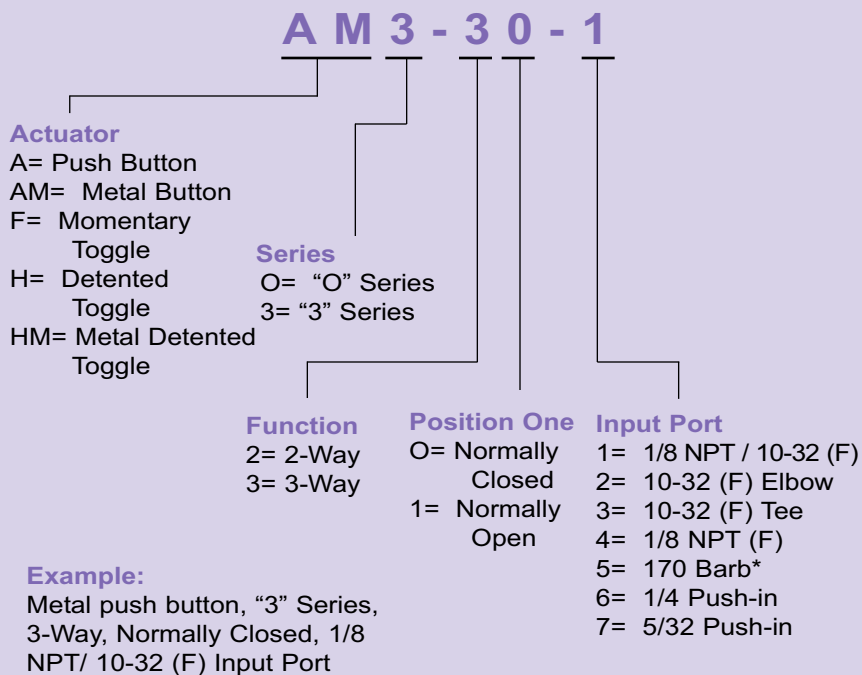
Product Information

3-Way Normally Closed

	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)
	A3-30-5	170 Barb
	A3-30-6	1/4 Push-in
	A3-30-7	5/32 Push-in
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)
	H3-30-5	170 Barb
	H3-30-6	1/4 Push-in
	H3-30-7	5/32 Push-in
Momentary Toggle	F3-30-1	1/8 NPT/ 10-32 (F)
	F3-30-2	10-32 (F) Elbow
	F3-30-3	10-32 (F) Tee
	F3-30-4	1/8 NPT (F)
	F3-30-5	170 Barb
	F3-30-6	1/4 Push-in
	F3-30-7	5/32 Push-in

Product Number Diagram

"O" Series & "3" Series



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

Ordering 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 (see color code chart).

Push Button Actuator

Toggle Actuator

<p>“-1” Input</p>	<p>“-1” Input</p>
<p>“-2” Input</p>	<p>“-2” Input</p>
<p>“-3” Input</p>	<p>“-3” Input</p>
<p>“-4” Input</p>	<p>“-4” Input</p>
<p>“-5” Input</p>	<p>“-5” Input</p>
<p>“-6” Input</p>	<p>“-6” Input</p>
<p>“-7” Input</p>	<p>“-7” Input</p>

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

Features

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



2 & 3-Way Valves "11" Series

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.

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.

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 Closed	.29	10.2	22.1	.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	7 1/2 lbs	11 lbs	3 1/2 lbs	7 lbs

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

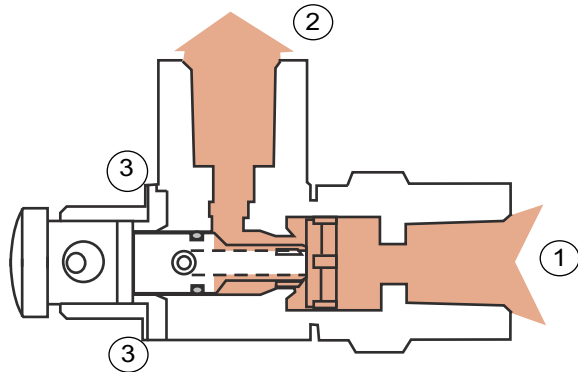
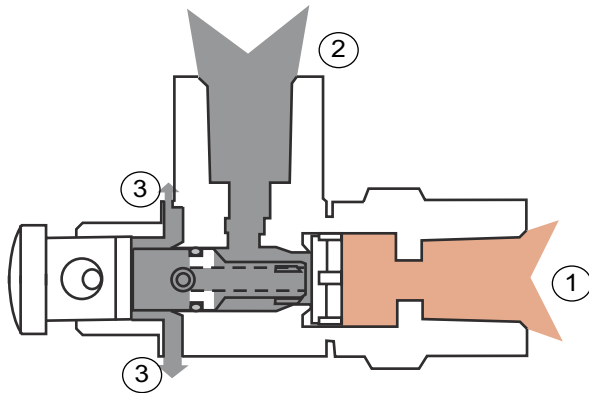


figure B
Unactuated

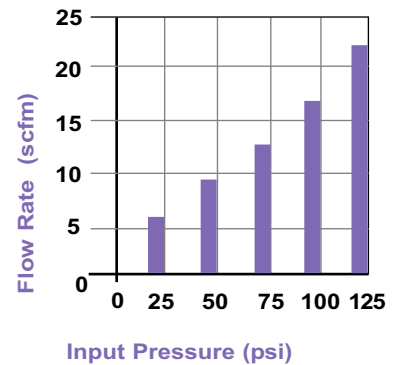


Function

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.

“11” Series Flow Chart



Port Options

Definition	Options
Port 1 Input	<ul style="list-style-type: none"> ● 1/8 NPT / 10-32 (F) ● 1/8 NPT (F) ● 1/4 Push-in ● 5/32 Push-in
Port 2 Swivel Output	<ul style="list-style-type: none"> ● 1/8 NPT (F) ● 1/4 Push-in ● 5/32 Push-in
Port 3 Exhaust	non-threaded, exhausts to atmosphere

Swivel output is NOT to be used as a rotary union

Mounting Method

Panel	Surface
Nominal mounting hole dimension 31/64"	MB-1 or MB-1F Mounting Bracket

(2) nuts and (1) lockwasher provided



1/8 NPT male or 1/4 NPT male output ports available- contact factory



Push-to-connect connections are available on both the input and output ports

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

Product Information

2-Way Normally Closed

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

Push Button

Detented Toggle

Momentary Toggle

2-Way Normally Open

Part Number	Input	Output
A11-21-14	1/8 NPT	1/8 NPT (F)
A11-21-16	NPT	1/4 Push-in
A11-21-17		5/32 Push-in
A11-21-44	1/8 NPT	1/8 NPT (F)
A11-21-46	NPT (F)	1/4 Push-in
A11-21-47		5/32 Push-in
A11-21-64		1/8 NPT (F)
A11-21-66	1/4 Push-in	1/4 Push-in
A11-21-67		5/32 Push-in
A11-21-74		1/8 NPT (F)
A11-21-76	5/32 Push-in	1/4 Push-in
A11-21-77		5/32 Push-in
H11-21-14	1/8 NPT	1/8 NPT (F)
H11-21-16	NPT	1/4 Push-in
H11-21-17		5/32 Push-in
H11-21-44	1/8 NPT	1/8 NPT (F)
H11-21-46	NPT (F)	1/4 Push-in
H11-21-47		5/32 Push-in
H11-21-64		1/8 NPT (F)
H11-21-66	1/4 Push-in	1/4 Push-in
H11-21-67		5/32 Push-in
H11-21-74		1/8 NPT (F)
H11-21-76	5/32 Push-in	1/4 Push-in
H11-21-77		5/32 Push-in
F11-21-14	1/8 NPT	1/8 NPT (F)
F11-21-16	NPT	1/4 Push-in
F11-21-17		5/32 Push-in
F11-21-44	1/8 NPT	1/8 NPT (F)
F11-21-46	NPT (F)	1/4 Push-in
F11-21-47		5/32 Push-in
F11-21-64		1/8 NPT (F)
F11-21-66	1/4 Push-in	1/4 Push-in
F11-21-67		5/32 Push-in
F11-21-74		1/8 NPT (F)
F11-21-76	5/32 Push-in	1/4 Push-in
F11-21-77		5/32 Push-in

Push Button

Detented Toggle

Momentary Toggle

● Refer to Product Number Diagram

Product Information

3-Way Normally Closed

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

3-Way Normally Open

	Part Number	Input	Output
Push Button	A11-31-14	1/8 NPT	1/8 NPT (F)
	A11-31-16	NPT	1/4 Push-in
	A11-31-17		5/32 Push-in
	A11-31-44	1/8 NPT	1/8 NPT (F)
	A11-31-46	NPT (F)	1/4 Push-in
	A11-31-47		5/32 Push-in
	A11-31-64		1/8 NPT (F)
	A11-31-66	1/4 Push-in	1/4 Push-in
	A11-31-67		5/32 Push-in
	A11-31-74		1/8 NPT (F)
A11-31-76	5/32 Push-in	1/4 Push-in	
A11-31-77		5/32 Push-in	
Detented Toggle	H11-31-14	1/8 NPT	1/8 NPT (F)
	H11-31-16	NPT	1/4 Push-in
	H11-31-17		5/32 Push-in
	H11-31-44	1/8 NPT	1/8 NPT (F)
	H11-31-46	NPT (F)	1/4 Push-in
	H11-31-47		5/32 Push-in
	H11-31-64		1/8 NPT (F)
	H11-31-66	1/4 Push-in	1/4 Push-in
	H11-31-67		5/32 Push-in
	H11-31-74		1/8 NPT (F)
H11-31-76	5/32 Push-in	1/4 Push-in	
H11-31-77		5/32 Push-in	
Momentary Toggle	F11-31-14	1/8 NPT	1/8 NPT (F)
	F11-31-16	NPT	1/4 Push-in
	F11-31-17		5/32 Push-in
	F11-31-44	1/8 NPT	1/8 NPT (F)
	F11-31-46	NPT (F)	1/4 Push-in
	F11-31-47		5/32 Push-in
	F11-31-64		1/8 NPT (F)
	F11-31-66	1/4 Push-in	1/4 Push-in
	F11-31-67		5/32 Push-in
	F11-31-74		1/8 NPT (F)
F11-31-76	5/32 Push-in	1/4 Push-in	
F11-31-77		5/32 Push-in	



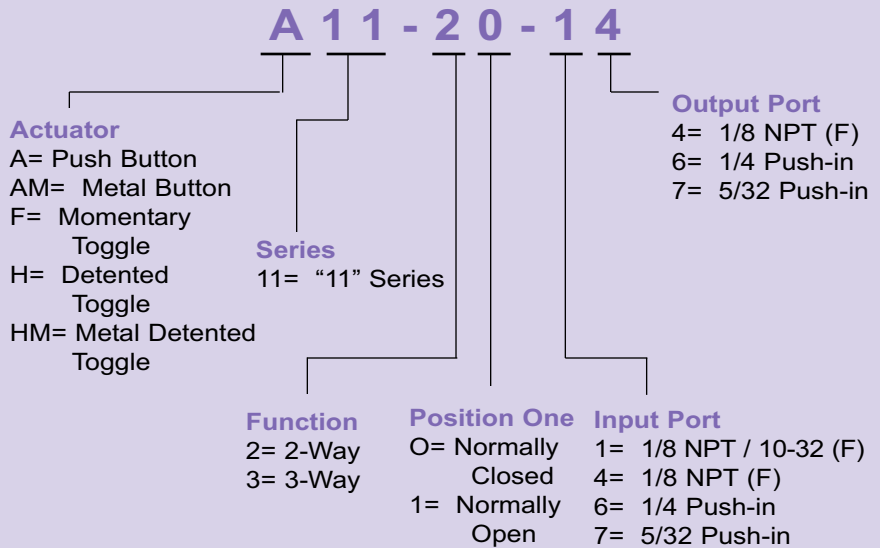
Ordering Information

- 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 (see color code chart).



The standard "11" Series valve output port swivels to accommodate critical alignment

Product Number Diagram
"11" Series Valves



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

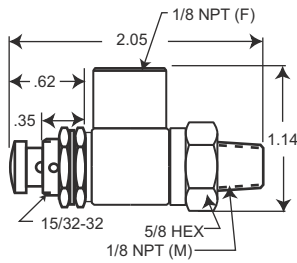
System 11 is a method of consolidating 2 to 10 components with a common pressure source.

This custom product is shown with "11" Series valves.

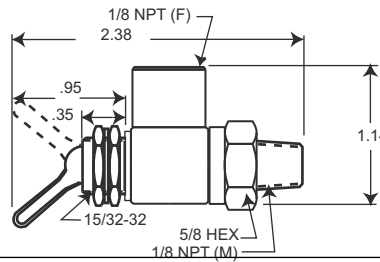


Push Button Actuator

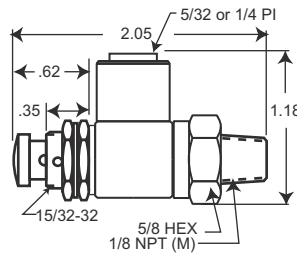
Toggle Actuator



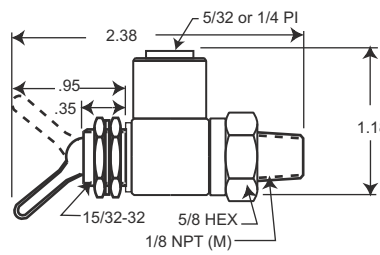
“-14” Porting



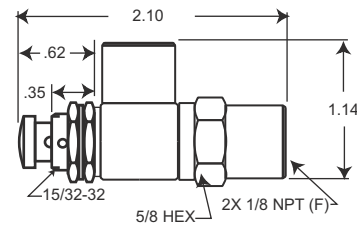
“-14” Porting



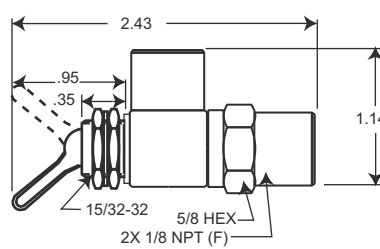
“-16” Porting
“-17” Porting



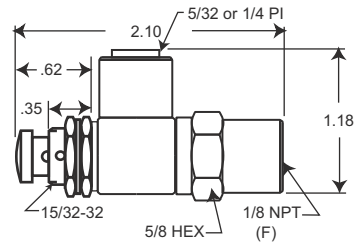
“-16” Porting
“-17” Porting



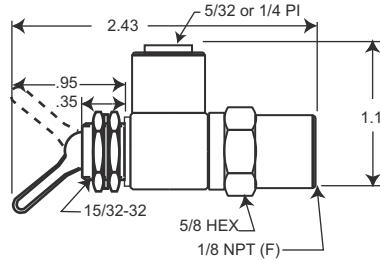
“-44” Porting



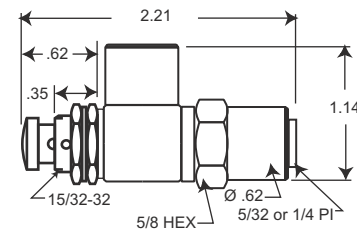
“-44” Porting



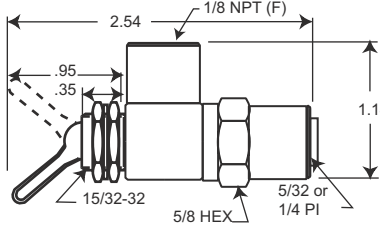
“-46” Porting
“-47” Porting



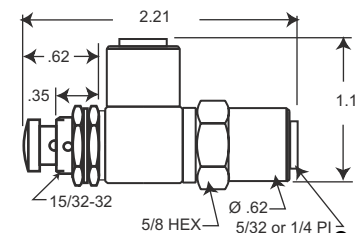
“-46” Porting
“-47” Porting



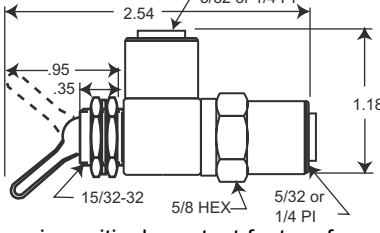
“-64” Porting
“-74” Porting



“-64” Porting
“-74” Porting



“-66” Porting
“-67” Porting
“-76” Porting
“-77” 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

- Single stem design
- Compact size
- Four input options
- Numerous porting configurations
- Fully ported design offers plumbing versatility
- Vacuum applications to 26" Hg



2 & 3-Way Valves "200" & "300" Series

The "200" & "300" Series valves feature miniature size and a single stem design. The "200" Series valve features 1/16 barbed porting and is ideal for use as a pilot service device. The "300" Series 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 alternative plumbing options](#)

Performance Data

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

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		
"200" Series Barbed N.C.	.026	N/A	.93	2.10	.14	.20
"200" Series Barbed N.O.	.030	N/A	1.08	2.33	.12	.19
"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

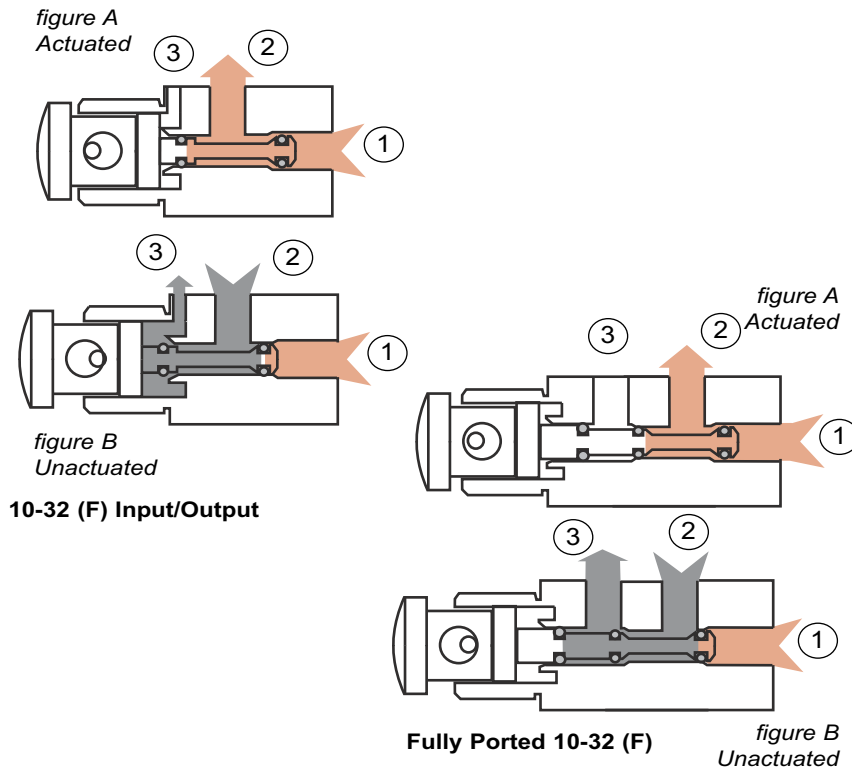
Actuation Force

Actuator Style	"200" Series Barbed		"300" Series 10-32 input		"300" Series Fully ported 10-32 (F)	
	50 psi	125 psi	50 psi	125 psi	50 psi	125 psi
Toggle	6 oz	11 oz	6 oz	11 oz	6 oz	11 oz
Ball	29 oz	51 oz	29 oz	51 oz	29 oz	51 oz
Push Button	29 oz	51 oz	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



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.

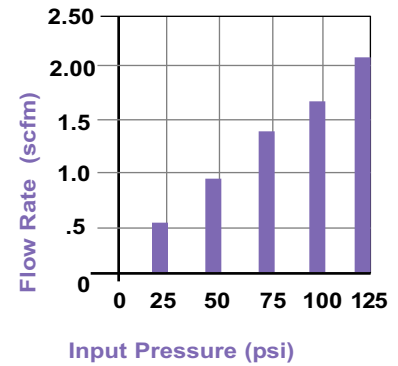
The **10-32 (F) fully ported** valve allows the capture and removal of exhaust flow. (See [Plumbing Options for Fully Ported Valves](#) alternative plumbing methods.)

Port Options

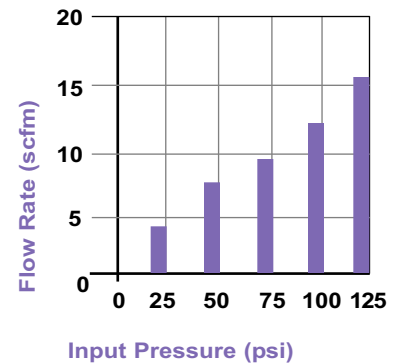
Valve	Input 1	Output 2	Exhaust
Barbed	062 Barb	062 Barb	non-threaded
10-32 (F) Input/Output	10-32 (F)	10-32 (F)	non-threaded
Rear Ported	10-32 (F)	10-32 (F)	non-threaded
1/8 NPT Input	1/8 NPT	10-32 (F)	non-threaded
*Cartridge	non-threaded	non-threaded	non-threaded
10-32 (F) Fully Ported	10-32 (F)	10-32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

[*Cartridge valve mounting drawing](#)

“200” Series Flow Chart



“300” Series Flow Chart



Mounting Method

Panel	Surface
Nominal mounting hole dimension 31/64”	MB-1 or MB-1F Mounting Bracket

(2) nuts and (1) lockwasher provided



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

Viton® is a registered trademark of Dupont Dow Elastomers

Product Information

"200" Series Barbed Valve 1/16 Tube ID Barb

Part Number	Operator
2-Way Normally Closed	
C021701	Toggle Detented
C021703	Toggle Momentary
C021705	Nylon Button
C021707	Nylon Ball
C021721	Metal Toggle Detented
C021723	Metal Toggle Momentary
C021725	Metal Button
C021727	Stainless Steel Ball

2-Way Normally Open	
C021501	Toggle Detented
C021503	Toggle Momentary
C021505	Nylon Button
C021507	Nylon Ball
C021521	Metal Toggle Detented
C021523	Metal Toggle Momentary
C021525	Metal Button
C021527	Stainless Steel Ball

3-Way Normally Closed	
C021601	Toggle Detented
C021603	Toggle Momentary
C021605	Nylon Button
C021607	Nylon Ball
C021621	Metal Toggle Detented
C021623	Metal Toggle Momentary
C021625	Metal Button
C021627	Stainless Steel Ball

3-Way Normally Open	
C021401	Toggle Detented
C021403	Toggle Momentary
C021405	Nylon Button
C021407	Nylon Ball
C021421	Metal Toggle Detented
C021423	Metal Toggle Momentary
C021425	Metal Button
C021427	Stainless Steel Ball

"300" Series Standard 10-32 (F)

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)

Part Number	Operator
2-Way Normally Open	
C030401	Toggle Detented
C030403	Toggle Momentary
C030405	Nylon Button
C030407	Nylon Ball
C030421	Metal Toggle Detented
C030423	Metal Toggle Momentary
C030425	Metal Button
C030427	Stainless Steel Ball

3-Way Normally Open	
C030301	Toggle Detented
C030303	Toggle Momentary
C030305	Nylon Button
C030307	Nylon Ball
C030321	Metal Toggle Detented
C030323	Metal Toggle Momentary
C030325	Metal Button
C030327	Stainless Steel Ball

Product Information



**“300” Series
Standard Stainless Steel
10-32 (F)**

<i>Part Number</i>	<i>Operator</i>
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 Rear Ported
10-32 (F)**

<i>Part Number</i>	<i>Operator</i>
2-Way Normally Closed	
C031001	Toggle Detented
C031003	Toggle Momentary
C031005	Nylon Button
C031007	Nylon Ball
C031021	Metal Toggle Detented
C031023	Metal Toggle Momentary
C031025	Metal Button
C031027	Stainless Steel Ball
3-Way Normally Closed	
C030901	Toggle Detented
C030903	Toggle Momentary
C030905	Nylon Button
C030907	Nylon Ball
C030921	Metal Toggle Detented
C030923	Metal Toggle Momentary
C030925	Metal Button
C030927	Stainless Steel Ball

**“300” Series
1/8 NPT Input**

<i>Part Number</i>	<i>Operator</i>
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 Cartridge

<i>Part Number</i>	<i>Operator</i>
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

**“300” Series
10-32 Fully Ported**

<i>Part Number</i>	<i>Operator</i>
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
10-32 Fully Ported
Stainless Steel**

<i>Part Number</i>	<i>Operator</i>
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



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



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

“200” & “300” Series valves feature miniature size and a single stem design

Product Number Diagram
“200 & 300” Series

C O 2 1 6 0 1

Seals
O= Buna-N
E= Ethylene Propylene
V= Viton®

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

Style and Function

- | | |
|-----------------------|--------------------------|
| *214 Barbed 3WNO | 306 1/8 NPT Input 3WNC |
| *215 Barbed 2WNO | 307 1/8 NPT Input 2WNC |
| *216 Barbed 3WNC | 309 Rear Ported 3WNC |
| *217 Barbed 2WNC | 310 Rear Ported 2WNC |
| 301 Standard 3WNC | 320 Fully Ported SS 3WNC |
| 302 Standard 2WNC | 321 Standard SS 2WNC |
| 303 Standard 3WNO | 322 Standard SS 3WNC |
| 304 Standard 2WNO | 323 Cartridge 3WNC |
| 305 Fully Ported 3WNC | 324 Cartridge 2WNC |

Example: 200 Series - Buna N O-rings, 3-Way Normally Closed, with Detented Toggle

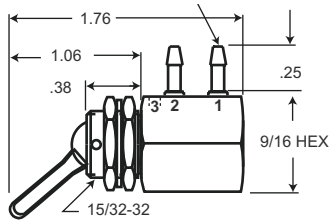
* 062 barb- recommended for use with 1/16 ID PUR tubing

Ordering Information

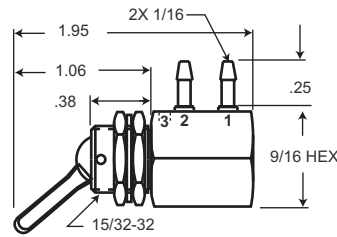
- To order standard product refer to Product Information listing.
- With Ethylene Propylene O-ring seal, change the “CO” in the part number to “CE”.
- With Viton® O-ring seal, change the “CO” in the part number to “CV”.
- Nylon toggle and push buttons are available in seven colors with black as standard. To order colored actuators specify the color, by code, as a “-code#” suffix following the part number ([see color code chart](#)).

Barbed Ports
Normally Closed

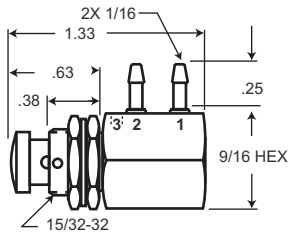
Barbed Ports
Normally Open



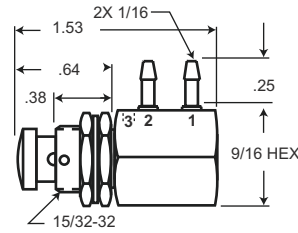
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C021701
C021703



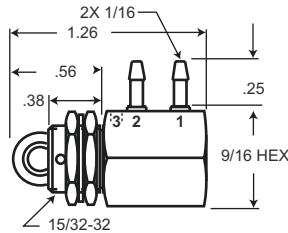
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C021501
C021503



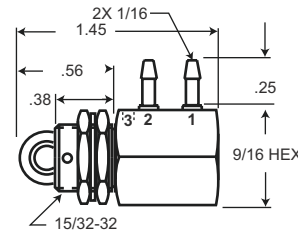
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C021705
C021725



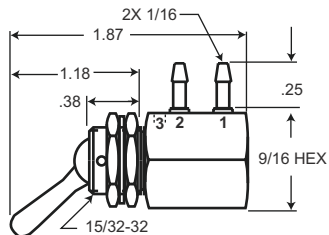
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C021525



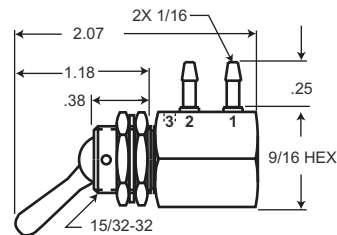
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C021707
C021727



C021407
C021427
C021507
C021527



C021621
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C021723



C021421
C021423
C021521
C021523

● Refer to **Product Number Diagram** for part number description

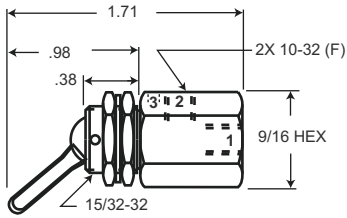
● Port 3 is for 3-Way products only

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

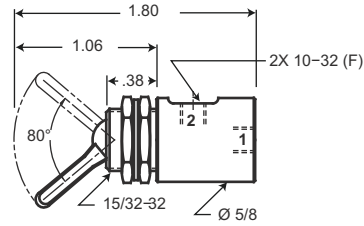
Standard

Standard

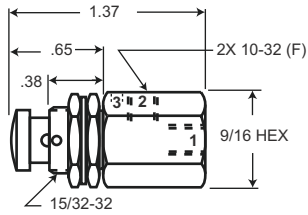
Stainless Steel



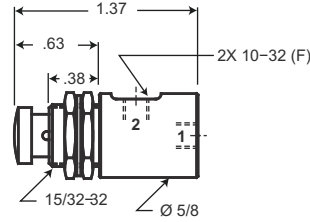
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C030201 **C030203**
C030301 **C030303**
C030401 **C030403**



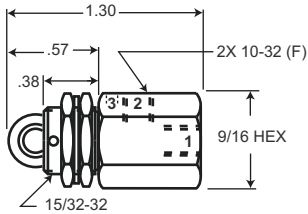
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C032201
C032203



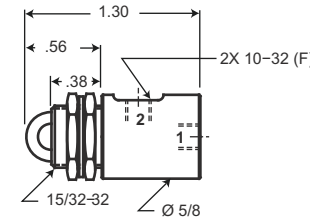
C030105 **C030125**
C030205 **C030225**
C030305 **C030325**
C030405 **C030425**



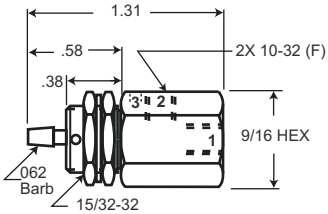
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C032225



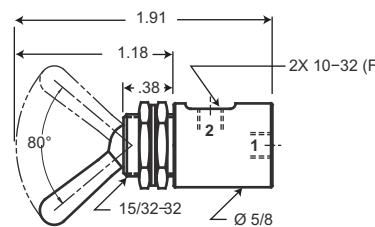
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C030207 **C030227**
C030307 **C030327**
C030407 **C030427**



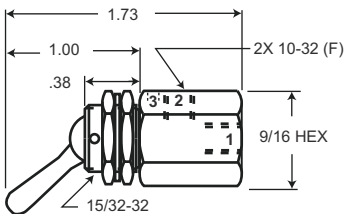
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C030109
C030209



C032121
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C032223



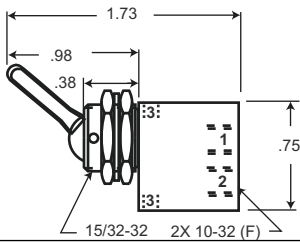
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C030421 **C030423**

● Refer to **Product Number Diagram** for part number description

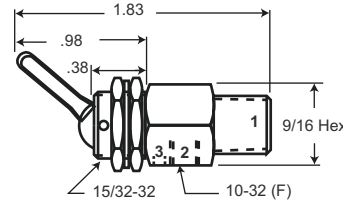
● Port 3 is for 3-Way products only

Rear Ported

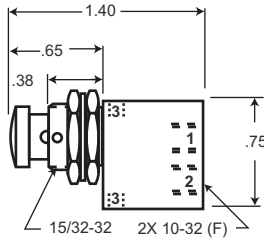
1/8 NPT Input



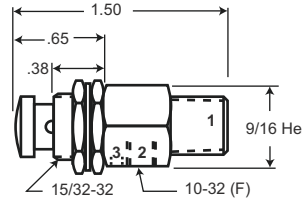
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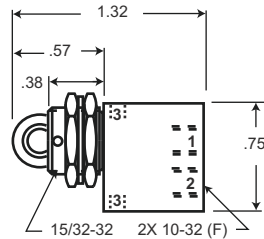
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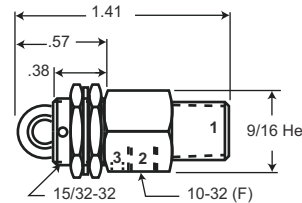
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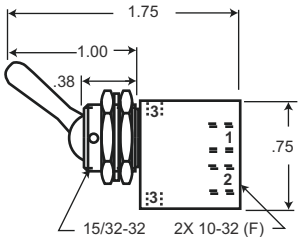
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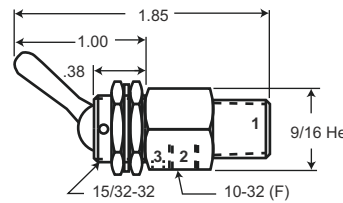
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C031023



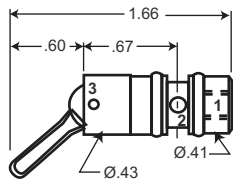
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C030723

● Refer to **Product Number Diagram** for part number description

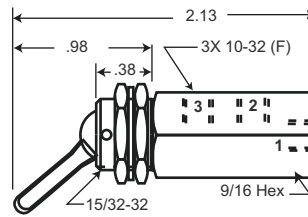
- Port 3 is for 3-Way products only
- When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Cartridge

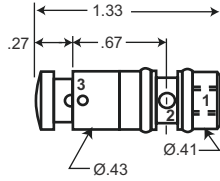
Fully Ported



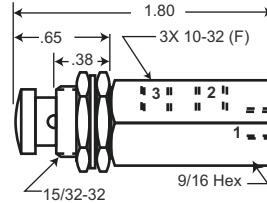
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C032403



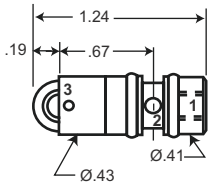
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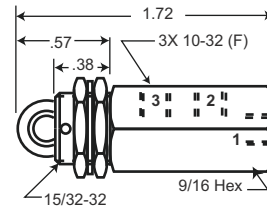
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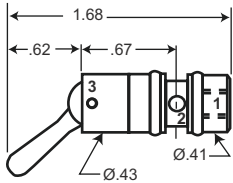
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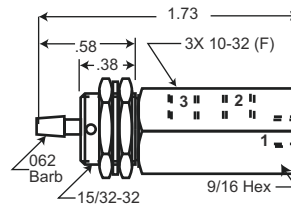
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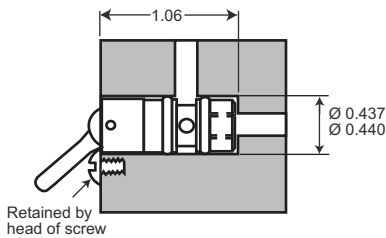
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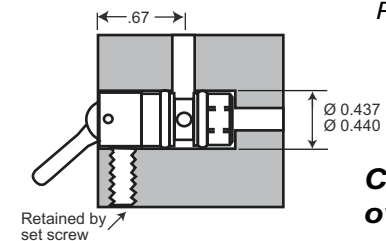
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C030509

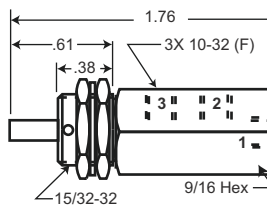


Mounting Options

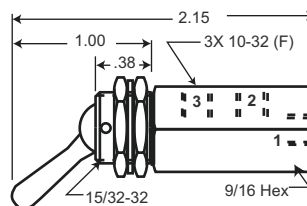


Preferred Method

Caution- do NOT over torque retention screw

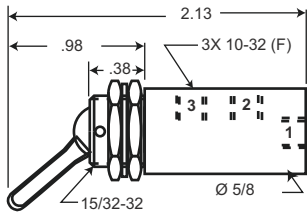


C030510



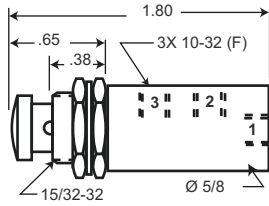
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C030523

Fully Ported
Stainless Steel



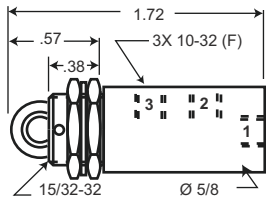
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 C032003



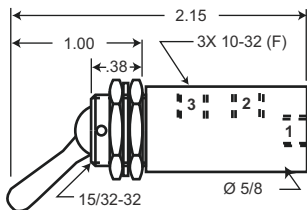
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 C032025



 C032007

 C032027



 C032021

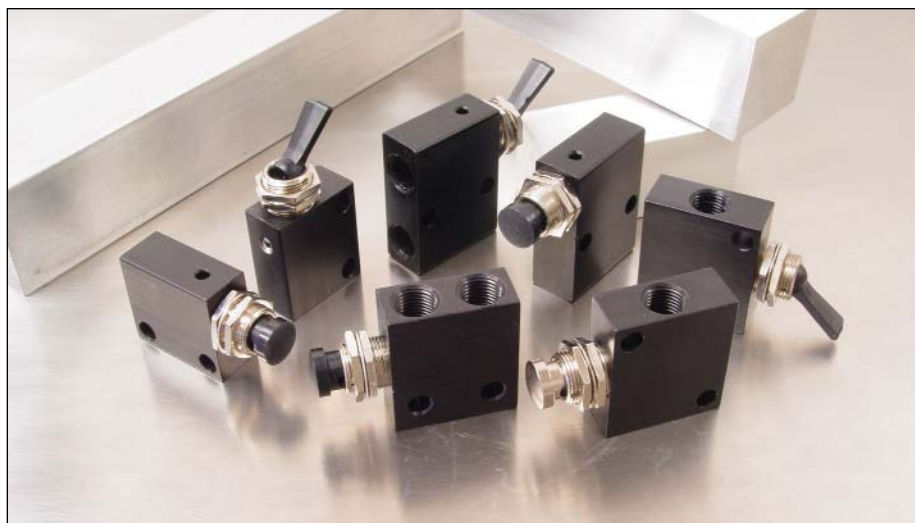
 C032023

● 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

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



2 & 3-Way Valves "400" Series

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.

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

figure A
Actuated

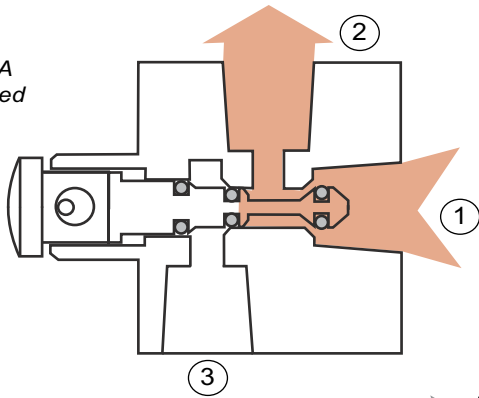
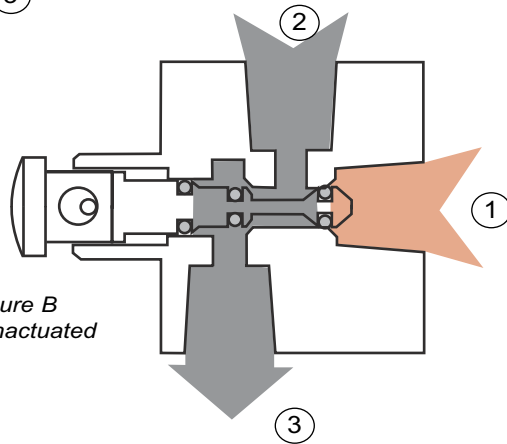
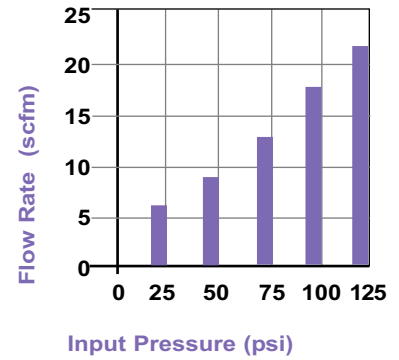


figure B
Unactuated



“400: Series Flow Rate



“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.

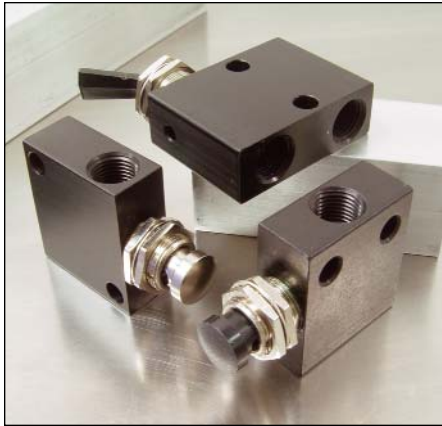
Actuation Force

Actuator Style	50 psi	125 psi
Toggle	13 oz	19 oz
Ball	3 1/2 lbs	5 1/2 lbs
Push Button	3 1/2 lbs	5 1/2 lbs

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



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

Product Information "400" Series

1/8 NPT Standard

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

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 “400” Series

1/8 NPT Fully Ported

<i>Part Number</i>	<i>Operator</i>
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

<i>Part Number</i>	<i>Operator</i>
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

<i>Part Number</i>	<i>Operator</i>
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



Panel mount or surface mount
1/8 NPT input valves



The “400” Series valves feature
plumbing versatility

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



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

Product Number Diagram "400" Series

C O 4 0 1 0 1

Seals

O= Buna-N
E= Ethylene
Propylene
V= Viton®

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

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

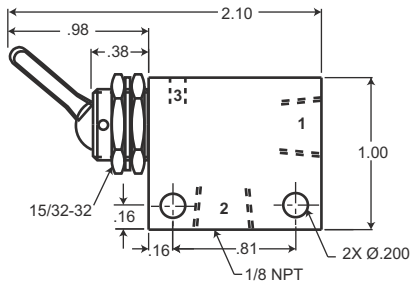
Example: 400 Series - Buna N O-rings, Standard 3-Way Normally Closed, with Detented Nylon Toggle

Ordering Information

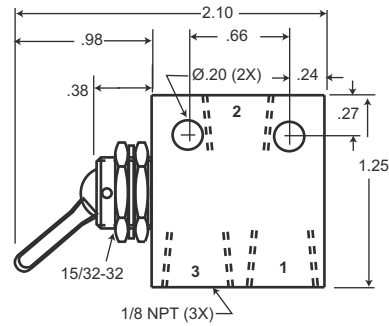
- To order standard product refer to Product Information listing.
- With Ethylene Propylene O-ring seal, change the "CO" in the part number to "CE".
- With Viton® O-ring seal, change the "CO" in the part number to "CV".
- Nylon toggle and push buttons are available in seven colors with black as standard. To order colored actuators specify the color, by code, as a "-code" suffix following the part number ([see color code chart](#)).

Standard

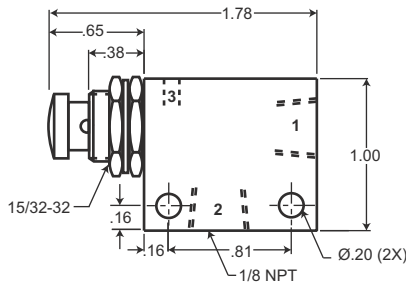
Side Ported



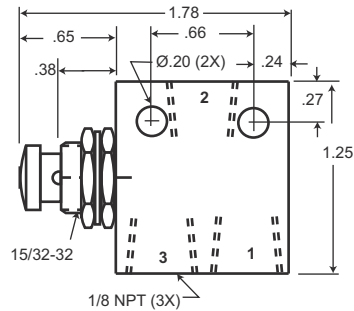
C040101
C040103
C040201
C040203



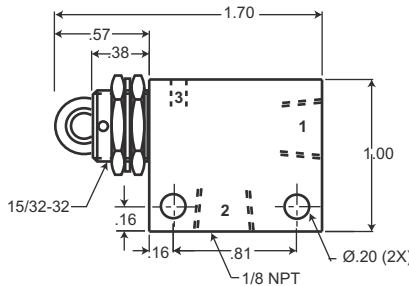
C040401
C040403



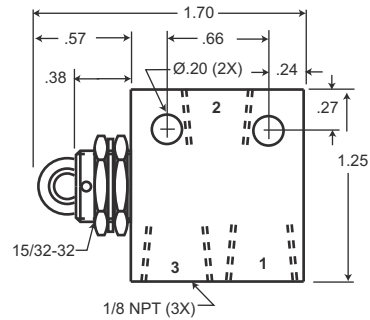
C040105
C040125
C040205
C040225



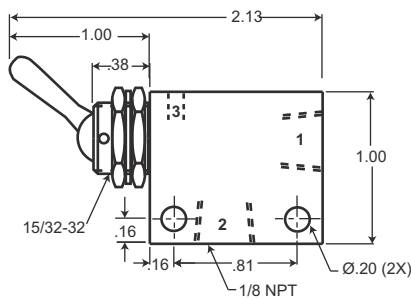
C040405
C040425



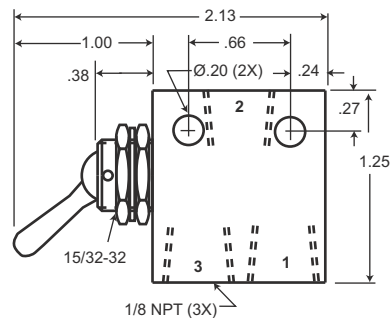
C040107
C040127
C040207
C040227



C040407
C040427



C040121
C040123
C040221
C040223

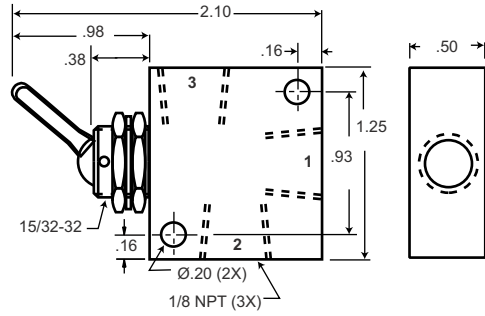


C040421
C040423

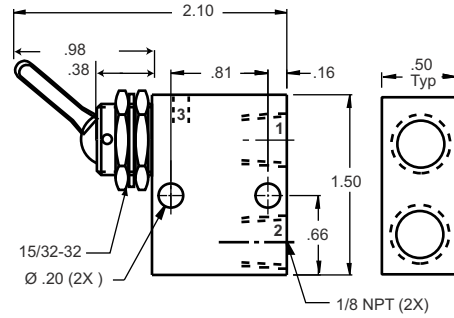
- Port 3 is for 3-Way products only
- When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Fully Ported

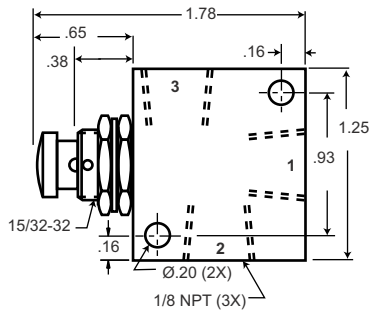
Rear Ported



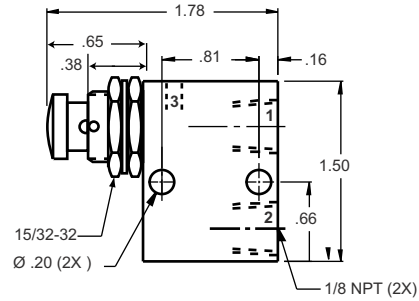
**C040501
C040503**



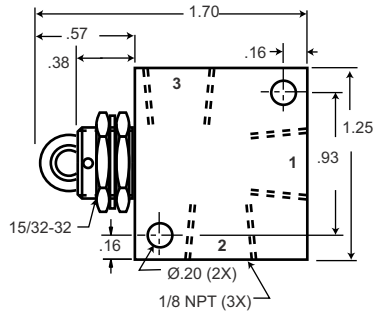
**C040901
C040903
C041001
C041003**



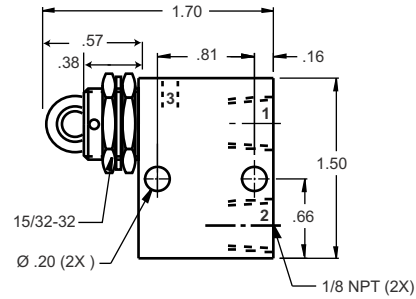
**C040505
C040525**



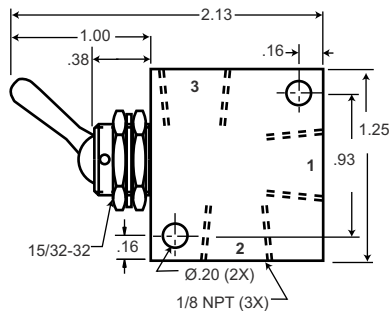
**C040905
C040925
C041005
C041025**



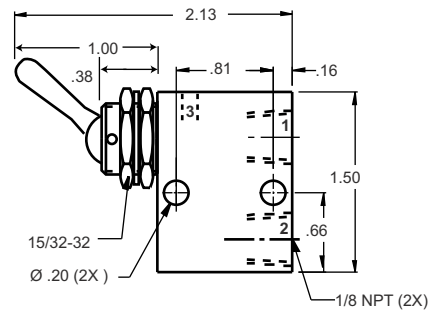
**C040507
C040527**



**C040907
C040927
C041007
C041027**



**C040521
C040523**

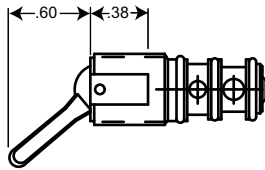


**C040921
C040923
C041021
C041023**

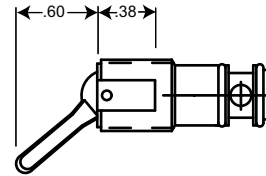
- Port 3 is for 3-Way products only
- When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

3-Way Cartridge

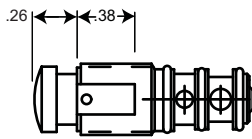
2-Way Cartridge



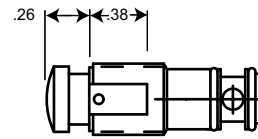
C040601
C040603



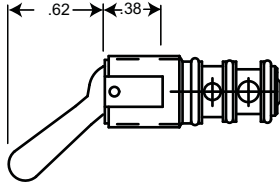
C040701
C040703



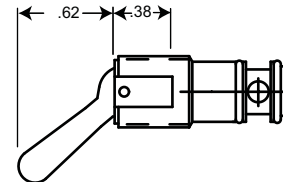
C040605
C040625



C040705
C040725



C040621
C040623



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

- 2-Way & 3-Way
- Normally Closed or Normally Open
- PneuTef™ plated for longer life
- Lubricated and non-lubricated air
- High flow rate
- Compact size

Pilot Operated Cartridge Valves

Pneumadyne's new Pilot Operated Cartridge Valves offer a high flow rate in a compact package. Designed for integration in a pneumatic circuit's valve block, these .250 inch and .500 inch orifice valves can be used as either a 2-Way or 3-Way function (see plumbing options).

Our exclusive PneuTef™ plating process results in a smooth, slippery finish which extends product life and also allows the valves to be used in both lubricated and non-lubricated air applications.

Pilot Pressure Ratio

Part No.	Input	Pilot
C250	0-40 psi	30 psi min
	40 psi+	80% of Input
C500	0-30 psi	20 psi min
	30 psi +	70% of Input



Pilot Operated Cartridge Valves

Performance Data

Temperature Range	Operating Pressure	Media
-20° to 160° F	0 to 125 psi	Air

Plumbing Options

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

Materials

Body: Aluminum/PneuTef™ plated
 Spool: Aluminum/Anodized
 Seals: Buna-N
 Spring: Stainless Steel

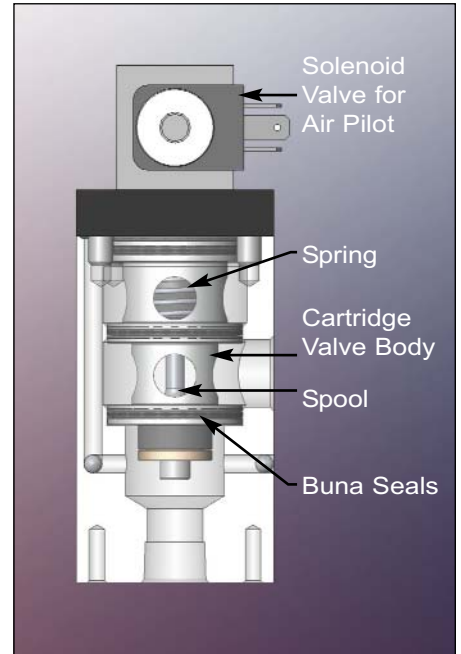
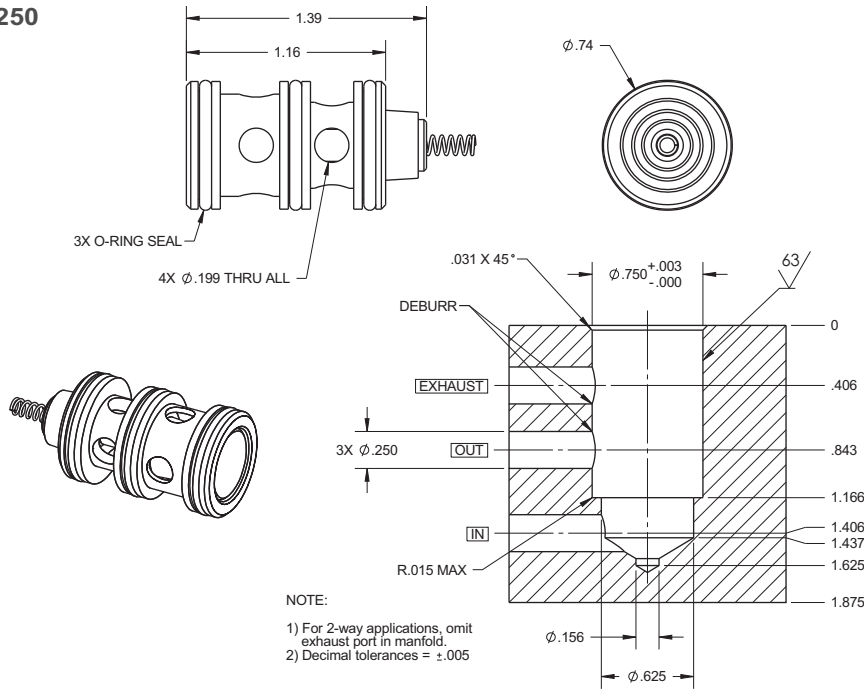
Pilot Operated Cartridge Valves

Product Information

Pilot Operated Cartridge Valves

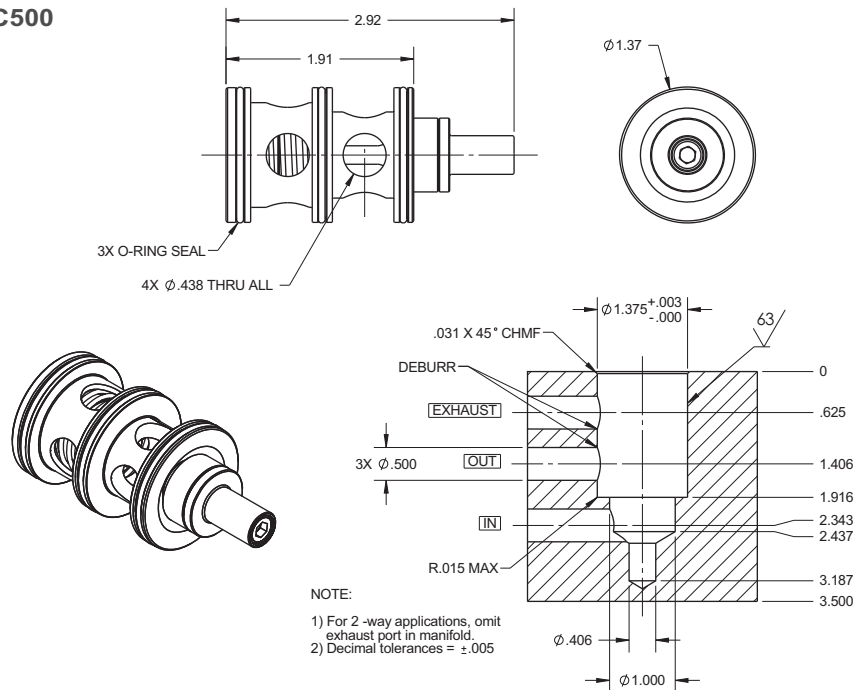
Part Number	Description
C250	Cartridge Valve, .250 in. Orifice
C500	Cartridge Valve, .500 in. Orifice

C250



Pilot Operated Cartridge Valve shown installed in a custom valve block manufactured by Pneumadyne.

C500



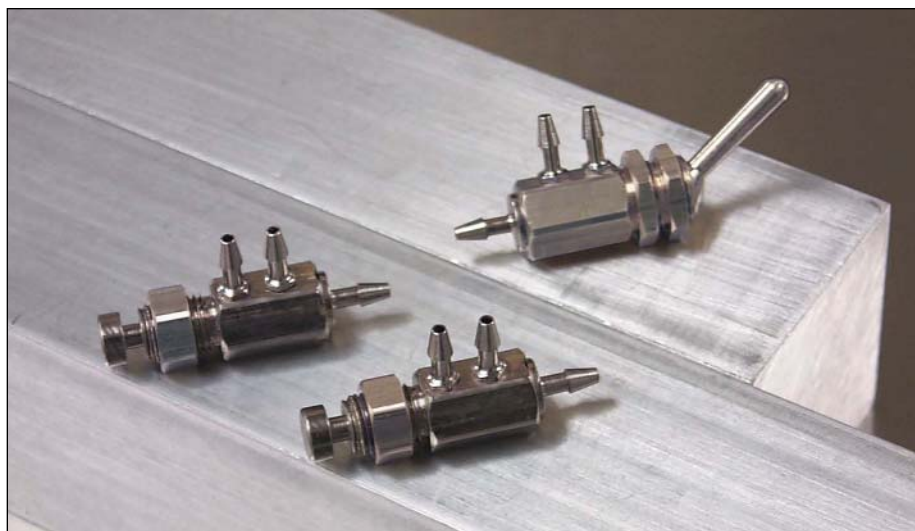
Ordering Information

- To order standard product refer to Product Information listing.
- Contact Pneumadyne for custom valve blocks or manifolds for use with the Cartridge Valves.
- Cavity drawings available, contact factory.

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

Features

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



2 & 3-Way Valves Sub-Micro

Pneumadyne'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 C_v 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 Pneumadyne'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.

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	20" Hg vacuum 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

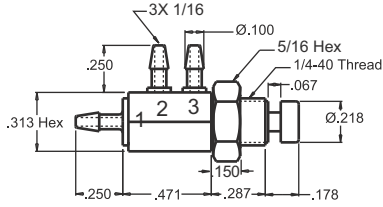
Plumbing Options for Fully Ported Valves

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

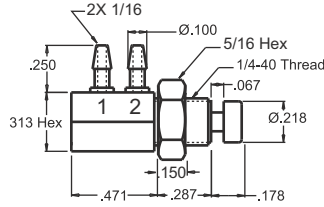
Note: For vacuum application, plumb vacuum source at port 3

C_v per ANSI / (NFPA) T3.21.3

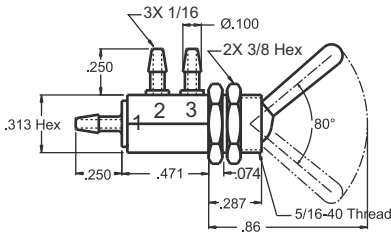
Sub-Micro Valve



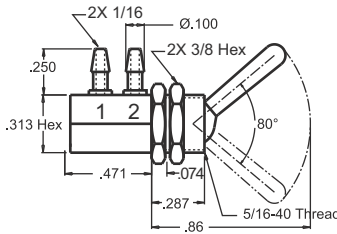
AMM-30-1616



AMM-20-1616

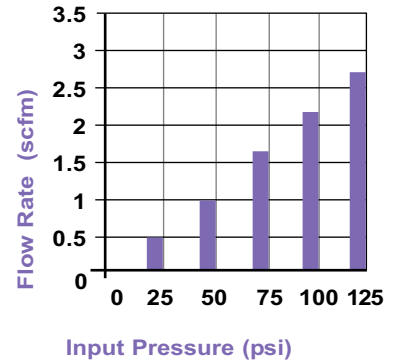


HMM-30-1616



HMM-20-1616

**Sub-Micro Valve
Flow Chart 3WNC**



Materials

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

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

Ordering Information

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

Product Information

Sub-Micro Valves

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

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

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

Features

- 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

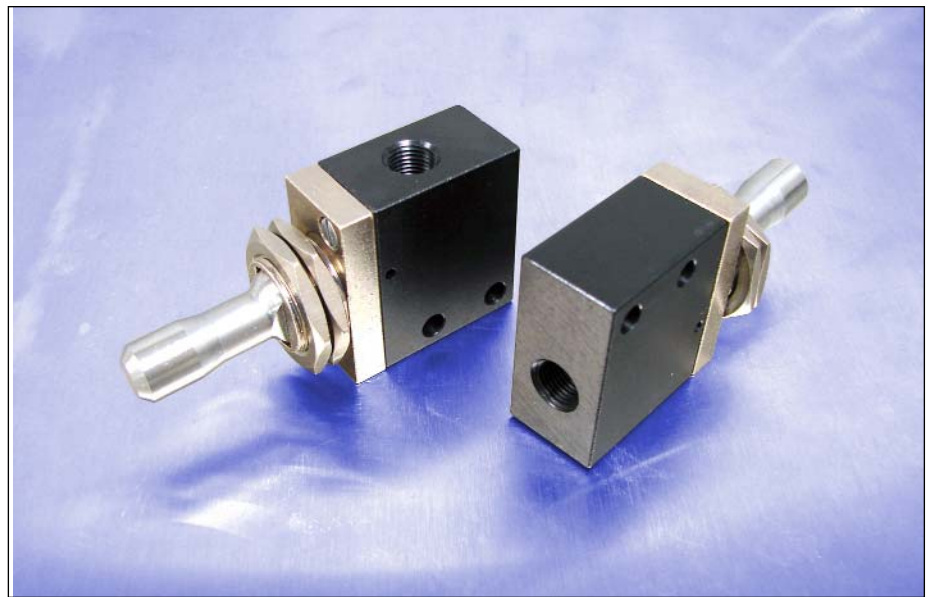
2 & 3-Way Valves 2-Position Toggle

Pneumadyne's 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).

Actuation Force

Pressure	2-Way	3-Way
50 psi	72 oz	72 oz
125 psi	7-1/2 lbs	7-1/2 lbs



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

2-Position Valve

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

Materials

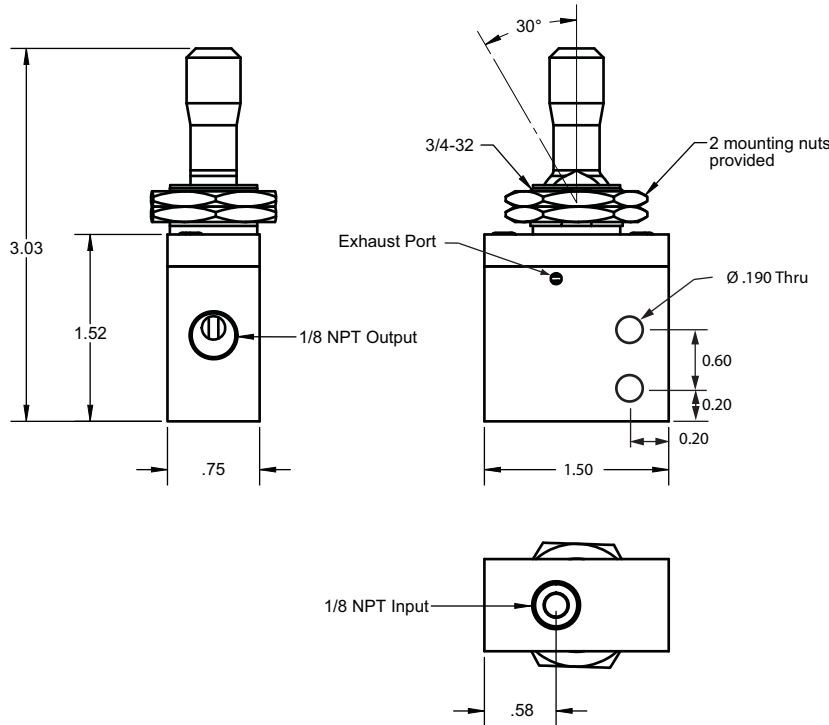
Aluminum/Anodize, Brass/Electroless Nickel, Stainless Steel, Buna-N (other seals available contact factory)

Mounting Method

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

2-Position Valve

C04230x-HD



Product Information

“400” Series
2-Position Toggle Valve

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

*Det= Detented

*Mom= Momentary

Accessory

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

3-Way valves exhaust to atmosphere

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

Ordering Information

- 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 Viton® O-ring seal, change the “CO” in the part number to “CV”.



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

Features

- 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



2 & 3-Way Valves 3-Position Toggle

The 3-Position Toggle Valve offers the highest flow rate of the Pneumadyne 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.

Performance Data

		Temperature Range	-20° to 160° F				
Product	Flow Path	Operating Pressure	C _v	Flow Rate (scfm)		Fill Time	Exhaust Time
				50 psi	125 psi	sec/ in ³ 0-90 psi	sec/ in ³ 100-10 psi
C04240X	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



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

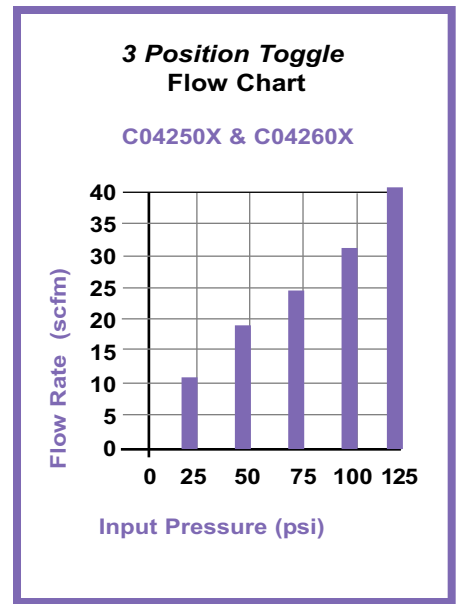
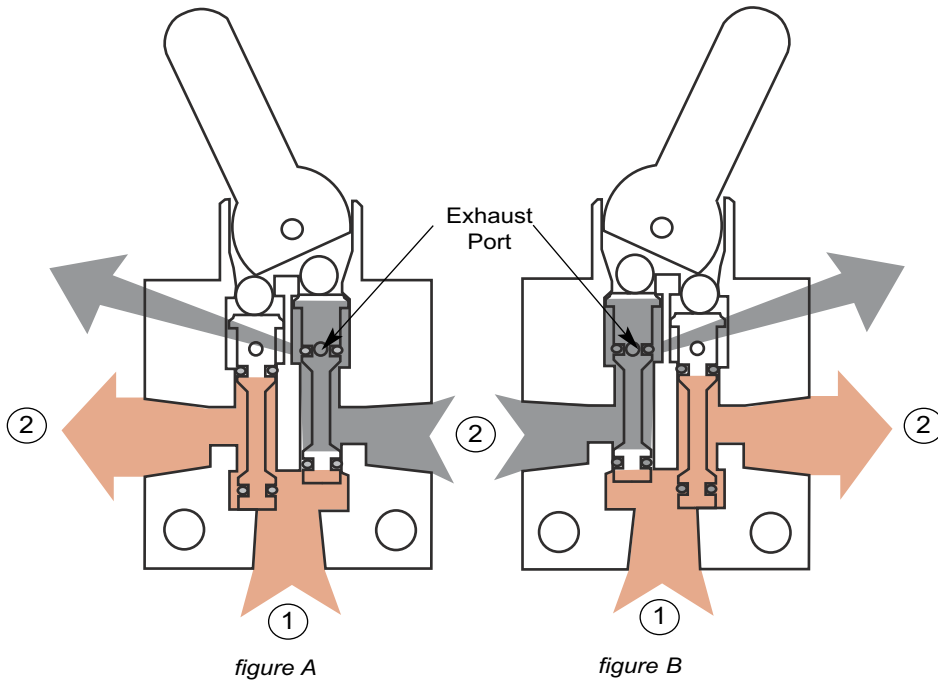
Actuation Force

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 Cross Section 3-Way Normally Closed



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

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.

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	<i>non-threaded (3-Way exhausts to atmosphere)</i>

Mounting Method

	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

The 3-Position Toggle Valve offers the highest flow rate of the Pneumadyne valve line

Product Information

"400" Series 3-Position Toggle Valve

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)

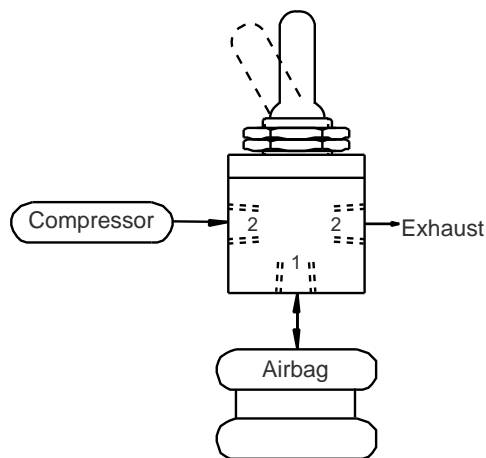
C042501-HD	1/8 NPT (F)	Det/ Det
C042502-HD	1/8 NPT (F)	Det/ Mom
C042503-HD	1/8 NPT (F)	Mom/ Mom

Accessory

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

Application Idea

Dual Function Use:



2-Way High Flow

C042803 & C042903 Flow Path 2-1

- Inflate and deflate an air bag lift device (shown above)
- Dual pressure selector

3-Way Standard

C04250X Flow Path 1-2 (not shown)

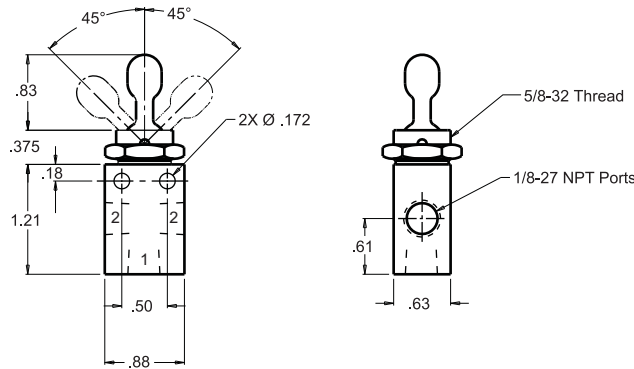
- Can be used in 4-Way applications (open center) to extend and retract cylinders
- Pneumatic pilot control on a hydraulic valve

Ordering 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 Viton® O-ring seal, change the "CO" in the part number to "CV".

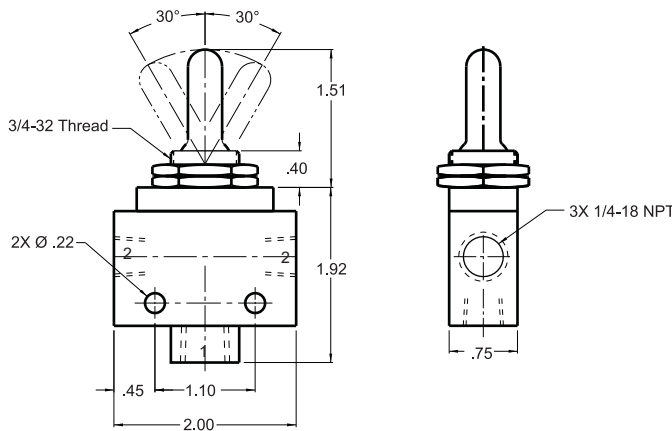
3-Position Toggle

Mini
C04240X

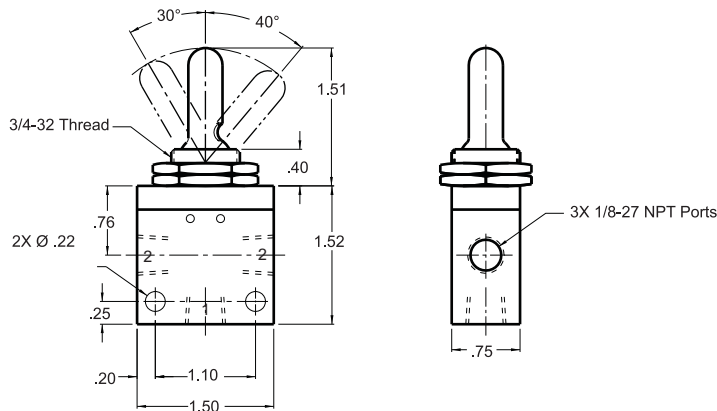


The smaller electroless nickel version (C04240X) is ideal in limited space applications.

1/4 NPT
C04290X



1/8 NPT
C04250X
C04260X
C04280X



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

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

Features

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



6-Position Selector Valve

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.

Performance Data

Temperature Range	Operating Pressure
-20° to 160° F	0 to 125 psi

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		
MPS-6-100	.11	4.0	8.8	.0313	0.0313
MPS-6-100-S	.09	3.2	6.7	.0428	.0428

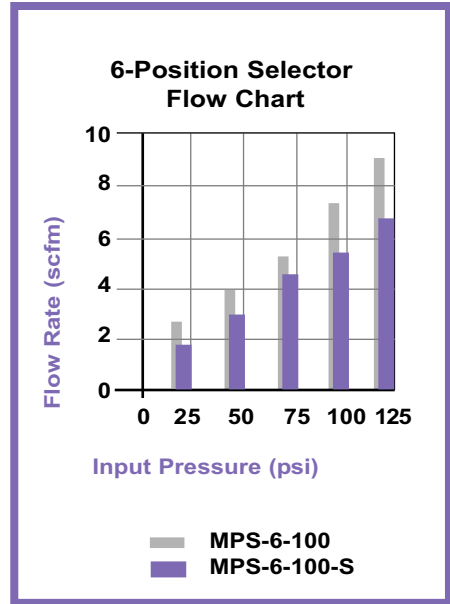
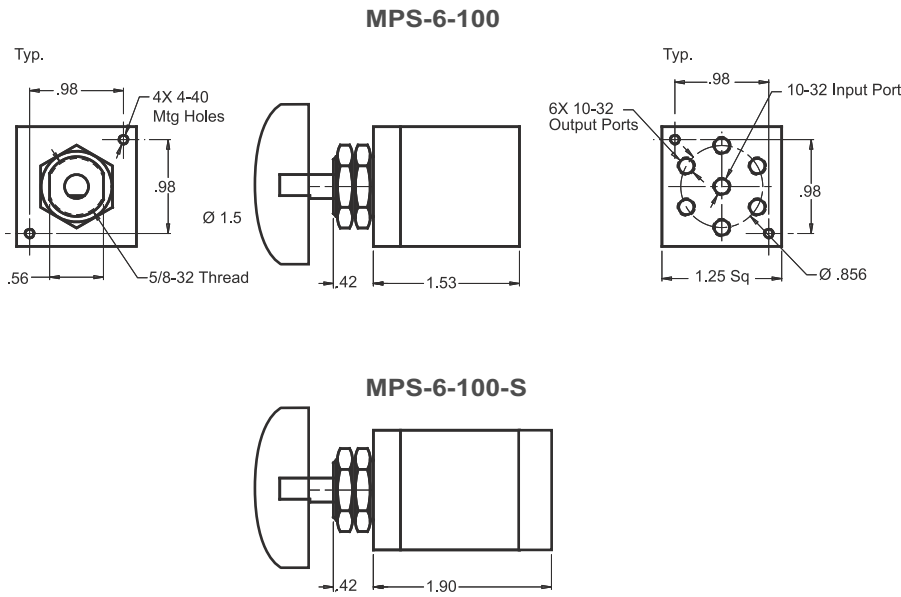
C_v per ANSI / (NFPA) T3.21.3

Materials

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

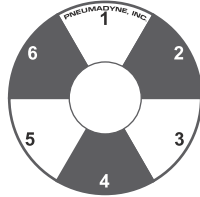
Pneumadyne’s Selector Valves allow the actuation of up to six individual circuits

6-Position Selector



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

Push-to-Connect Fittings
(sold separately)
Product No.
SF-125PI
SF-156PI



- Push-to-Connect: 1/8" or 5/32" OD PU tube
- Collet design ensures superior clamping with various types of tubing
- Electroless nickel plated brass

Product Information

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

Mounting Method

Panel	Nominal mounting hole dimension
	41/64"

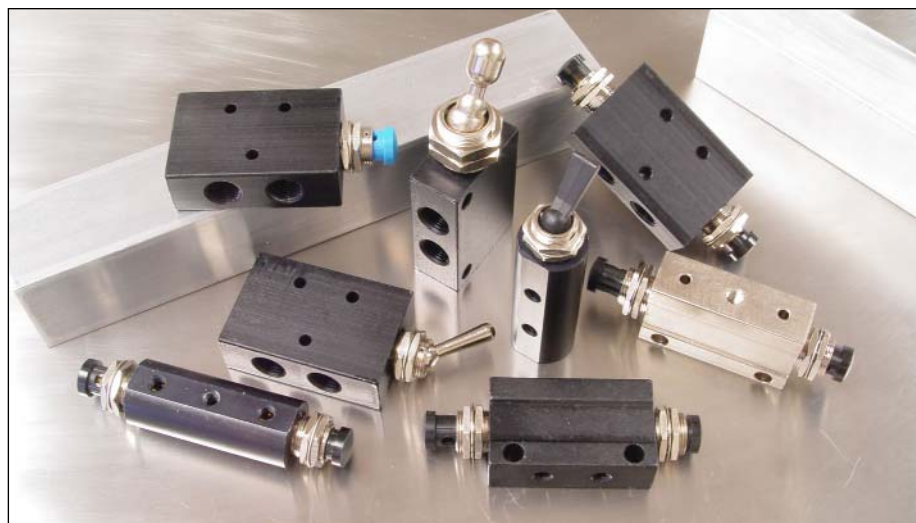
(2) nuts provided

Ordering Information

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

Features

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



4-Way Valves “4” & “45” Series

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.

Pneumadyne 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.

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

Definition	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	<ul style="list-style-type: none"> ● (x3) 10-32 (F) ● (x3) 5/32” PI ● (x3) 1/8 NPT (F) 	<ul style="list-style-type: none"> ● (x3) 1/4” PI ● (x3) 1/8” PI 	non-threaded NOT TO BE RESTRICTED

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

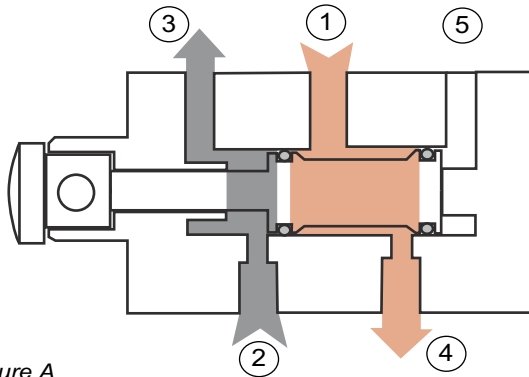


figure A

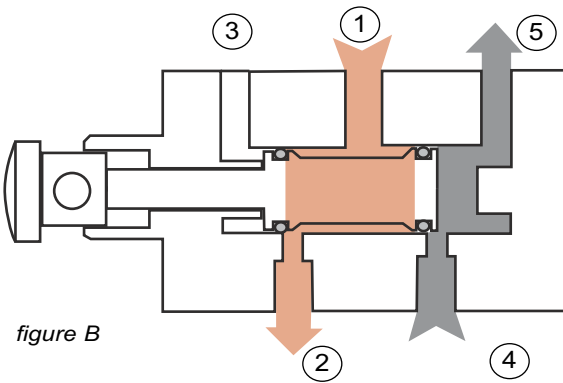


figure B

Function

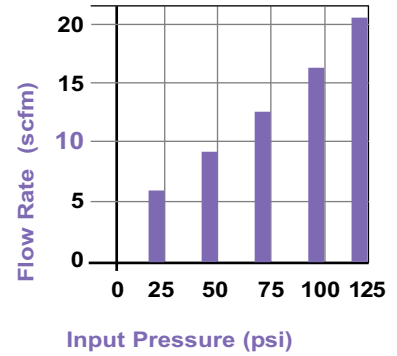
In the example above (figure A) flow is directed through port 1 to port 4 as port 2 exhausts to atmosphere through port 3.

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.

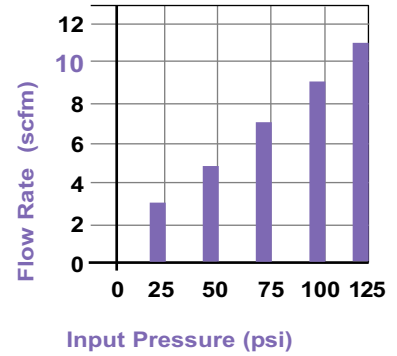
Actuation Force

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 Button	16 oz	3 lbs	16 oz	3 lbs	12 oz	12 oz

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



4 Series
Flow Chart

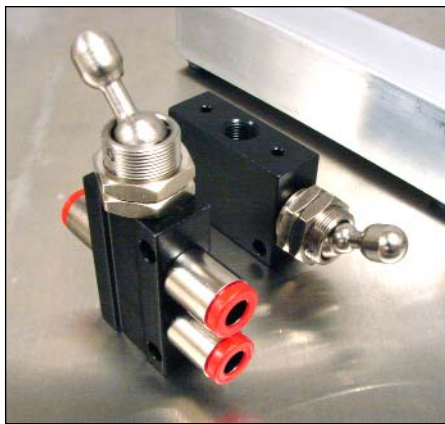


Materials

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

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



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

Ordering Information

- 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 ([see color code chart](#)).

Product Number Diagram

“4” Series

A 4 C - 1 0 0 - D P

Actuator

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

Series

- 4= “4” Series

Finish

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

Port Options

- 100= 10-32 (F)
- 125= 1/8” Push-in
- 156= 5/32” Push-in
- 250= 1/4” Push-in
- 1/8= 1/8 NPT (F)

Actuator Style

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

Example:

“4” Series, Aluminum/ Black Anodize, 10-32 (F) ports, Double Push Button

“45” Series

A P 4 5 - 1 0 0 - S R

Actuator

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

Series

- 45= “45” Series

Port Options

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

Actuator Style

- DP= Double Push
- DT= Detented
- SR= Spring Return

Example:

“45” Series, Nylon Button, 10-32 Fully Ported, Spring Return

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

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
	F4C-100-SR	Heavy Duty Toggle-Mom
	F4N-100-SR	Heavy Duty Toggle-Mom- ENI
	H4C-100-DT	Heavy Duty Toggle-Det
	H4N-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
	F4C-1/8-SR	Heavy Duty Toggle- Mom
H4C-1/8-DT	Heavy Duty Toggle-Det	
1/8" Push-in	A4C-125-DP	Double Push Button
	A4C-125-PK	Push/Pull Knob
	A4C-125-SR	Button w/ Spring Return
	F4C-125-SR	Heavy Duty Toggle-Mom
H4C-125-DT	Heavy Duty Toggle-Det	
5/32" Push-in	A4C-156-DP	Double Push Button
	A4C-156-PK	Push/Pull Knob
	A4C-156-SR	Button w/ Spring Return
	F4C-156-SR	Heavy Duty Toggle-Mom
H4C-156-DT	Heavy Duty Toggle-Det	

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

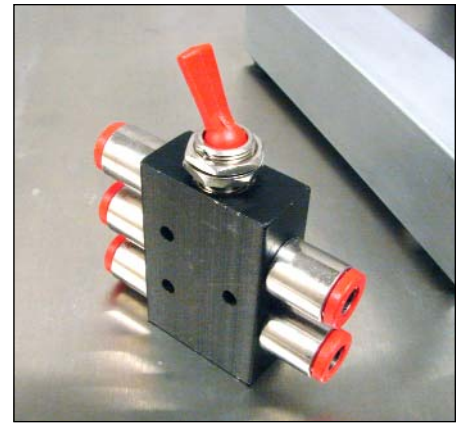
Porting	Part Number	Actuator
1/4" Push-in	A4C-250-DP	Double Push Button
	A4C-250-PK	Push/Pull Knob
	A4C-250-SR	Button w/ Spring Return
	F4C-250-SR	Heavy Duty Toggle-Mom
H4C-250-DT	Heavy Duty Toggle-Det	

“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

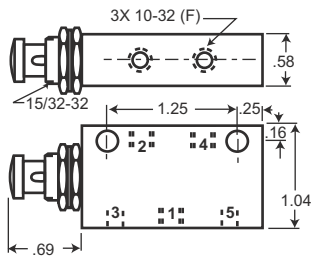
“45” Series
1/8 NPT (F) Fully Ported
4-Way 5 Port 2 Positions

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

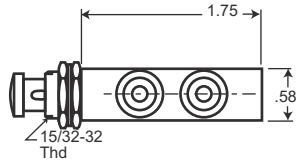


“45” series valves are also available with 1/8”, 5/32”, 1/4” and push-to-connect fittings

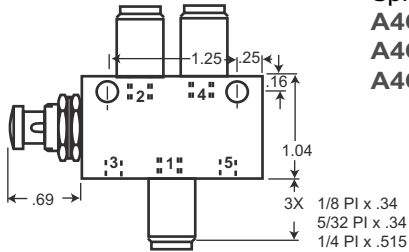
"4" Series



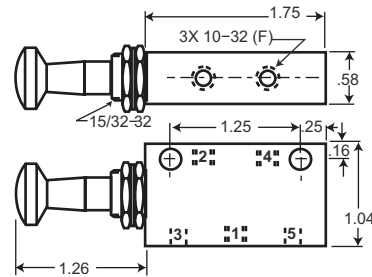
Spring Return
A4C-100-SR
A4N-100-SR



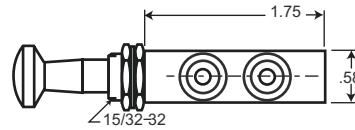
Spring Return
A4C-125-SR
A4C-156-SR
A4C-250-SR



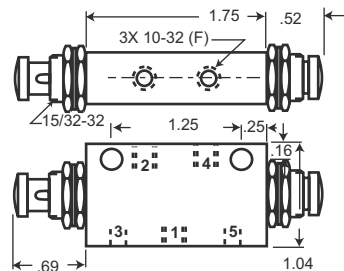
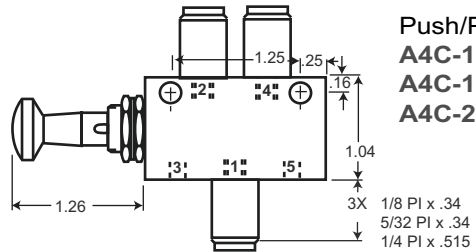
"4" Series



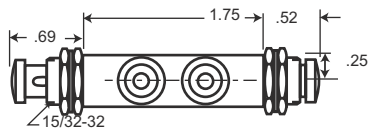
Push/Pull Knob
A4C-100-PK
A4N-100-PK



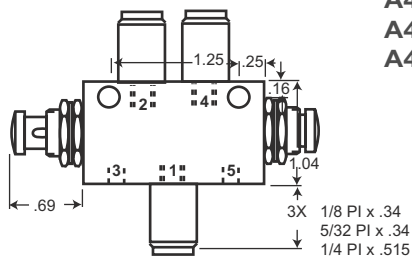
Push/Pull Knob
A4C-125-PK
A4C-156-PK
A4C-250-PK



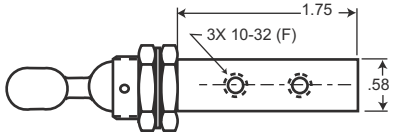
Double Push Button
A4C-100-DP
A4N-100-DP



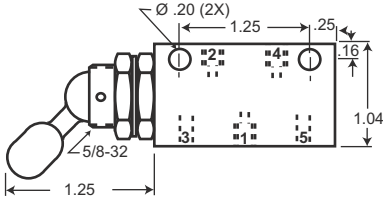
Double Push Button
A4C-125-DP
A4C-156-DP
A4C-250-DP



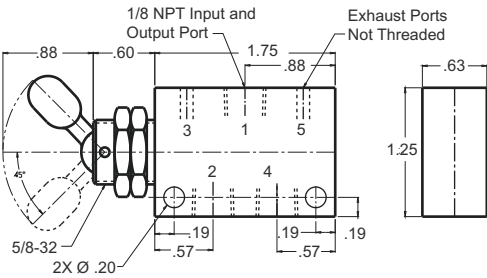
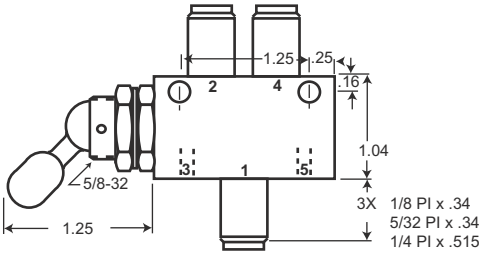
“4” Series



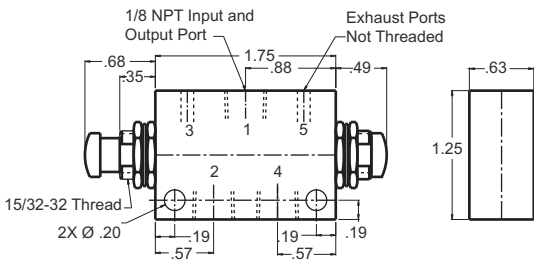
Heavy Duty Toggle
H4C-100-DT
H4N-100-DT
F4C-100-SR



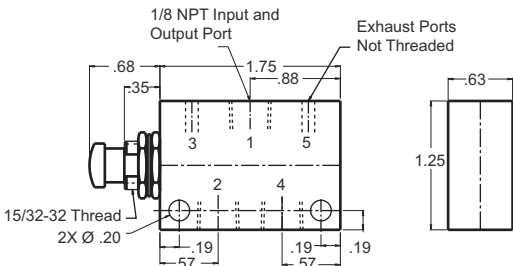
Heavy Duty Toggle
H4C-125-DT
H4C-156-DT
H4C-250-DT
F4C-125-SR
F4C-156-SR
F4C-250-SR



Heavy Duty Toggle
F4C-1/8-SR
H4C-1/8-DT



Double Push Button
A4C-1/8-DP

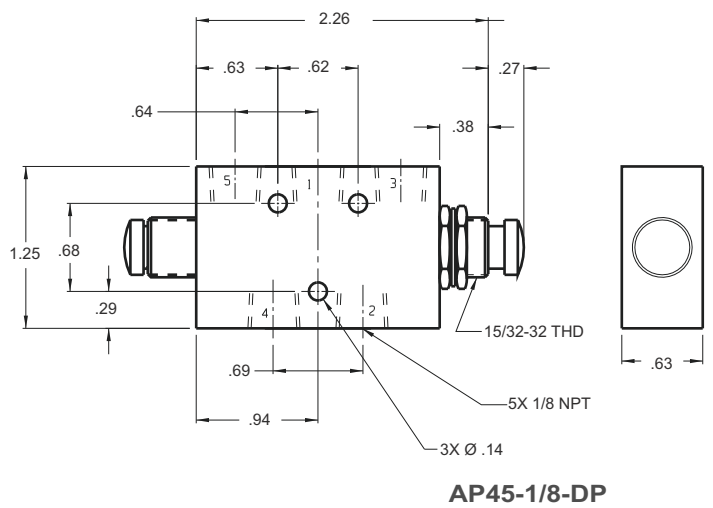
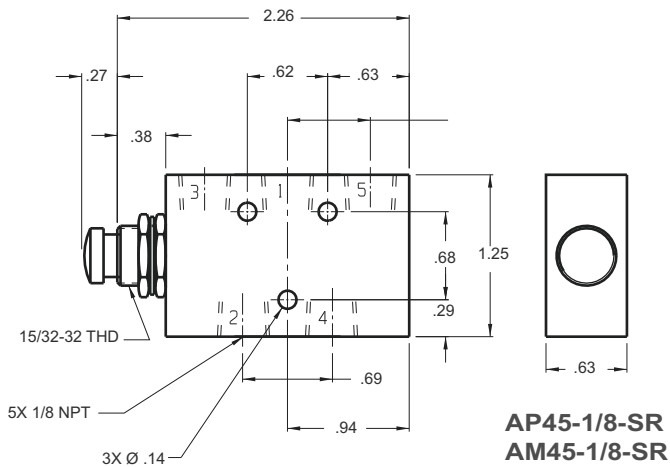
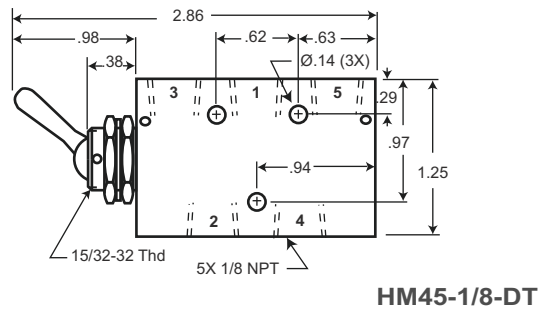
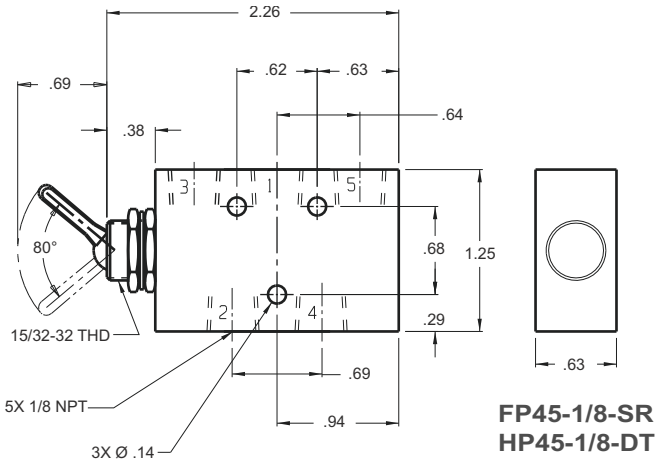


Spring Return
A4C-1/8-SR

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

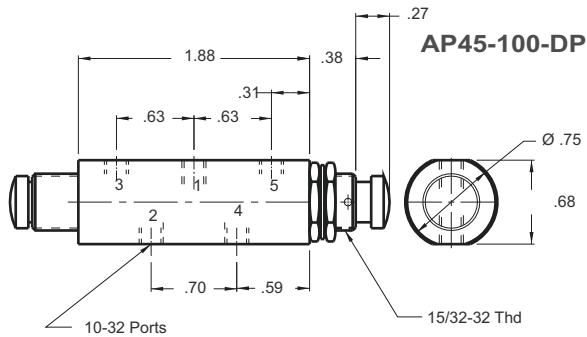
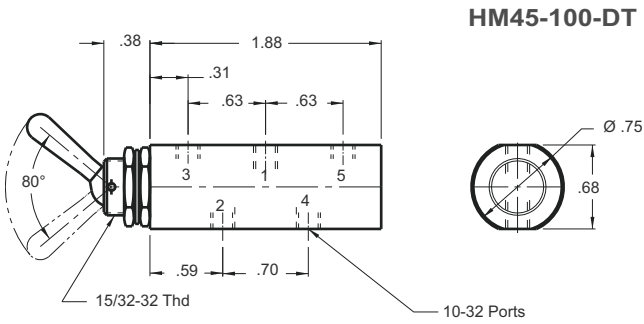
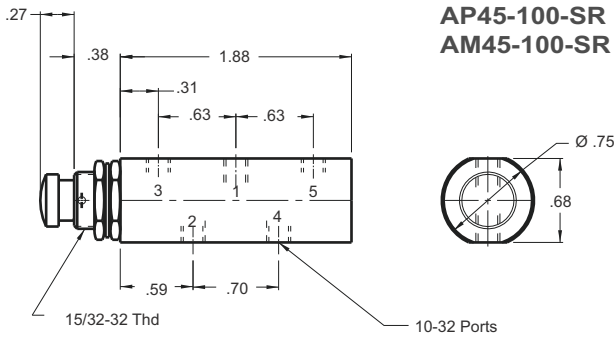
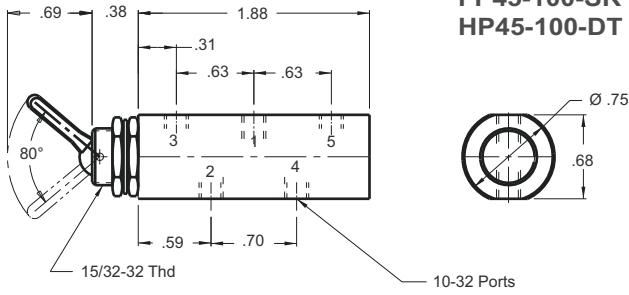
"45" Series

"45" Series



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

“45” Series



Features

- Space Saving
- Variety of components on single pressure source
- Precision manufacturing ensures consistent valve centers
- Accessories available to enhance operation



System 11 Valve Consolidation

System 11 is a method of consolidating 2 to 10 components with a common pressure source. Components available for placement on the System 11 manifold include "11" Series Regulators, "11" Series Valves ("A" style recommended) and "11" Series Needle Valves. All products feature swivel output porting for alignment convenience.

Optional Accessories

Products available to enhance the operation of the System 11 include:

- Air Pilot Operator
- Micro Gauges
- Thumb Operator
- Armored Push Button Operator

See [pgs 64-69](#) for additional information.

Performance Information

To avoid a starved system input supply should exceed total output demand.

Mounting Methods

The System 11 manifold can be **panel** mounted or **surface** mounted. For panel mounting all components must be the same height. Exact 1" center-to-center spacing makes it easy to predrill and insert the System 11 components through the panel and tighten down. For surface mounting to a machine member use either of the two sets of mounting holes provided.

Ordering Information

All System 11 assemblies are designed per order. Contact the factory for technical support regarding system requirements and to determine product configuration and part number.

1. Select component requirements.
2. Determine the sequence for component placement.
3. The quantity of manifold stations is determined by #1.
4. Select optional accessories.

All System 11 assemblies are assembled at the factory (System 11 manifolds are not sold separately). For component information refer to standard catalog information.

Product Information

System 11

"11" Series Regulators

	Part Number	Output
Relieving		
Knurled Knob	R11-RK-14	1/8 NPT (F)
	R11-RK-16	1/4 Push-in
	R11-RK-17	5-32 Push-in
Panel Knob	R11-RP-14	1/8 NPT (F)
	R11-RP-16	1/4 Push-in
	R11-RP-17	5-32 Push-in
Non-Relieving		
Knurled Knob	R11-NK-14	1/8 NPT (F)
	R11-NK-16	1/4 Push-in
	R11-NK-17	5-32 Push-in
Panel Knob	R11-NP-14	1/8 NPT (F)
	R11-NP-16	1/4 Push-in
	R11-NP-17	5-32 Push-in

"11" Series Needle Valves

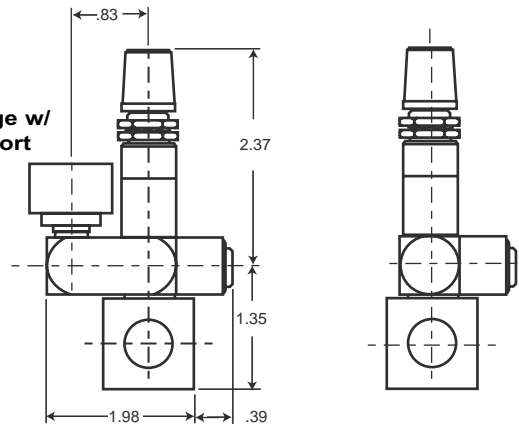
Part Number	Output
PNV11-14	1/8 NPT (F)
PNV11-16	1/4 Push-in
PNV11-17	5-32 Push-in

"11" Series Valves

Part Number	Output
2-Way Normally Closed	
*11-20-14	1/8 NPT (F)
*11-20-16	1/4 Push-in
*11-20-17	5-32 Push-in
2-Way Normally Open	
*11-21-14	1/8 NPT (F)
*11-21-16	1/4 Push-in
*11-21-17	5-32 Push-in
3-Way Normally Closed	
*11-30-14	1/8 NPT (F)
*11-30-16	1/4 Push-in
*11-30-17	5-32 Push-in
3-Way Normally Open	
*11-31-14	1/8 NPT (F)
*11-31-16	1/4 Push-in
*11-31-17	5-32 Push-in

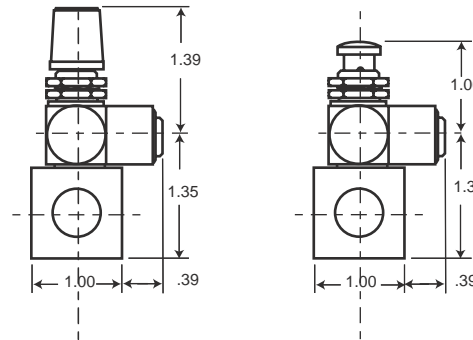
To indicate actuator selection replace the "*" in the above **Part Number** with one of the following:
 A= Push Button
 F= Momentary Toggle
 H= Detented Toggle

"11" Series Regulator Micro Gauge w/ extended port housing



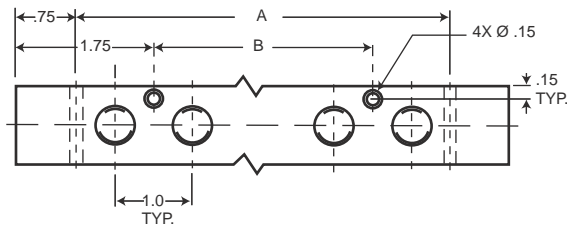
"11" Series Regulator mounted on manifold

"11" Series Needle Valve mounted on manifold



"11" Series Valve mounted on manifold

System 11 Manifold



System 11 Manifold

Number of Stations	Mounting Dimension		OAL
	A	B	
M11-2	2	-	3.5
M11-3	3	1	4.5
M11-4	4	2	5.5
M11-5	5	3	6.5
M11-6	6	4	7.5
M11-7	7	5	8.5
M11-8	8	6	9.5
M11-9	9	7	10.5
M11-10	10	8	11.5

All measurements are given in inches unless otherwise specified.

The System 11 components are modified for use only on the System 11 manifold

For additional component information and performance data please refer to standard product sections

System 11 manifolds feature 1/4 NPT (F) input ports

Features

- 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



Oil Tight Operators

Pneumadyne’s offering of Oil Tight Operators provides a selection of push buttons in flush, raised and mushroom styles as well as key, knob and lever 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 Pneumadyne’s push button style valves. The AOT Adapter is required to install the operator on to the valve.

Pneumadyne custom designs products for use in definite purpose applications

Product Information

Size 30 Part Number	Description	Available Color	Valve Lock Washer Req.
FPB-30-*	Flush Push Button	2,3,4,5,6	
KEY-30	Key Lock Push-in and turn clockwise to lock, turn counterclockwise to unlock. Key removable in both positions.	2	
MPB-30-*	Mushroom Push Button	2,3,5	
PMH-30-*	Palm Mushroom Button	2,3,5	
PP-30-*	Push-Pull Button	2,3,5	
RPB-30-*	Raised Push Button	2,3,4,5,6,7	
SEL-301-2	2 Position Knob Selector-Det	2	●
SEL-302-2	2 Position Knob Selector-Mom	2	●
SMB-30-*	Shrouded Mushroom Button	2,3	
TL-30-2	Toggle Lever - Detented	2	●
AOT	Oil Tight Adapter	2	

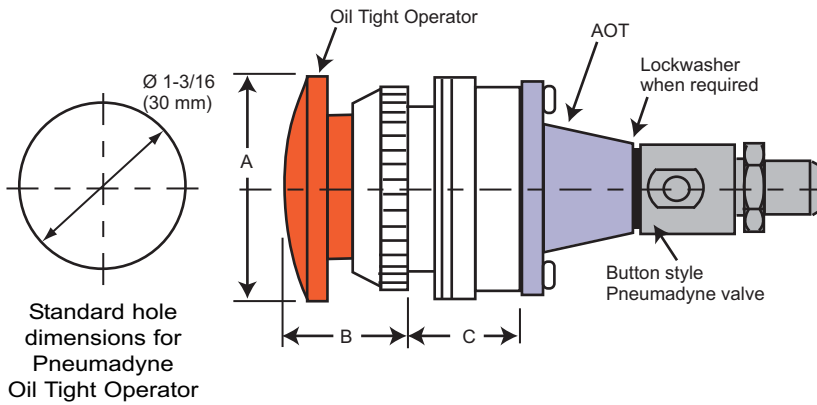
* Use color code to indicate color selection not all colors are available to all actuators see “Available Color” for possible selections

- 2= Black
- 4= Blue
- 6=Yellow
- 3= Red
- 5= Green
- 7= Orange

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

Oil Tight Operators

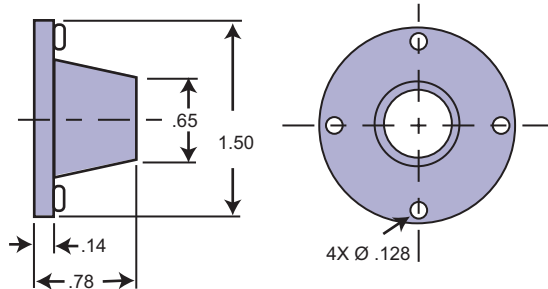
Typical Oil Tight Operator with Valve installed



Size 30 Part Number	Dimensions		
	A	B	C
FPB-30-*	1.378	.354	.669
KEY-30	1.378	.906	1.004
MPB-30-*	1.575	.827	.669
PMH-30-*	2.800	1.180	.669
PP-30-*	1.575	1.614	.945
RPB-30-*	.950	.610	.669
SEL-301-2	1.378	.866	.984
SEL-302-2	1.378	.866	.984
SMB-30-*	1.890	.906	.790
TL-30-*	1.378	.984	.591

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

Oil Tight Adapter



Part Number: AOT

Mounting screws included (2 each)

The Oil Tight Operators can be used with most Pneumadyne directional control valves

Ordering Information

- To order standard product refer to Product Information listing.
- All parts sold separately.
- Two keys are provided with the Key Lock Operator.

Features

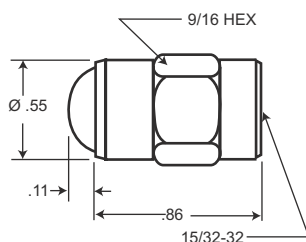
Accessories to customize and enhance our standard product line are sold separately

- **Operators:**
 - Armored button
 - Ball Operator
 - Air Pilot
 - Shrouded Button Operator
 - Heavy Duty Operator
 - Foot Pedal
 - Cam Operators
 - Thumb Operator
- **Mounting Brackets**
- **Dress Plates**
- **Micro Gauge**



Valve Accessories

Ball Operators



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

Designed for use on Pneumadyne push button valves (15/32-32 Thd). A captured stainless steel ball bearing has direct contact with the valve button. (Not for use on "4" Series valves)

Product Information

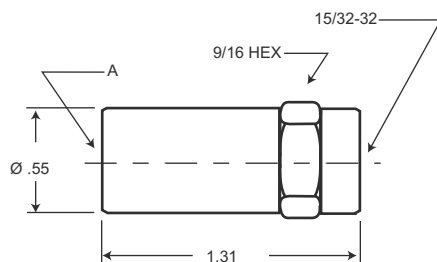
Part Number	Max. Stroke	Mounting
BA-1	.11"	15/32-32 (F)

- Refer to [Force to Actuate chart](#) for actuation information.

Materials

Brass/ Electroless Nickel, Stainless Steel

External Air Pilot Operators



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

Designed for use on Pneumadyne push button valves (15/32-32 Thd) and available in two port sizes. A brass piston and Buna-N cup seal ensure consistent leakproof actuation (the valve returns the piston). Ideal for remote actuation of valves using a pneumatic signal.

Product Information

Part Number	Air Pilot Port "A"	Mounting
AP-1	10-32 (F)	15/32-32 (F)
AP-2	1/8 NPT (F)	15/32-32 (F)

- Refer to [Force to Actuate chart](#) for actuation information.

Materials

Brass/ Electroless Nickel, Buna-N

Low Pressure Air Pilot Operator

Designed for use with Pneumadyne push button valves. The design of the internal piston in conjunction with a low friction u-cup minimizes drag allowing faster valve actuation. 10-32 (F) pilot port for use with Pneumadyne o-ring style barb and push-to connect fittings.

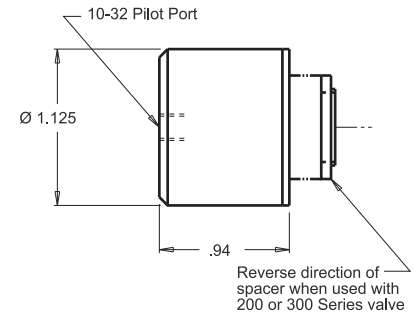
Product Information

Part Number	Mounting
APLP-1	15/32-32 (F)

- Refer to [Force to Actuate chart](#) for actuation information.

Materials

Aluminum/ Anodize, Aluminum/ Electroless Nickel, Aluminum, Buna-N



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

Shrouded Button Operator

Designed for use with Pneumadyne 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.

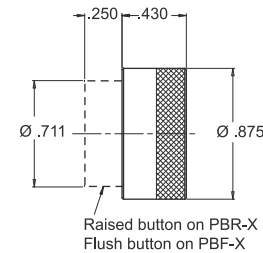
Product Information

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	

- Refer to [Force to Actuate chart](#) for actuation information.

Materials

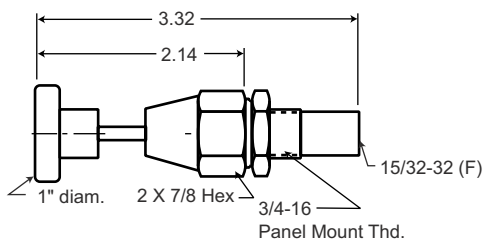
Aluminum/ Anodize, Aluminum/ Electroless Nickel, Brass



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.

Heavy Duty Operator



The heavy duty operator is designed for use on Pneumadyne push button valves and is available in **push** and **push-to-lock** styles. Ideal for heavy duty industrial use.

Product Information

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

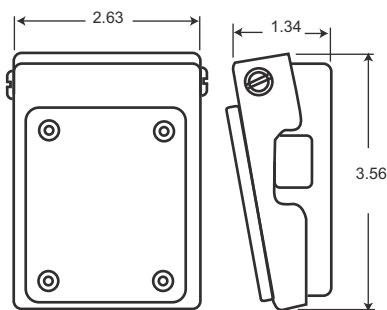
● Refer to [Force to Actuate chart](#) for actuation information.

Stroke ratio defined in glossary (pg 225)

Materials

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

Foot, Hand, Knee Operator



One locknut and designated spacer are required for installation (locknut supplied with valve)

Designed for use with Pneumadyne "O", "11" and "300" Series valves. An adhesive backed thick rubber pad is riveted to the steel pedal for skid resistance and comfort. (Not for use on "4" or "45" 1/8 NPT Series valves)

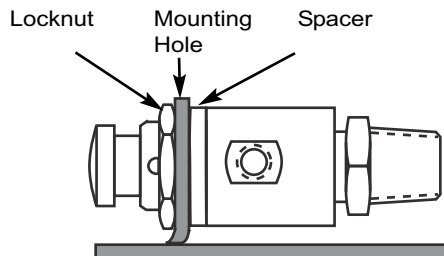
Product Information

Part Number	Max. Stroke
FPA	Approximately .20"

● Refer to [Force to Actuate chart](#) for actuation information.

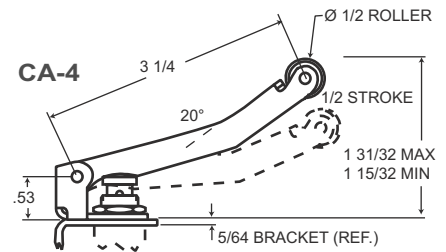
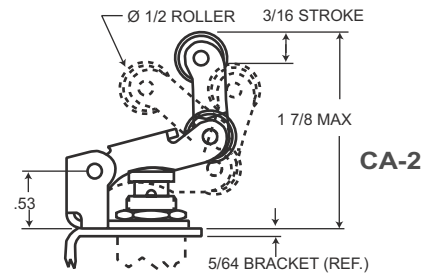
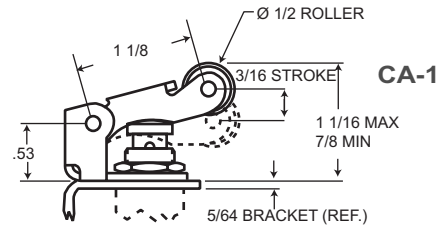
Materials

Steel/ Dichromate, Stainless Steel, Aluminum, Brass, Buna-N



Cam Operators

Designed for use on Pneumadyne 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)*



Product Information

Part Number	Stroke Ratio	Mounting Holes
CA-1	2.1	31/64"
CA-2	2.5	31/64"
CA-4	6	31/64"

● Refer to [Force to Actuate chart](#) for actuation information.

Stroke ratio defined in glossary (pg 225)

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

Thumb Operators

Designed for use on Pneumadyne 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)*

Product Information

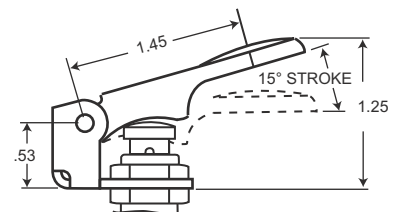
Part Number	Stroke Ratio	Mounting Holes
TA-1	2.7	31/64"

● Refer to [Force to Actuate chart](#) for actuation information.

Stroke ratio defined in glossary (pg 225)

Materials

Steel/ Electroless Nickel, Acetal, Stainless Steel



TA-1



● 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).

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

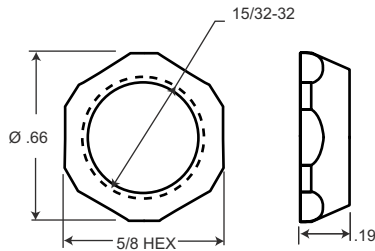
Force to Actuate

Valve Accessory Part Number

Pneumadyne Product Line Force to Actuate	AB-1	AP-1	APLP-1	BA-1	CA-1	CA-2	CA-4	FPA	HDO	PBF-X	TA-1
	AB-2 Lbs	AP-2 psi	psi	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	PBR-X Lbs	Lbs
"O" Series; NO											
50 psi	3.00	25	3.6	3.00	1.50	1.25	.50	3-6	6.00	3.00	1.25
125 psi	5.30	44	6.4	5.30	2.50	2.25	1.00	3-6	8.75	5.30	2.25
"O" Series; NC											
50 psi	3.20	26	3.8	3.20	1.50	1.25	.75	3-6	6.25	3.20	1.25
125 psi	5.70	47	6.8	5.70	2.75	2.25	1.00	3-6	9.25	5.70	2.25
"3" Series											
50 psi	3.50	29	4.2	3.50	1.75	1.50	.75	3-6	6.50	3.50	1.50
125 psi	6.10	51	7.4	6.10	3.00	2.50	1.00	3-6	9.50	6.10	2.50
"11" Series; NO											
50 psi	7.60	63	9.2	7.60	3.75	3.00	1.25	3-6	10.50	7.60	3.00
125 psi	11.00	91	13.3	11.00	5.25	4.50	2.00	3-6	14.50	11.00	4.50
"11" Series; NC											
50 psi	3.80	32	4.7	3.80	2.00	1.50	.75	3-6	6.75	3.80	1.50
125	7.20	60	8.7	7.20	3.50	3.00	1.25	3-6	10.75	7.20	3.00
"200" Series											
50 psi	1.90	16	2.3	1.90	1.00	1.00	.50	3-6	5.00	1.90	1.00
125 psi	3.20	26	3.8	3.20	1.75	1.25	.75		6.75	3.20	1.25
"300" Series											
50 psi	2.50	21	3.1	2.50	1.25	1.00	.50	3-6	5.50	2.50	1.00
125 psi	3.20	26	3.8	3.20	1.50	1.25	.75	3-6	6.75	3.20	1.25
"400" Series											
50 psi	3.40	28	4.1	3.40	1.75	1.5	.75	3-6	6.50	3.40	1.50
125 psi	5.30	44	6.4	5.30	2.50	2.25	1.00	3-6	8.75	5.30	2.25
"4" Series											
50 psi	3.00	45	5.5	3.00					6.00	3.00	
125 psi	3.00	45	5.5	3.00					6.00	3.00	
"45" Series											
50 psi	5.00	45	5.5	5.00	2.50	2.00	1.00	3-6	8.00	5.00	2.00
125 psi	8.00	45	5.5	8.00	4.00	3.25	1.50	3-6	11.50	8.00	3.25

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

Product Information

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.

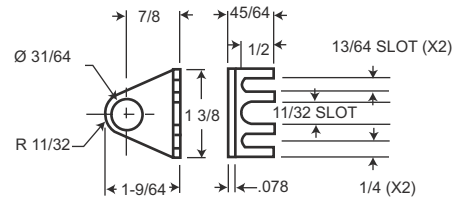
Product Information

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

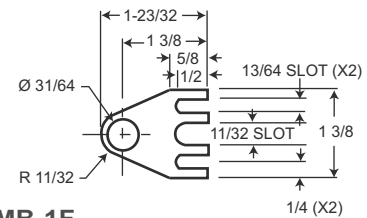
Materials

Steel/ Electro Nickel

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



MB-1
90° angle mounting bracket



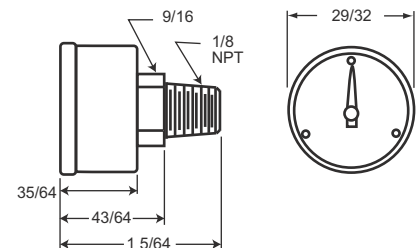
MB-1F
Flat mounting bracket

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 Pneumadyne “11” Series regulators with an extended gauge port, providing a point of use pressure indicator.

Product Information

Part Number	Pressure Range	Temp. 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					



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

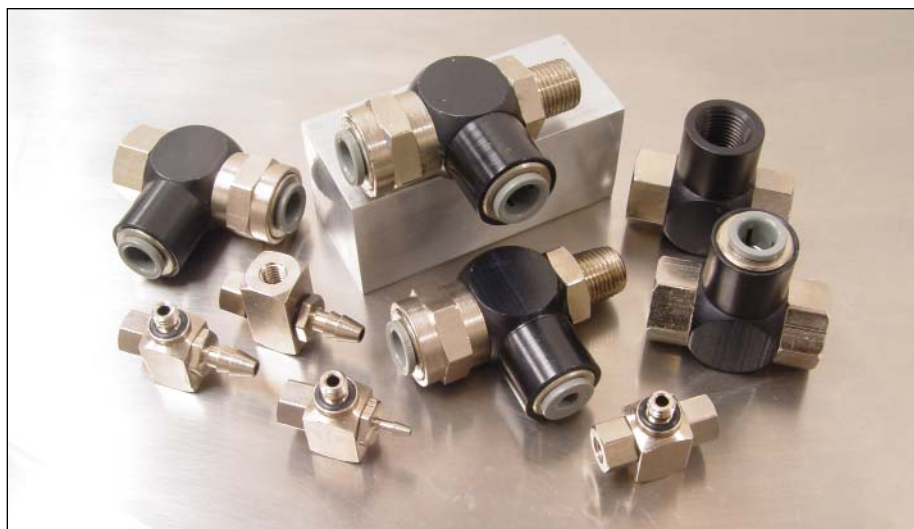
Materials

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

- Multiple porting options including push-to-connect fittings
- Space saving
- Long service life
- Low cracking pressure
- Porting versatility-eliminates excess fitting requirements



Shuttle Valves

Shuttle valves, also known as “OR” valves, automatically select the higher of two pressures allowing flow from one input to the output port.

Pneumadyne offers a large variety of porting options for plumbing convenience. The **SSV-10A** Series features barbed ports and Pneumadyne’s popular 10-32 thread with captured o-ring seal. These miniature shuttle valves are ideal for applications with limited space. The **SV11** Series shuttle valves feature 1/8 NPT (F) threads and push-to-connect ports which contribute to higher flow rates. Push-to-connect ports also reduce installation time by a minimum of 40% and eliminate the need for additional fittings.

Performance Data

Product Prefix	Temperature Range	Operating Pressure	C _v	Flow Rate (scfm)		Cracking Pressure
				50 psi	125 psi	
SSV-10A	-20° to 160° F	0 to 125 psi	.17	5.2	11.4	less than 1.0 psi
SV11	-20° to 160° F	0 to 125 psi	.48	15.0	33	less than 1.0 psi

C_v per ANSI / (NFPA) T3.21.3

Porting Options

Valve	SSV-10A-xxx		SV11-xxx-xx	
Port A Input	● 062 Barb ● 110 Barb	● 170 Barb ● 10-32 (F)	● 1/8 NPT (F) ● 1/4 Push-in ● 5/32 Push-in	
Port B Input	● 062 Barb ● 110 Barb	● 170 Barb ● 10-32 (F)	● 1/8 NPT (F) ● 1/4 Push-in ● 5/32 Push-in	
Port C Output	● 062 Barb ● 110 Barb ● 170 Barb	● 10-32 (F) ● 10-32 (M) ● 10-32 Adj. (M)	● 1/8 NPT (F) ● 1/4 Push-in ● 5/32 Push-in	● 1/8 NPT

- See [Product Number Diagram](#)

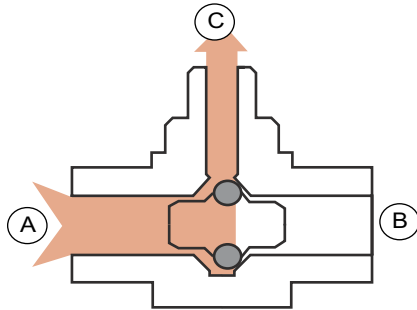
Materials

SSV-10A- Brass/ Electroless Nickel, Buna-N

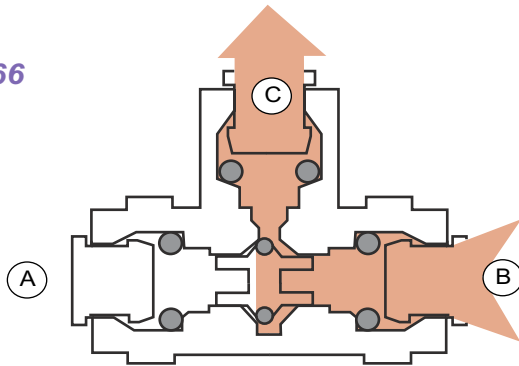
SV11- Aluminum/ Anodize, Buna-N, Acetal, Brass/ Electroless Nickel

Shuttle Valve Cross Section

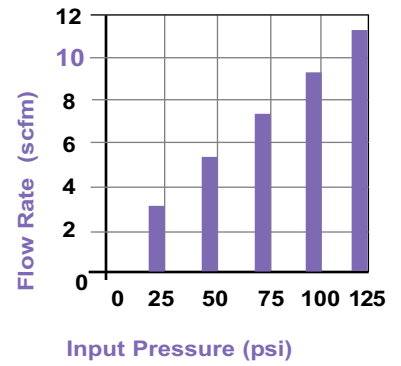
SSV-10A-MFF



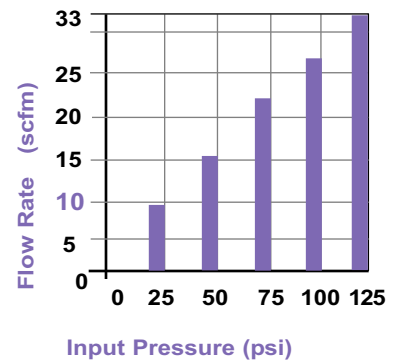
SV11-1/4PI-66



SSV-10A Series Flow Chart



SV-11 Series Flow Chart



Function

As pressure is applied to ports A & B, the higher of the two input pressures shifts the metal core blocking the other input port and allowing flow out port C.

Built-in port connectors, including push-to-connect fittings, reduce installation time by a minimum of 40%

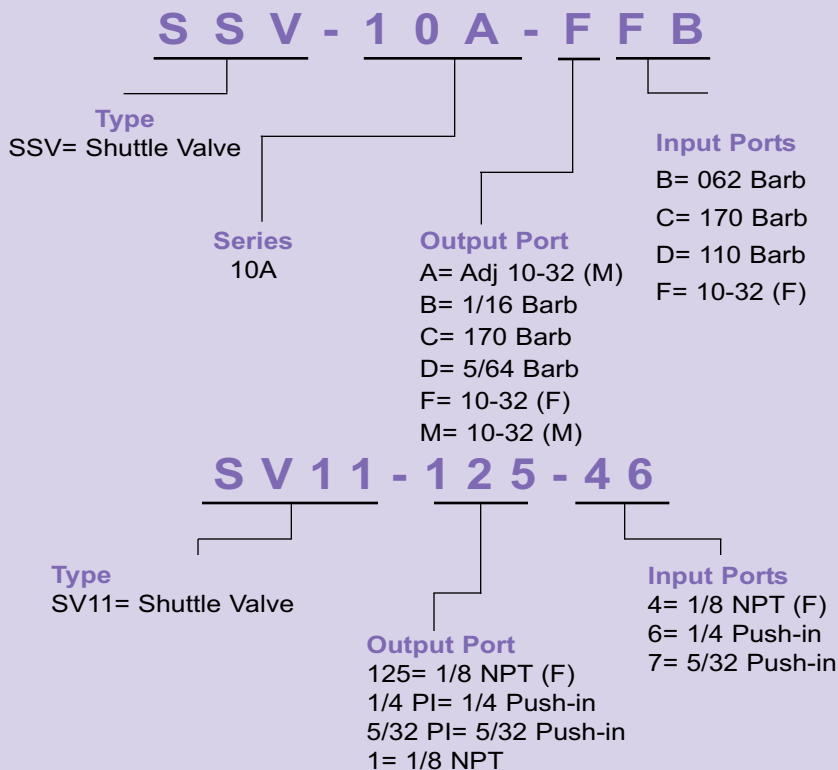


Product Information

SSV-10A-xxx

Part Number	Output x Input /Input
SSV-10A-ABB	10-32 Adj x 062 / 062
SSV-10A-ABC	10-32 Adj x 062 / 170
SSV-10A-ABD	10-32 Adj x 062 / 110
SSV-10A-ABF	10-32 Adj x 062 / 10-32 F
SSV-10A-ACC	10-32 Adj x 170 / 170
SSV-10A-ACF	10-32 Adj x 170 / 10-32 F
SSV-10A-ADC	10-32 Adj x 110 / 170
SSV-10A-ADD	10-32 Adj x 110 / 110
SSV-10A-AFD	10-32 Adj x 10-32 F / 110
SSV-10A-AFF	10-32 Adj x 10-32 F / 10-32 F
SSV-10A-BBB	062 x 062 / 062
SSV-10A-BBC	062 x 062 / 170
SSV-10A-BBD	062 x 062 / 110
SSV-10A-BBF	062 x 062 / 10-32 F
SSV-10A-BCC	062 x 170 / 170
SSV-10A-BCD	062 x 170 / 110
SSV-10A-BCF	062 x 170 / 10-32 F
SSV-10A-BDD	062 x 110 / 110
SSV-10A-BDF	062 x 110 / 10-32 F
SSV-10A-BFF	062 x 10-32 F / 10-32 F
SSV-10A-CBB	170 x 062 / 062
SSV-10A-CBC	170 x 062 / 170
SSV-10A-CBD	170 x 062 / 110
SSV-10A-CBF	170 x 062 / 10-32 F
SSV-10A-CCC	170 x 170 / 170
SSV-10A-CCD	170 x 170 / 110
SSV-10A-CCF	170 x 170 / 10-32 F
SSV-10A-CDD	170 x 110 / 110
SSV-10A-CDF	170 x 110 / 10-32 F
SSV-10A-CFF	170 x 10-32 F / 10-32 F
SSV-10A-DBB	110 x 062 / 062
SSV-10A-DBC	110 x 062 / 170
SSV-10A-DBD	110 x 062 / 110
SSV-10A-DBF	110 x 062 / 10-32 F
SSV-10A-DCC	110 x 170 / 170
SSV-10A-DCD	110 x 170 / 110
SSV-10A-DCF	110 x 170 / 10-32 F
SSV-10A-DDD	110 x 110 / 110
SSV-10A-DDF	110 x 110 / 10-32 F
SSV-10A-DFF	110 x 10-32 F / 10-32 F
SSV-10A-FBB	10-32 F x 062 / 062
SSV-10A-FBC	10-32 F x 062 / 170
SSV-10A-FBD	10-32 F x 062 / 110
SSV-10A-FCC	10-32 F x 170 / 170
SSV-10A-FCD	10-32 F x 170 / 110
SSV-10A-FDD	10-32 F x 110 / 110
SSV-10A-FFB	10-32 F x 10-32 F / 062
SSV-10A-FFC	10-32 F x 10-32 F / 170
SSV-10A-FFD	10-32 F x 10-32 F / 110
SSV-10A-FFF	10-32 F x 10-32 F / 10-32 F

Product Number Diagram Shuttle Valves



Tubing Recommendations:

- 062 barb for use with 1/16 ID Polyurethane Tubing
- 170 barb for use with 170 ID Polyethylene or .170 Polyurethane
- 110 barb for use with 7/64 ID Nylon or 5/64 ID Polyurethane

SSV-10A-xxx

Part Number	Output x Input /Input
SSV-10A-MBB	10-32 x 062 / 062
SSV-10A-MBC	10-32 x 062 / 170
SSV-10A-MBD	10-32 x 062 / 110
SSV-10A-MCC	10-32 x 170 / 170
SSV-10A-MCD	10-32 x 170 / 110
SSV-10A-MDD	10-32 x 110 / 110
SSV-10A-MFB	10-32 x 10-32 F / 062
SSV-10A-MFC	10-32 x 10-32 F / 170
SSV-10A-MFD	10-32 x 10-32 F / 110
SSV-10A-MFF	10-32 x 10-32 F / 10-32 F

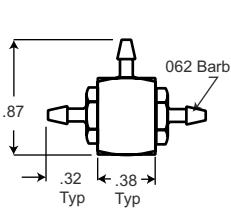
SV11-xxx-xx

Part Number	Output x Input/Input
SV11-1-44	1/8 x 1/8 F/ 1/8 F
SV11-1-46	1/8 x 1/8 F/ 1/4 PI
SV11-1-66	1/8 x 1/4 PI/ 1/4 PI

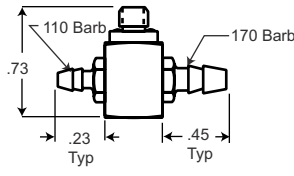
SV11-xxx-xx

Part Number	Output x Input/Input
SV11-1/4 PI-44	1/4 PI x 1/8 F/ 1/8 F
SV11-1/4 PI-46	1/4 PI x 1/8 F/ 1/4 PI
SV11-1/4 PI-66	1/4 PI x 1/4 PI/ 1/4 PI
SV11-1/4 PI-74	1/4 PI x 5/32 PI/ 1/8 F
SV11-1/4 PI-76	1/4 PI x 5/32 PI/ 1/4 PI
SV11-1/4 PI-77	1/4 PI x 5/32 PI/ 5/32 PI
SV11-125-44	1/8 F x 1/8 F/ 1/8 F
SV11-125-46	1/8 F x 1/8 F/ 1/4 PI
SV11-125-47	1/8 F x 1/8 F/ 5/32 PI
SV11-125-66	1/8 F x 1/4 PI/ 1/4 PI
SV11-125-67	1/8 F x 5/32 PI/ 1/4 PI
SV11-125-77	1/8 F x 5/32 PI/ 5/32 PI
SV11-5/32 PI-44	5/32 PI x 1/8 F/ 1/8 F
SV11-5/32 PI-46	5/32 PI x 1/8 F/ 1/4 PI
SV11-5/32 PI-47	5/32 PI x 1/8 F/ 5/32 PI
SV11-5/32 PI-66	5/32 PI x 1/4 PI/ 1/4 PI
SV11-5/32 PI-67	5/32 PI x 1/4 PI/ 5/32 PI
SV11-5/32 PI-77	5/32 PI x 5/32 PI/ 5/32 PI

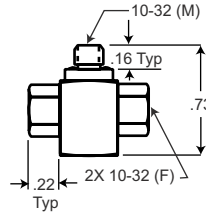
SSV-10A-xxx



SSV-10A-BBB



SSV-10A-MCD



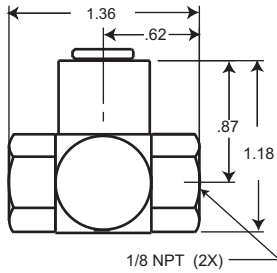
SSV-10A-MFF

Ordering Information

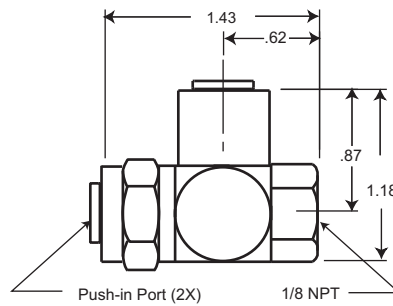
- To order standard product refer to Product Information listing.
- Optional seals available- contact factory.



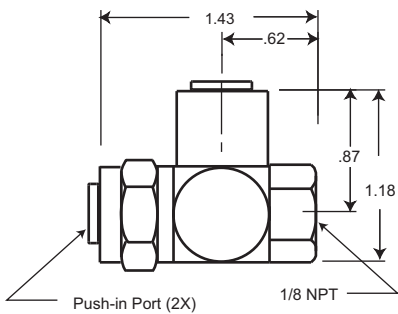
SV11-xxx-xx



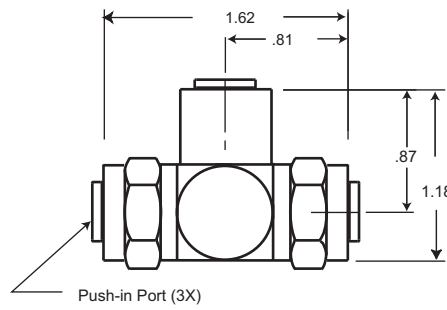
SV11-5/32 PI-44



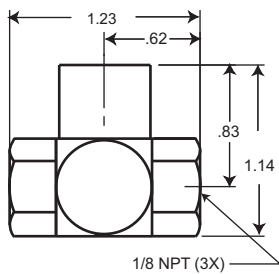
SV11-5/32 PI-47



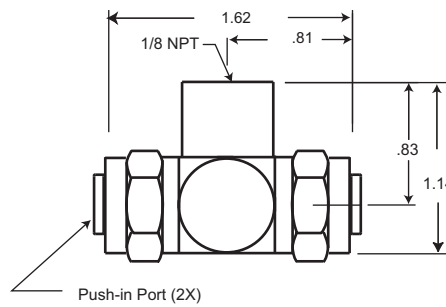
SV11-1/4 PI-46



SV11-1/4 PI-77



SV11-125-44



SV11-125-66

1/8 NPT male output ports available- contact factory

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

Features

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



Check Valves

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.



Twenty-One check valve configurations available

Performance Data

Temperature Range	Operating Pressure
-20° to 160° F	0 to 125 psi

Porting Option In/ Out	C _v	Flow Rate (scfm)		Cracking Pressure	Fill sec/ in ³ 0-90 psi
		50 psi	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

Check Valve Cross Section

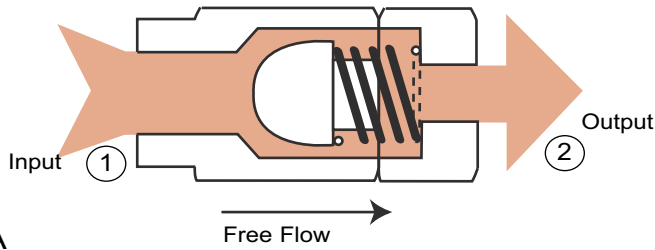


figure A

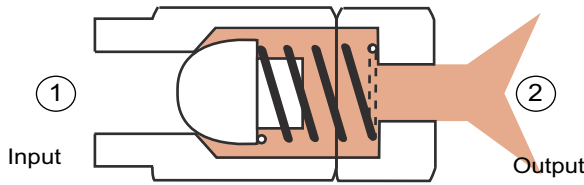


figure B

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.

Product Information

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 (F)
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



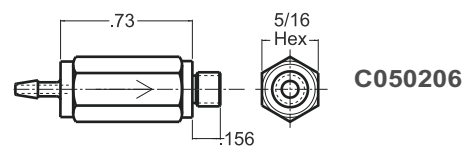
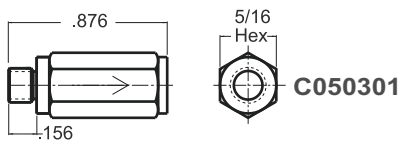
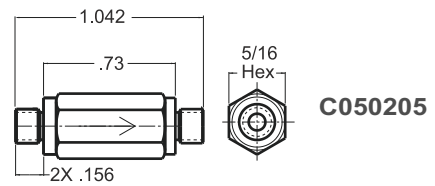
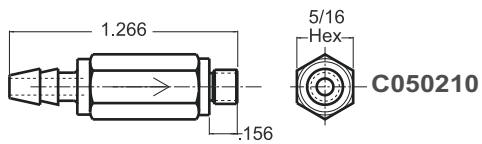
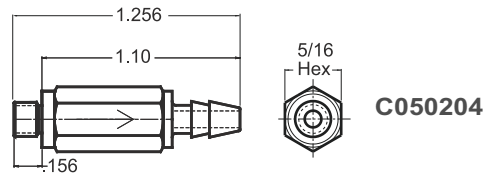
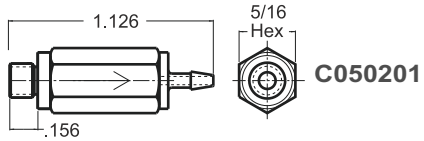
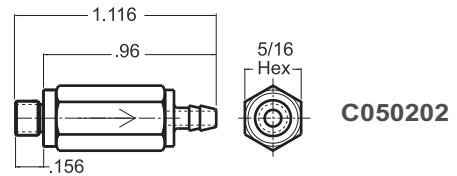
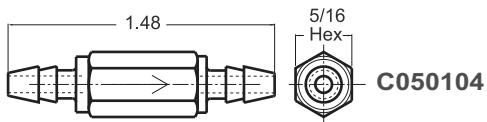
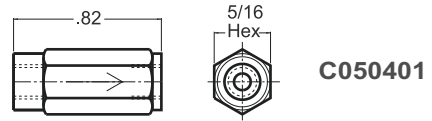
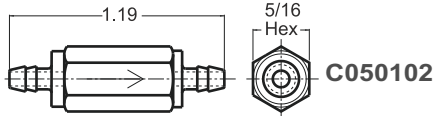
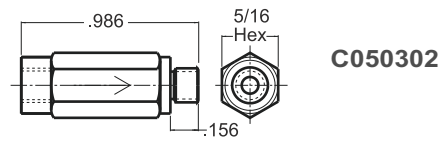
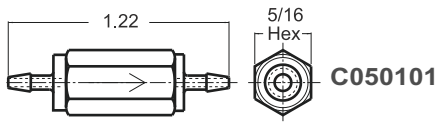
1/8 NPT (F) style utilizes a poppet and spring design

Ordering Information

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

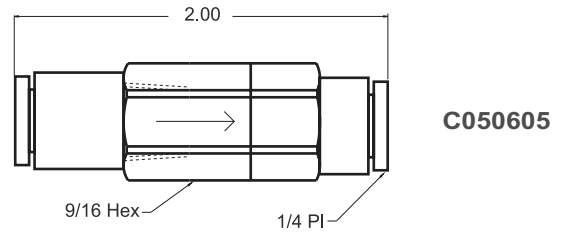
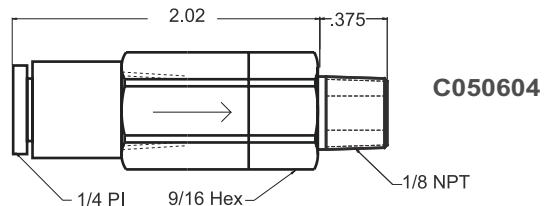
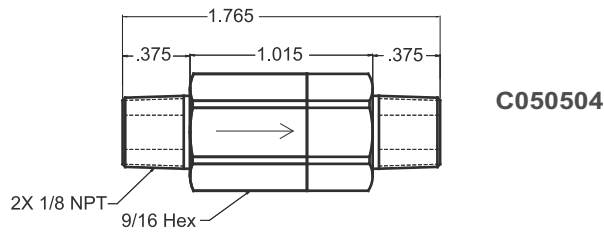
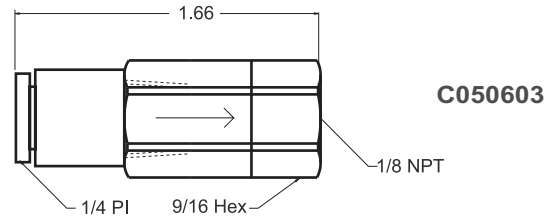
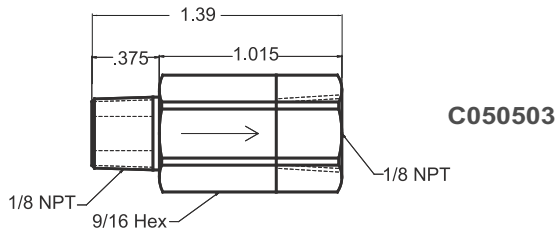
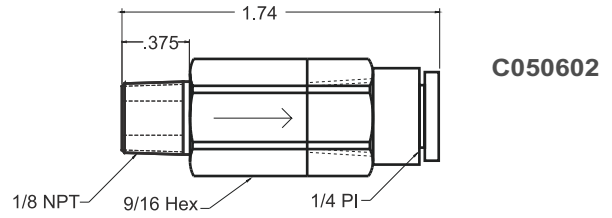
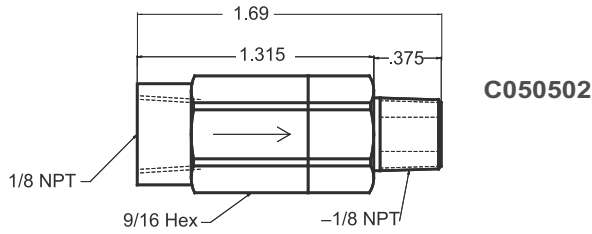
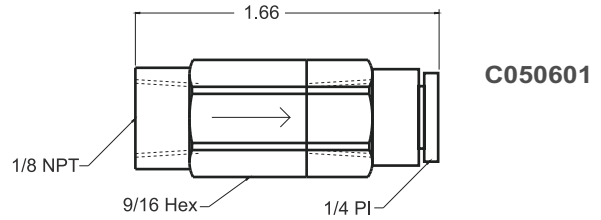
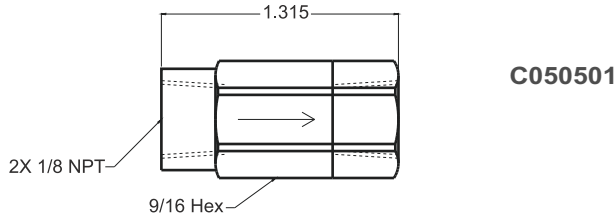
Check Valves

Check Valves



Check Valves

Check Valves



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

Features

- 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



Pilot Operated Check Valves

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.

Pneumadyne'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.

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

Performance Data

Part Number	Temperature Range	Operating Pressure (psi)	Maximum Supply Pressure (psi)	Cv	Cracking Pressure (psi)				
						Flow Rate (scfm) 1-2		Flow Rate (scfm) 2-1	
		50 psi	100 psi	50 psi	100 psi				
POC-41-F	0° to 160°F	15 to 150	150	.23	10	2.8	5.2	3.1	5.7
POC-61-F									
POC-68-F	-40° to 240°F	0 to 150	150	.35	less than .1	13	22	13	22
POC-68-6									

Media: Lubricated and non-lubricated air
C_v per ANSI / (NFPA) T3.21.3

Materials

POC-41-F & POC-61-F

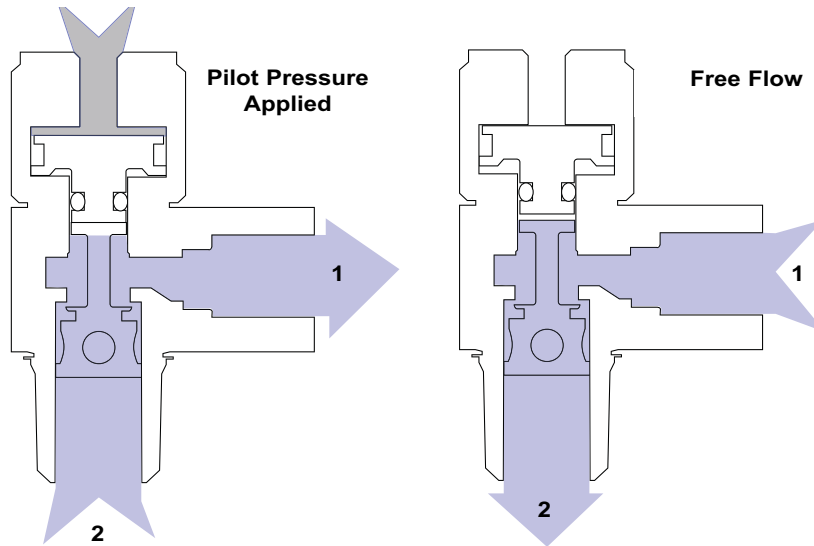
Body: Zinc Plated Brass & Anodized Aluminum
Internal Components: Brass, Stainless Steel & Polyamide
Seals: Buna-N
Spring: Stainless Steel

POC-68-F & POC-68-6

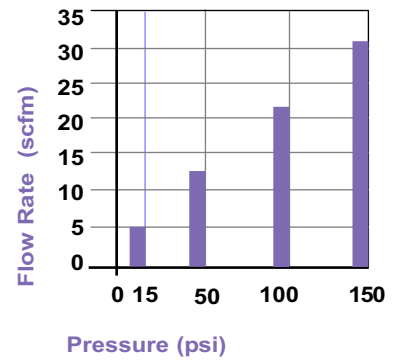
Body: Anodized Aluminum & Electroless Nickel Plated Brass
Stem: Brass
Seals: Buna-N
Spring: Stainless Steel

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

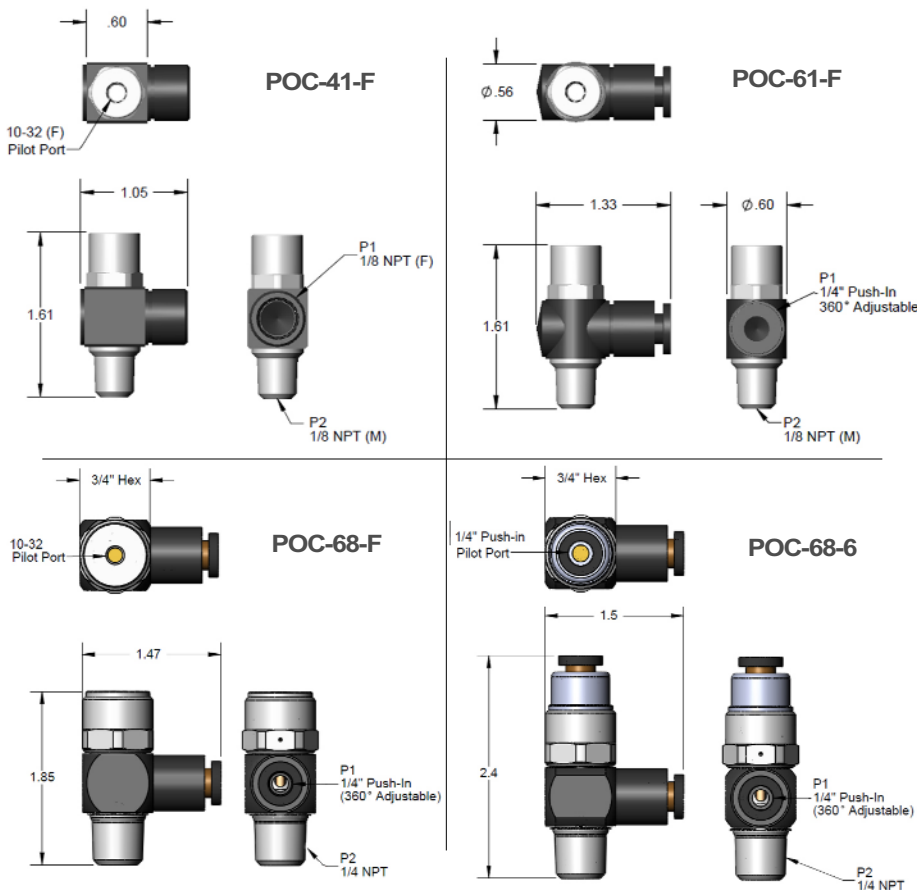
Pilot Operated Check Valves Cross Section



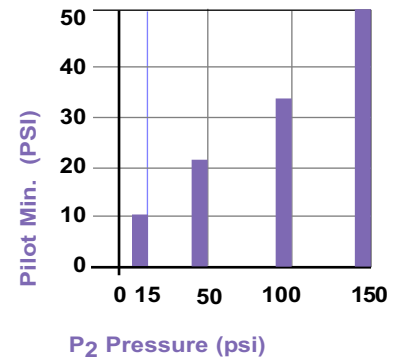
**Pilot Operated Check Valves
Flow Chart: POC-68-F**



Pilot Operated Check Valves



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



Product Information

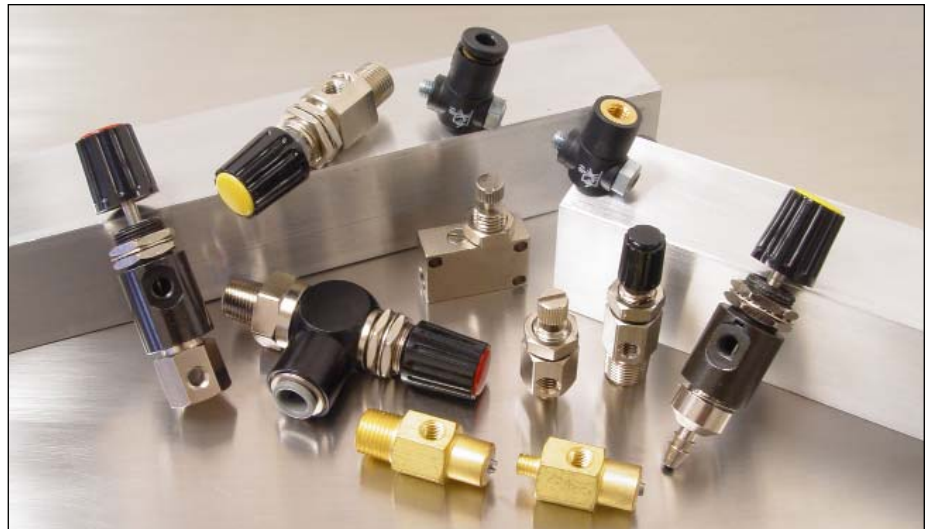
Part Number	Input	Output	Pilot
POC-41-F	1/8 NPT (F)	1/8 NPT	10-32 (F)
POC-61-F	1/4 PI	1/8 NPT	10-32 (F)
POC-68-F	1/4 PI	1/4 NPT	10-32 (F)
POC-68-6	1/4 PI	1/4 NPT	1/4 PI

Ordering Information

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

Features

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



Flow Control & Needle Valves

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** con-

trols flow in *both directions* (bi-directional) and the **flow control valve** controls flow in *only one direction* (allowing free flow in the opposite direction).

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.

Pneumadyne 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 fittings.*

Identification

"O" Series	Flow Control:	Needle Valve:
"11" Series	Red Cap	Yellow Cap
"700" Series knob	Low Flow: Brass	General Flow: Brass/ Electroless Nickel
Mini	Contact factory	

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
- Pneumadyne Flow Controls and Needle Valves are not leak tight. Not to be used as a shut-off device.

Performance Data

Temperature Range	Operating Pressure
-20° to 160° F	0 to 125 psi

Flow Control & Needle Valve

Product Group	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 Group	Flow Rate (scfm)		C _v	Cracking Pressure	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

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

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

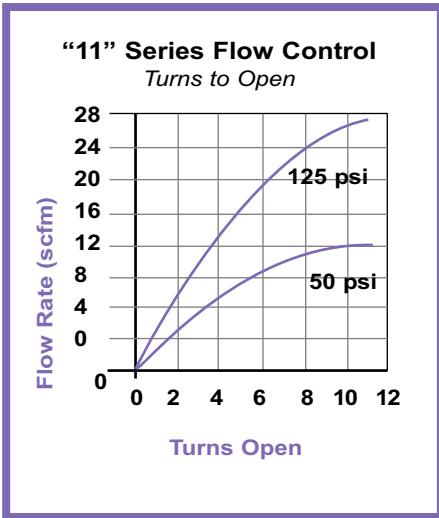
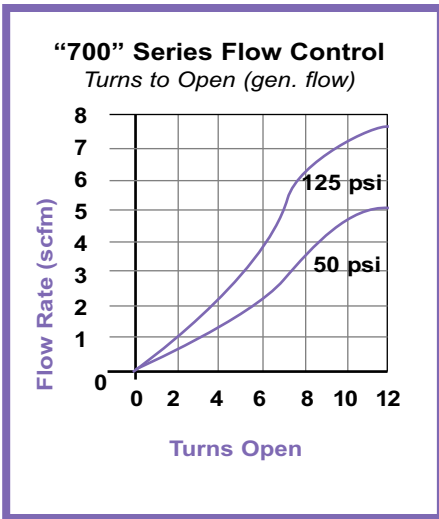
Port Options

	Def.	Options
"O" Series	Port 1 Swivel Input	● 10-32 (F) ● 1/8 NPT (F) ● 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 (F) ● 1/4 Push-in ● 1/8 NPT
	Port 2 Swivel Output	● 5/32 Push-in ● 1/4 Push-in ● 1/8 NPT (F) <i>Additional options available-contact factory</i>
"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 NPT
	Port 2 Output	● 10-32 (F)
Banjo	Port 1 Input	● 10-32 (M)
	Port 2 Output	● 10-32 (F) ● 5/32 Push-in

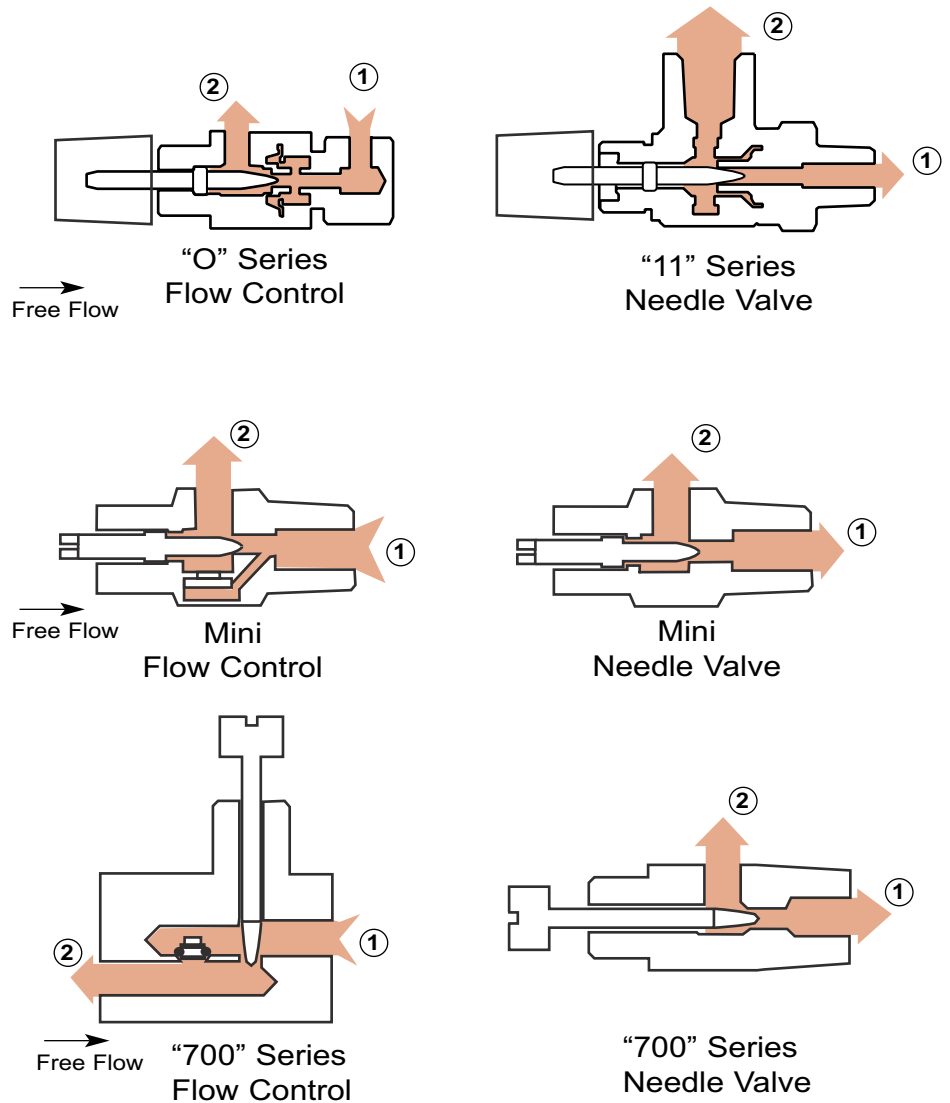
*170 Barb recommended for use with .170 ID PUR or .170 ID PE

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

Flow Control / Needle Valve Cross Section



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



Flow Control Valve illustrations represent the controlled flow path; free flow is 2 to 1.

Note: Needle Valves control flow in both directions.

Standard Flow Control Valves meter out, flowing from 1 to 2.

Product Information

Flow Controls

Part Number	Input	Output
"O" Series		
PFC0-1	1/8 NPT / 10-32(F)	10-32(F)
PFC0-2	10-32 (F) Elbow	10-32(F)
PFC0-3	10-32 (F) Tee	10-32(F)
PFC0-4	1/8 NPT (F)	10-32(F)
PFC0-5	170 Barb	10-32(F)
PFC0-6	1/4 Push-in	10-32(F)
PFC0-7	5/32 Push-in	10-32(F)

"11" Series

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

Reverse Flow

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

"700" Series - panel knob available

C070501 <i>low</i>	10-32 (F)	10-32 (F)
C070503 <i>gen.</i>	10-32 (F)	10-32 (F)

Mini

FC-32	10-32 (M)	10-32 (F)
FC-52	1/8 NPT	10-32 (F)

Banjo Flow Control (Right Angle)

BFC-32	10-32 UNF	10-32 (F)
BFC-32P	10-32 UNF	5/32 Push-in

Reverse Flow

BFCR-32	10-32 UNF	10-32 (F)
BFCR-32P	10-32 UNF	5/32 Push-in

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

Needle Valves

Part Number	Input	Output
"O" Series		
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

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

"700" Series - panel knob available

C070301 <i>low</i>	10-32 (M)	10-32 (F)
C070303 <i>gen.</i>	10-32 (M)	10-32 (F)
C070601 <i>low</i>	1/8 NPT	10-32 (F)
C070603 <i>gen.</i>	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

NV-32	10-32 (M)	10-32 (F)
NV-52	1/8 NPT	10-32 (F)

Ordering Information

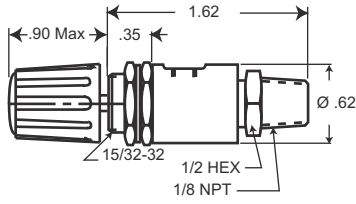
- To order standard product refer to Product Information listing.
- To order "700" Series valves with instrument quality panel knob- add a -PK suffix to the part number.
- Optional seals available- contact factory.
- Contact factory for reverse flow applications.

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

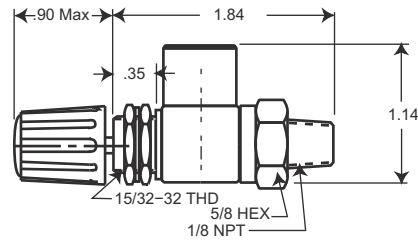


"O" Series

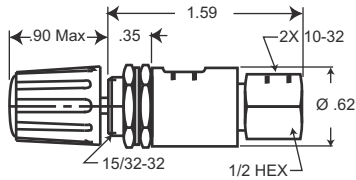
"11" Series



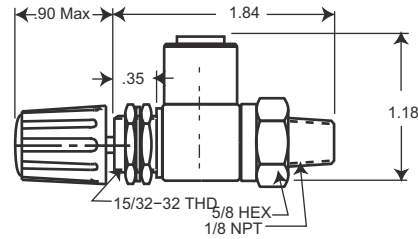
"-1" Input



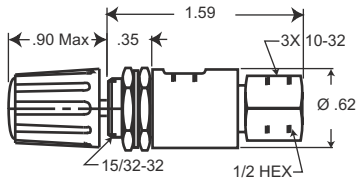
"-14" Porting



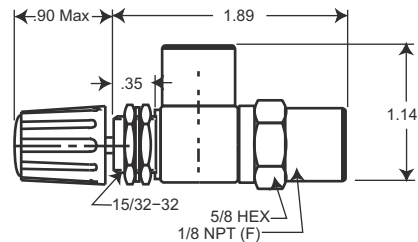
"-2" Input



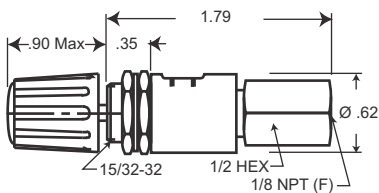
**"-16" Porting
"-17" Porting**



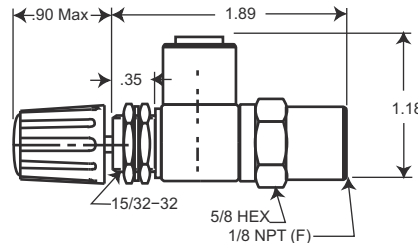
"-3" Input



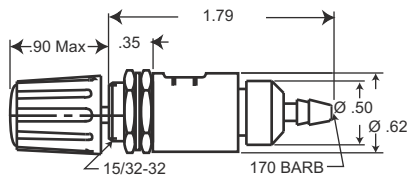
"-44" Porting



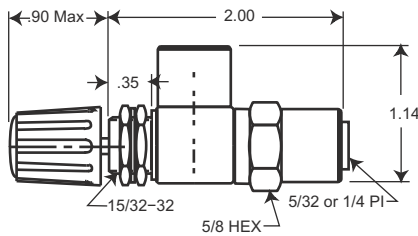
"-4" Input



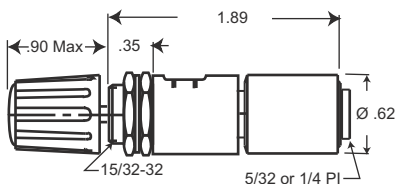
**"-46" Porting
"-47" Porting**



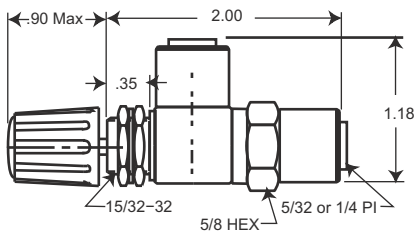
"-5" Input



**"-64" Porting
"-74" Porting**



**"-6" Input
"-7" Input**

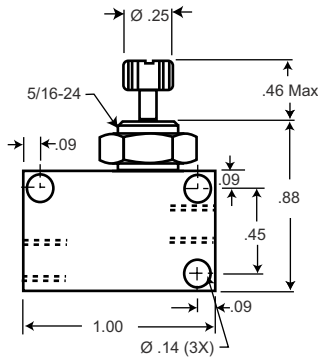


**"-66" Porting
"-67" Porting
"-76" Porting
"-77" Porting**

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

“700” Series

Flow Control

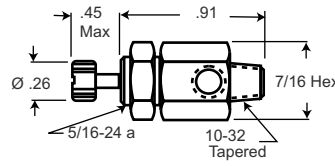


Product Number
C070501 low
C070503 general

Available with instrument quality panel knob, add **-PK** suffix to the part number (not shown)

“700” Series

Needle Valves

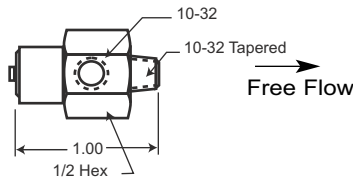


Product Number
C070301 low
C070303 general

Available with instrument quality panel knob, add **-PK** suffix to the part number (not shown)

Mini

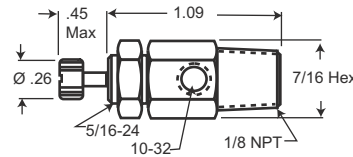
Flow Control



Product Number
FC-32

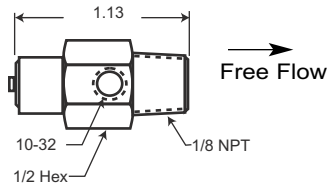
Product Number
C070601 low
C070603 general

Available with instrument quality panel knob, add **-PK** suffix to the part number (not shown)

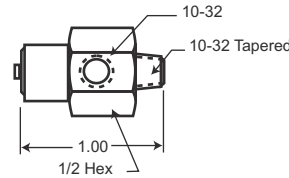


Mini

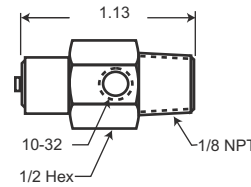
Needle Valves



Product Number
FC-52



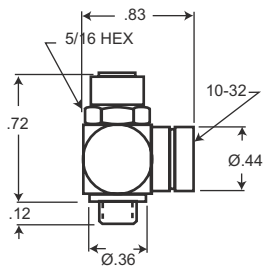
Product Number
NV-32



Product Number
NV-52

Banjo

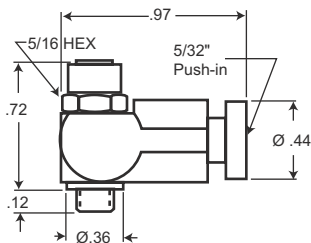
Flow Control



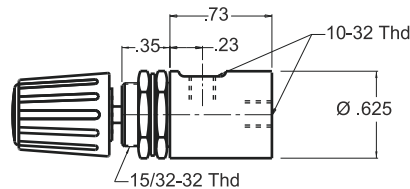
Product Number
BFC-32
BFCR-32

“O” Series

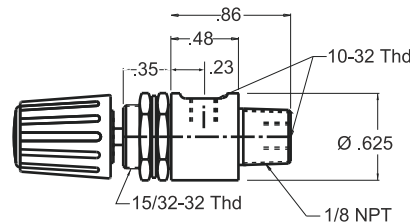
Needle Valves



Product Number
BFC-32P
BFCR-32P



Product Number
PNV0-0



Product Number
PNV0-1/8

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

Features

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



Double Flow Control Valve

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

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.

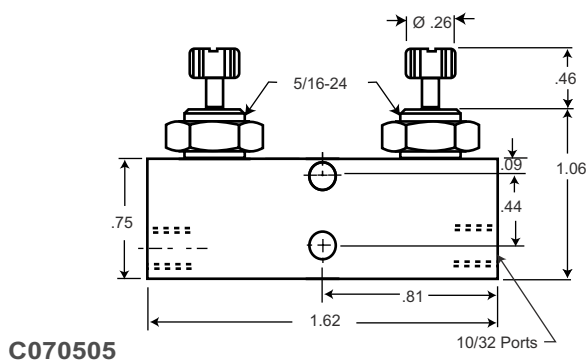
Performance Data

Temperature Range	Operating Pressure
-20°F to 160°F	Range: 0-125 psi

Part Number	C _v Full Open	Flow Rate (scfm)		Cracking Pressure
		50 psi	125 psi	
C070505	.07	2.75	6.2	.1 psi

C_v per ANSI / (NFPA) T3.21.3

Double Flow Control



Ordering Information

- To order standard product use part number **C070505**.

Materials

Brass/ Electroless Nickel, Stainless Steel, Buna-N



Features

- Convenient parallel porting
- Compact- 1.21" overall
- **Warning:** This product is **not intended** to serve as a two hand anti-tie down device

Performance Data

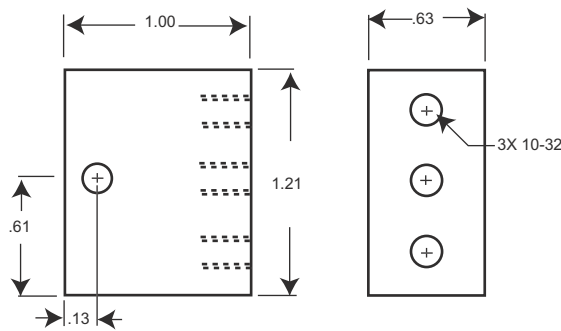
Temperature Range			Operating Pressure			
-20°F to 160°F			Range: 0-125 psi			
Part Number	Porting Information	C _v	Flow Rate (scfm)		Fill Time sec/ in ³ 0-90 psi	Exhaust Time sec/ in ³ 100-10 psi
			50 psi	125 psi		
PAV-10	10-32 (F)	.13	4.8	10.6	.03	.03

● Performance data shown for flow paths 1-2 and 3-2; C_v per ANSI / (NFPA) T3.21.3

The “AND” Valve

“AND” valves are used in circuit control applications that require a combination of inputs to produce a single output. This compact (overall 1.21”) and durable valve has been Pneumadyne tested to assure high performance and dependability.

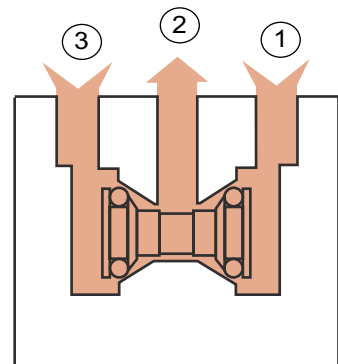
“AND” Valve



Function

When a signal is supplied to port 1 “AND” port 3 the output flows from port 2. The output flow will always be the lower of the two pressures. Both input pressures are required to open the valve (loss of input will cancel the output signal).

Cross Section



Ordering Information

- To order standard product use part number **PAV-10**.
- Optional seals available- contact factory.

Materials

Aluminum/ Black Anodize, Brass/ Electroless Nickel, Buna-N

Features

- $\pm 2\%$ Repeatability
- Mounting versatility
- Push-to-connect fittings available
- Output port rotates 360°
- Direct cylinder mount
- Direct gauge mount to output



Pressure Control Valves

Pneumadyne's Pressure Control Valve is ideal for applications requiring reduced pressure to a cylinder. It is designed for use between a valve output and a cylinder or other volume, where a reduced pressure is desired. A high volume check valve is built in to allow for rapid reverse flow. It is also ideal for continuous flow applications where reverse flow is *not* required.

Function

Output pressure is selected by adjusting the control knob when pressure is off (locking nut provided). Pneumadyne's gauge port and micro gauge are ideal for accurately setting output pressure. Air flowing through port 1 unseats the poppet and continues through port 2, pressurizing a downstream vessel (figure A). The flow stops when the down-

stream pressure is equal to the set pressure. As the cylinder retracts the Pressure Control acts as a free reverse check, downstream pressure enters port 2 unseating the O-ring and allowing air to pass through the hollow stem and out port 1 (figure B).

Performance Data

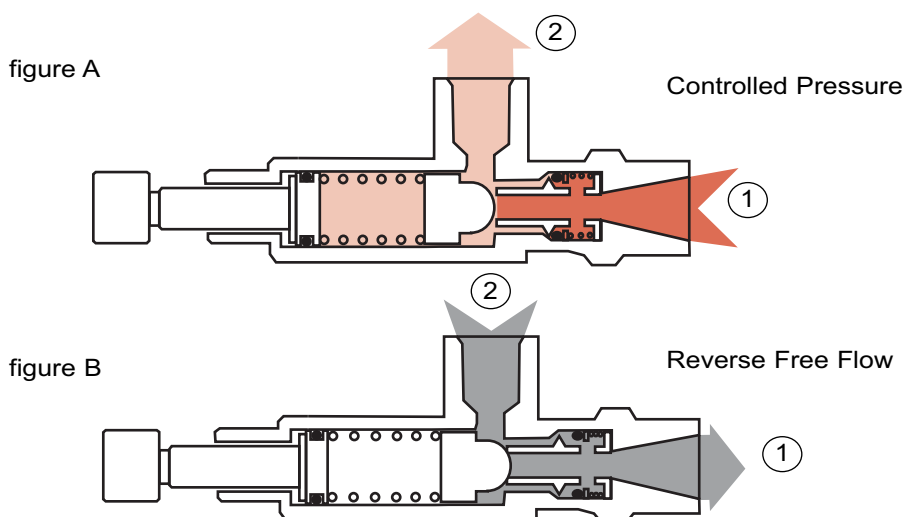
Temperature Range	Maximum Input Pressure		C _v		Fill Time 100 in ³ sec.
	Standard	150 psi	1-2	2-1	
-20°F to 160°F	Standard	150 psi	.15	.26	3.47
	Low	80 psi			

C_v per ANSI / (NFPA) T3.21.3

Materials

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

Pressure Control Cross Section



Product Information

Pressure Control Valve

Part Number	Input	Output	Part Number	Input	Output
PPC11-11	1/8 NPT	1/8 NPT	PPC11-61	1/4 Push-in	1/8 NPT
PPC11-14	1/8 NPT	1/8 NPT (F)	PPC11-64	1/4 Push-in	1/8 NPT (F)
PPC11-16	1/8 NPT	1/4 Push-in	PPC11-66	1/4 Push-in	1/4 Push-in
PPC11-17	1/8 NPT	5/32 Push-in	PPC11-67	1/4 Push-in	5/32 Push-in
PPC11-18	1/8 NPT	1/4 NPT	PPC11-68	1/4 Push-in	1/4 NPT
PPC11-41	1/8 NPT (F)	1/8 NPT	PPC11-71	5/32 Push-in	1/8 NPT
PPC11-44	1/8 NPT (F)	1/8 NPT (F)	PPC11-74	5/32 Push-in	1/8 NPT (F)
PPC11-46	1/8 NPT (F)	1/4 Push-in	PPC11-76	5/32 Push-in	1/4 Push-in
PPC11-47	1/8 NPT (F)	5/32 Push-in	PPC11-77	5/32 Push-in	5/32 Push-in
PPC11-48	1/8 NPT (F)	1/4 NPT	PPC11-78	5/32 Push-in	1/4 NPT

Pressure Control Valve with a maximum pressure reduction of 80 psi available add a “-80” suffix to standard part number.

Locking nut, mounting nuts and lockwasher provided

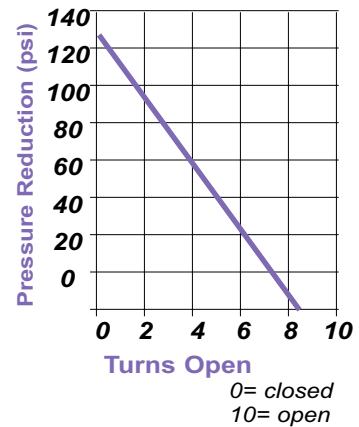
Warnings

- **NOT to be used as a Pressure Regulator**
- **For use with AIR ONLY**
- **Does NOT have a downstream vent**

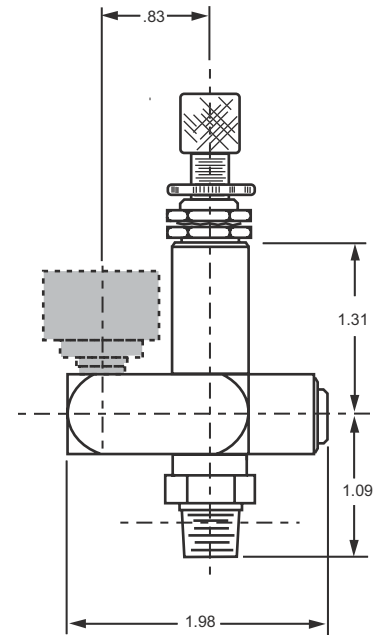
Ordering Information

- To order Pressure Control Valves use the Product Information listing to select part number (factory assembled).
- To order Pressure Control Valve with a maximum pressure reduction of 80 psi add a “-80” suffix to the standard part number. (Standard 125 psi)
- To order gauge port option add a “-G” suffix to the part number.

Pressure Control Valve



Pressure Control



The Pressure Control Valve with extended gauge port housing and micro gauge installed (to prevent damage the gauge is packaged and sold separately). [Gauge data](#)

Catalog drawing represents the maximum overall measurement(s); for specific porting configuration drawings- contact factory.

Features

- Compact size
- Low hysteresis
- Precision control
- .16% Repeatability
- Stud mount, 10-32 UNF
- Compatible with Nitrogen and Helium
- Self relieving



Miniature Precision Regulator

Pneumadyne's new Miniature Precision Regulator offers highly accurate air pressure control in a compact package; ideal for limited space applications.

This precision machined, high quality regulator features an output pressure range up to 100 psi and high flow rate of 4.5 scfm. With a maximum supply pressure of 250 psi, our Precision Regulator is extremely dependable and repeatedly returns to the set pressure when turned off and on. Exceptionally tight design tolerances effectively minimize vibration allowing the regulator to remain stable under changing operating conditions.

Highly accurate air pressure control in a compact package

Performance Data

Temperature Range	Operating Pressure	Maximum Supply Pressure	Media
-40° to + 248°F	0 to 100 psi	250 psi	Clean, Dry Air

Output Pressure Range	Flow Rate		Repeatability	Set-ability	Air Consumption
	50 psi	100 psi			
0 to 100 psi	2.5 scfm	4.5 scfm	0.16 %	.15 psi	1.0 scfh max

Materials

Body: Electroless Nickel Plated Aluminum
 Stem: Stainless Steel
 Seals: Buna-N
 Spring: Stainless Steel
 Piston: Carbon-Graphite
 Sleeve: Pyrex® Glass

Mounting Method

Stud Mount: 10-32 UNF (footprint provided)
 Panel Mount: Nominal mounting hole dimension 31/64"

Miniature Precision Regulator Cross Section

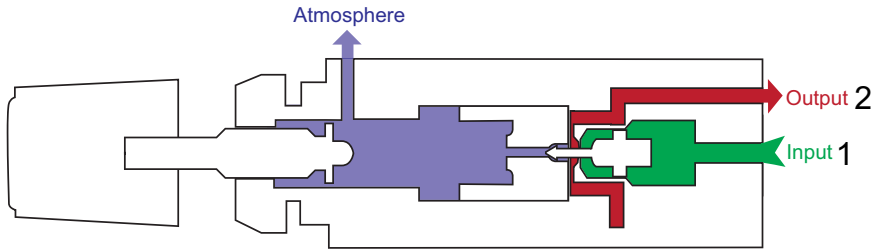


figure A

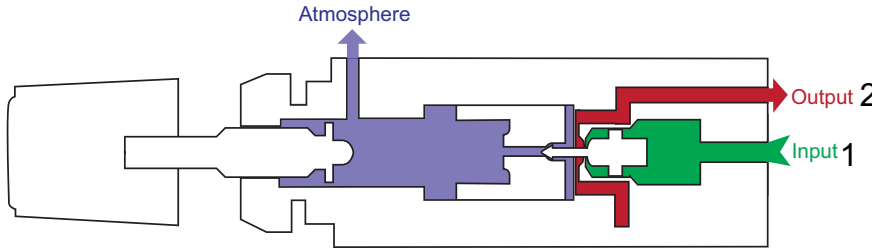
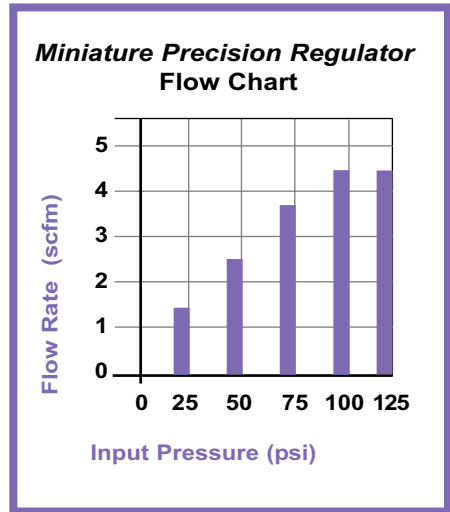
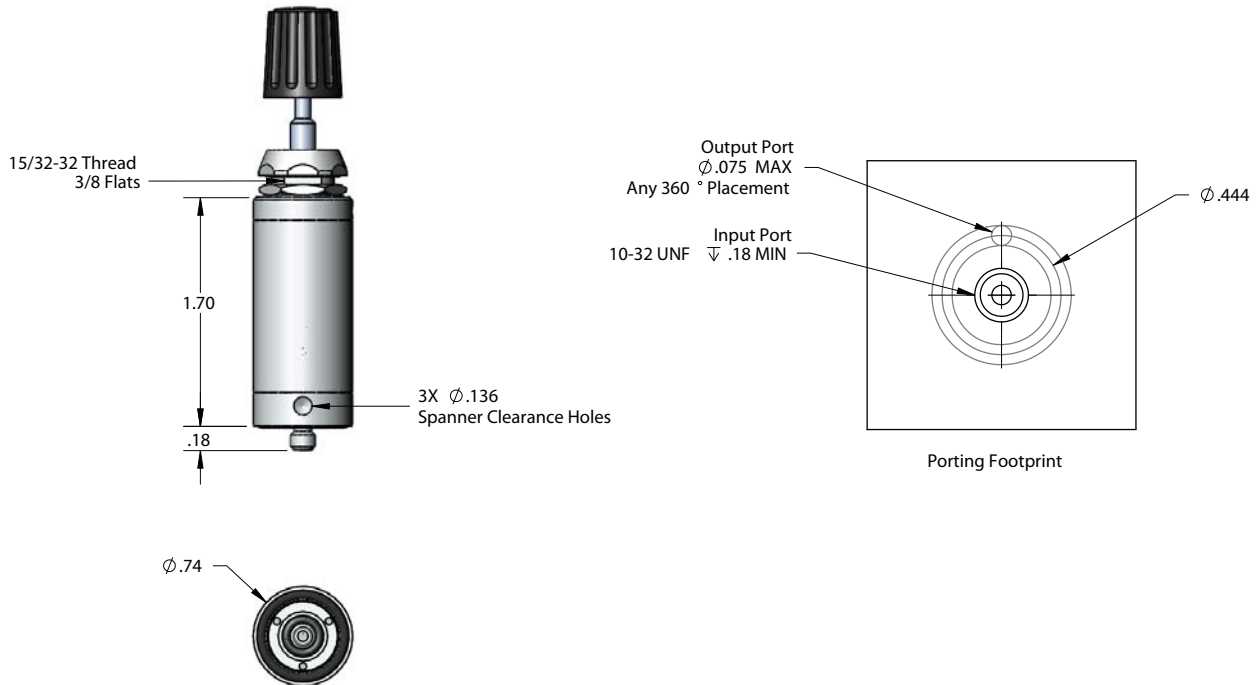


figure B



Miniature Precision Regulator



Ordering Information

- To order standard product use Part Number **PPR-S-100**.
- Optional seals available- contact factory.

Features

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



Pressure Regulators

Pneumadyne'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). Pneumadyne'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 Electroless nickel plated for corrosion and wear resistance.

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

C_v per ANSI / (NFPA) T3.21.3

Materials

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

Function

Relieving Regulator

Figure A - Adjustment of the control knob to a pre-determined level shifts the piston, unseating the Buna-N poppet and allowing air to flow through port 1 to port 2. When the set pressure is reached, the pressure under the piston and the force exerted by the spring are balanced producing a regulated output at port 2. A minimum of 30 psi input is required to maintain regulation.

Figure B - 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

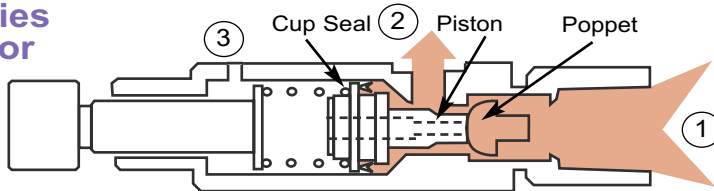
The non-relieving regulator flow path- input 1 to output 2- is the same as the relieving regulator, however the non-relieving regulator contains a solid piston that does not permit backflow at output port 2 to be exhausted.

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

Regulator Cross Section

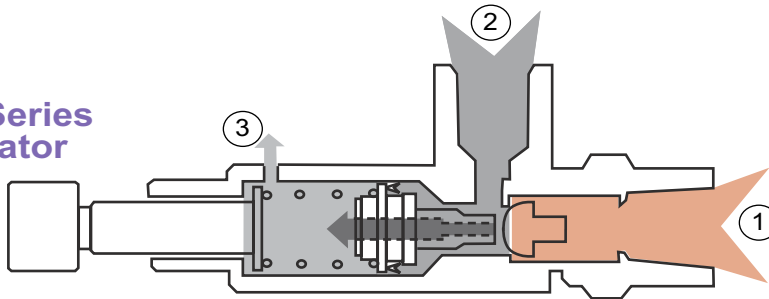
“O” Series Regulator

figure A

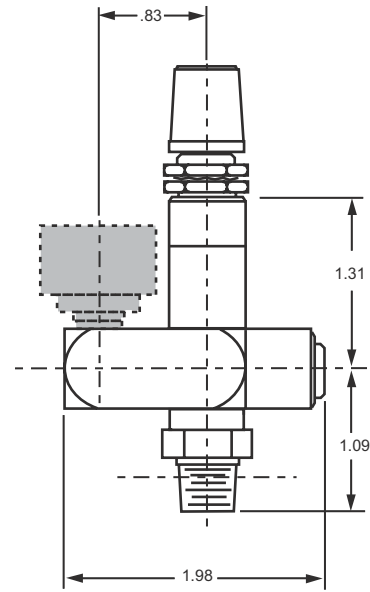


“11” Series Regulator

figure B *Relieving Mode*



Extended Port



The “11” Series Regulator with extended gauge port housing and micro gauge installed (to prevent damage the gauge is packaged and sold separately). [Gauge data](#)

Control Knob- select the knurled knob manufactured from steel or the panel knob molded from durable acetal -both are standard actuators.

Slotted adjustment screw- also available- *contact factory.*

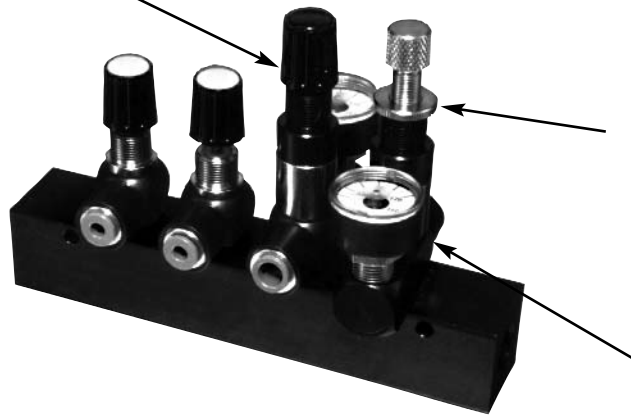


figure C

Locking Nut- RLN-40 (*sold separately*)- available to lock adjustment and eliminate possible setting variance, ideal for locations requiring infrequent adjustment.

Micro Gauge- PMG-60, PMG-160 (*sold separately*)- can be mounted on the “11” Series regulator with an extended gauge port providing an on-site pressure indicator. To order a gauge ready regulator add a “-G” suffix to the part number.

System 11- a method of consolidating 2 to 10 components with a common pressure source. Component selection includes button style valves, regulators, and needle valves. *Each System 11 is designed per order- contact factory. See [System 11 Information](#).*

Product Information

“O” Series Regulators

Relieving

Part Number	Input x Output	
Knurled Knob	RO-RK-1	1/8 NPT 10-32 (F)
	RO-RK-2	10-32 (F) Elbow 10-32 (F)
	RO-RK-3	10-32 (F) Tee 10-32 (F)
	RO-RK-4	1/8 NPT (F) 10-32 (F)
	RO-RK-5	170 Barb 10-32 (F)
	RO-RK-6	1/4 Push-in 10-32 (F)
	RO-RK-7	5/32 Push-in 10-32 (F)
Panel Knob	RO-RP-1	1/8 NPT 10-32 (F)
	RO-RP-2	10-32 (F) Elbow 10-32 (F)
	RO-RP-3	10-32 (F) Tee 10-32 (F)
	RO-RP-4	1/8 NPT (F) 10-32 (F)
	RO-RP-5	170 Barb 10-32 (F)
	RO-RP-6	1/4 Push-in 10-32 (F)
	RO-RP-7	5/32 Push-in 10-32 (F)

Non-Relieving

Knurled Knob	RO-NK-1	1/8 NPT 10-32 (F)
	RO-NK-2	10-32 (F) Elbow 10-32 (F)
	RO-NK-3	10-32 (F) Tee 10-32 (F)
	RO-NK-4	1/8 NPT (F) 10-32 (F)
	RO-NK-5	170 Barb 10-32 (F)
	RO-NK-6	1/4 Push-in 10-32 (F)
	RO-NK-7	5/32 Push-in 10-32 (F)
Panel Knob	RO-NP-1	1/8 NPT 10-32 (F)
	RO-NP-2	10-32 (F) Elbow 10-32 (F)
	RO-NP-3	10-32 (F) Tee 10-32 (F)
	RO-NP-4	1/8 NPT (F) 10-32 (F)
	RO-NP-5	170 Barb 10-32 (F)
	RO-NP-6	1/4 Push-in 10-32 (F)
	RO-NP-7	5/32 Push-in 10-32 (F)

Accessories

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

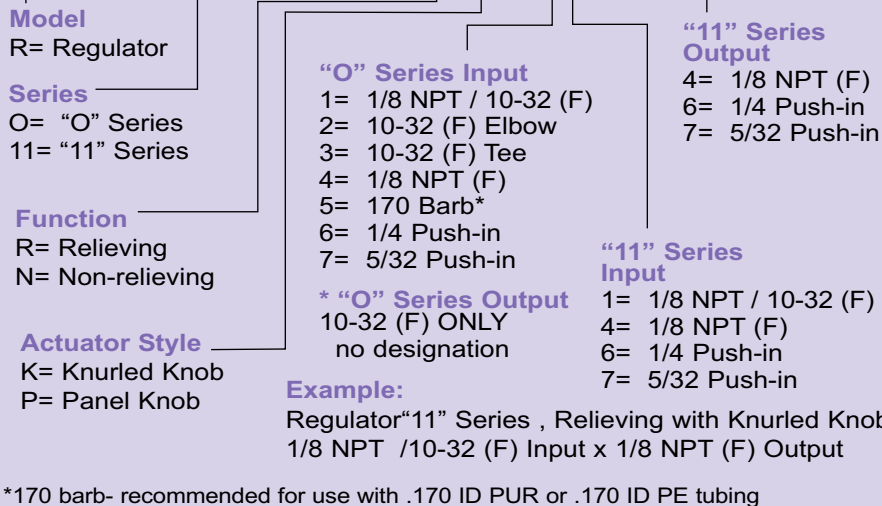
Ordering Information

- 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.

Product Number Diagram:

“O” & “11” Series Regulators

R 1 1 - R K - 1 4



“11” Series Regulators

Relieving

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

“11” Series Regulators

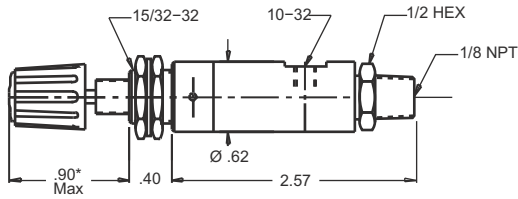
Non-Relieving

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

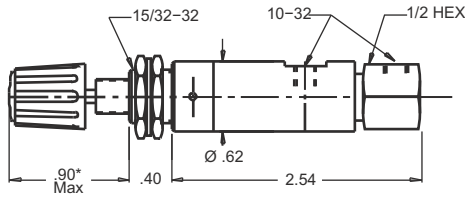
Custom Products: Contact factory for applications requiring 1/8 NPT male or 1/4 NPT male output port

"O" Series

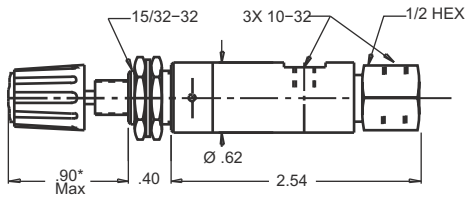
Shown with Panel Knob



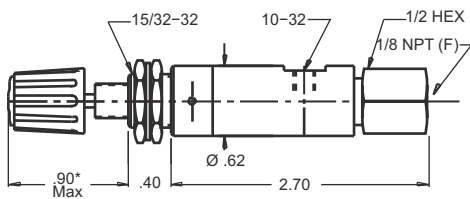
"-1" Input



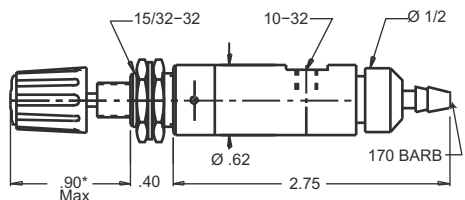
"-2" Input



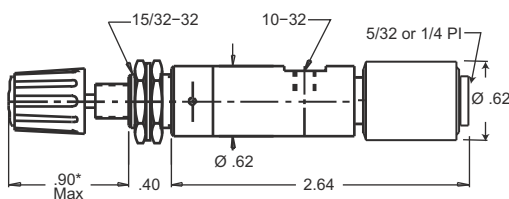
"-3" Input



"-4" Input



"-5" Input

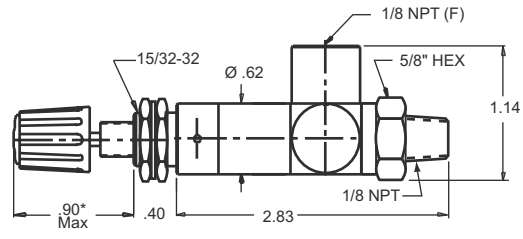


**"-6" Input
"-7" Input**

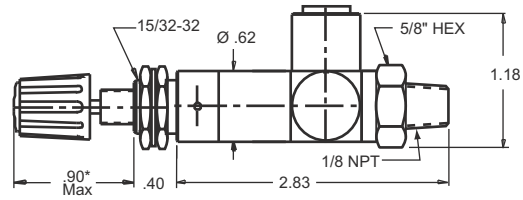
*.74 Max for knurled knob- all regulators

"11" Series

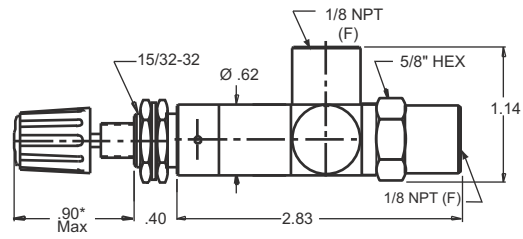
Shown with Panel Knob



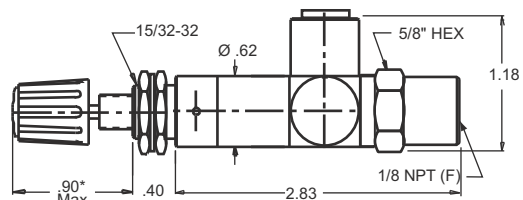
"-14" Porting



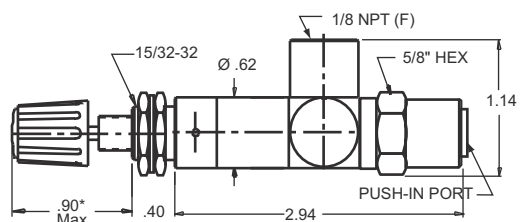
**"-16" Porting
"-17" Porting**



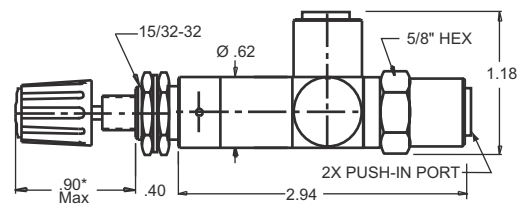
"-44" Porting



**"-46" Porting
"-47" Porting**



**"-64" Porting
"-74" Porting**



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

Features

- **In-line** or **Right Angle**
- Allows rapid cylinder return
- Multiple porting options
- Relieve 100 in³ in 2 seconds
- Male pipe thread for direct cylinder mount
- Threaded or controllable exhaust port
- Swivel cylinder port



Quick Exhaust Valves

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.

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.

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 psi
				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
*QE10-FMF			.15	5.0	10.8	.03	.06

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

- Flow information supplied for flow path 1-2.

C_v per ANSI / (NFPA) T3.21.3

"11" Series- Right Angle

Pneumadyne'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 Pneumadyne "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 ([see chart](#)), 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).

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.

Quick Exhaust Cross Section

figure A
Fill

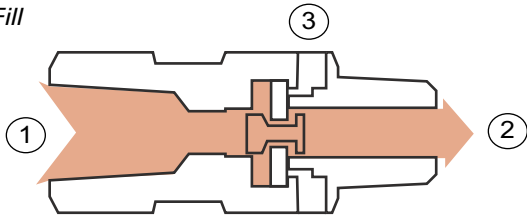


figure B
Exhaust

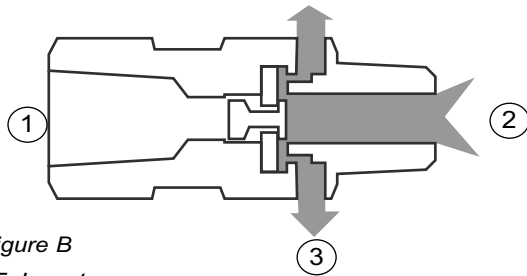


figure C
Fill

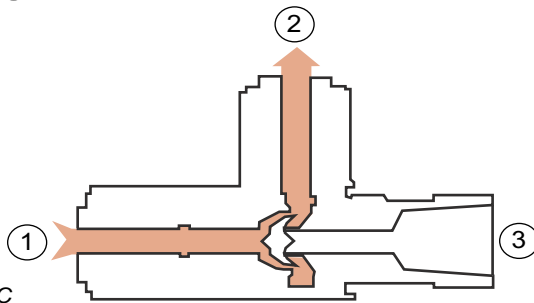
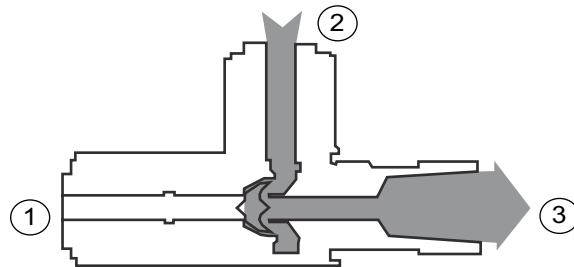
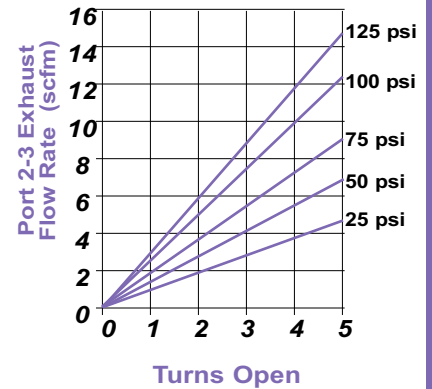


figure D
Exhaust



Quick Exhaust "11" Series with Locking Speed Control Needle



Port Options

		Definition	Options
Inline	Port 1 Input		● 1/8 NPT (F)
	Port 2 Output		● 1/8 NPT
	Port 3 Exhaust		● Non-Threaded
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

Materials

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

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

Ordering Information

● To order “11” Series Quick Exhaust select product number from Product Information listing or use Product Number Diagram to develop required component configuration.

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)**

- **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.
- **QE-S** Speed Control Needle 1/4-28 UNF with locking nut- for use with QE-S-xx.
- Contact factory for custom porting configurations.

1/4” push-to-connect exhaust port is specially designed with a captive collet that is retained even when tubing is disconnected

Product Diagram Quick Exhaust Valves

QE 11 - S - 18

Series

QE11= Quick Exhaust
“11” Series-
Right angle
porting

Exhaust Port

M= 1/8 NPT (F)
P= 1/4 Push-in
S= 1/4-28 UNF (F)

Input Port

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

Output Port

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

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.

QE 10 - F M F

Series

QE10= Quick Exhaust

Input Port

F= 10-32 (F)
5= M5
7= 5/32 Push-in

Output Port

M= 10-32
G= M5 Adj M
A= 10-32 Adj M

Exhaust Port

F= 10-32 (F)
5= M5

Product Information

In-line

Part Number	Input	Output
-------------	-------	--------

C570501	1/8 NPT (F)	1/8 NPT
---------	-------------	---------

Right Angle

QE10-5G5	M5	M5 Adj. (M)
----------	----	-------------

QE10-7MF	5/32 Push-in	10-32 (F)
----------	--------------	-----------

QE10-FAF	10-32 (F)	10-32 Adj. (M)
----------	-----------	----------------

QE10-FMF	10-32 (F)	10-32 (M)
----------	-----------	-----------

"11" Series Right Angle

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
-----------	--------------	---------



"11" Series Quick Exhaust shown with accessories

Additional Accessories

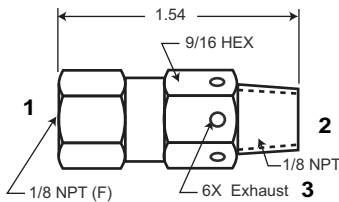
Part Number	Description
QE-MS	1/8 NPT Sintered Bronze Muffler
QE-MI	1/8 NPT Industrial Muffler
QE-S	1/4-28 UNF Speed Control Needle

Quick Exhaust

Port Designation

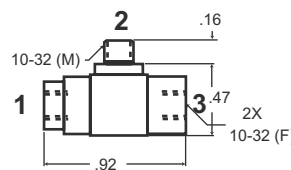
C570501

In-line

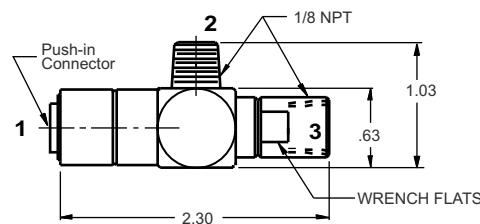
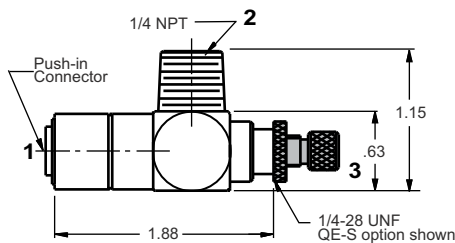


QE10-FMF

Right Angle



Right Angle



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.

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

Features

- Release 100 in³ in 4 seconds
- Durable construction- available with standard pipe thread and 10-32 thread



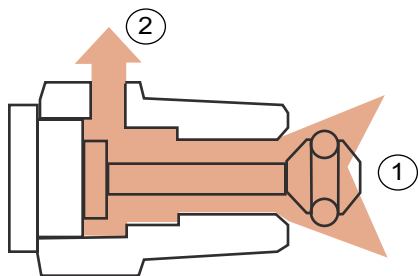
Bleed Valves

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

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 in³ in 4 seconds.

Cross Section



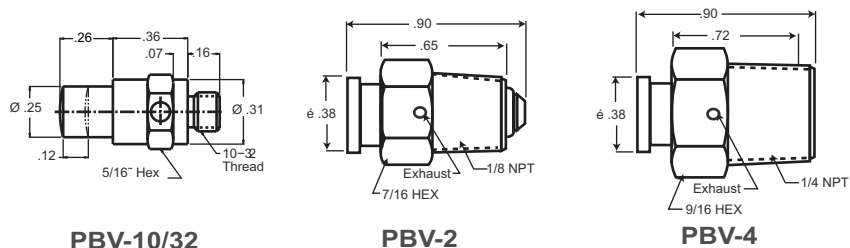
All dimensions and specifications are subject to change.

Performance Data

Temperature Range		Operating Pressure		
-20°F to 160°F		Range: 0-125 psi		
Part Number	Mount	Force to Actuate		Exhaust Time
		50 psi	125 psi	sec/ in ³ 100-10 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

Bleed Valve



Ordering Information

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

Materials

Brass/ Electroless Nickel, Buna-N, Stainless Steel



Features

- UL approved switch
- Interface between a pneumatic system and electrical controls
- 18 gauge copper wire
- Mounting versatility
- Can be used with DC current

Performance Data

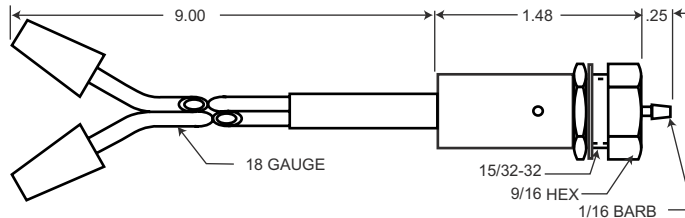
Part Number	Temperature Range	Function	* Minimum Actuation (psi)	Maximum Actuation (psi)
C520101	-20°F to 160°F	Contacts Open (not passing)	40 psi	100 psi
C520102		Contacts Closed (passing)		

* Other pressure ranges available- contact factory
 C_v per ANSI / (NFPA) T3.21.3

The Air-Operated Electric Switch

Pneumadyne’s UL approved Air Operated Electric Switch is an excellent way to provide an interface between your pneumatic system and electrical controls. The primary function is to convert an air pressure signal to an electrical signal. This product can be panel mounted (31/64” nominal hole) or surface mounted using the MB-1 or MB-1F mounting bracket.

Air Operated Electric Switch



Ordering Information

- To order standard product refer to Performance Data listing (sold separately).
- (1) nut and (1) lockwasher provided.
- 062 barb recommended for use with 1/16 ID PUR.
- Optional barbs available- contact factory.

All dimensions and specifications are subject to change without notice.

Switch Life Expectancy

	115 vac Resistive
5 amp	6 thousand cycles
1 amp	1 million cycles
	220 vac Resistive
2-1/2 amp	6 thousand cycles
1/2 amp	1 million cycles

Data provided by switch manufacturer

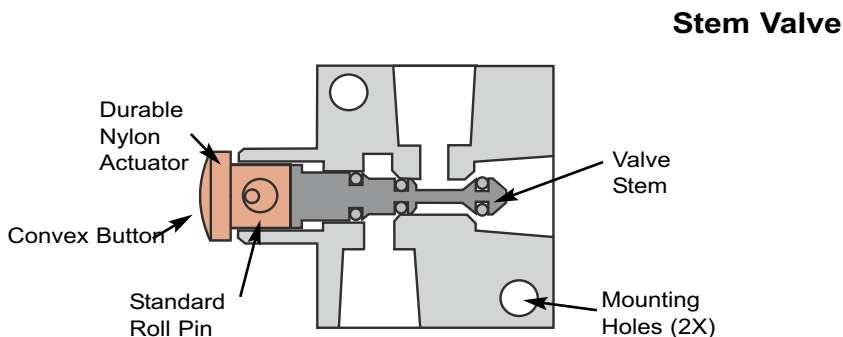
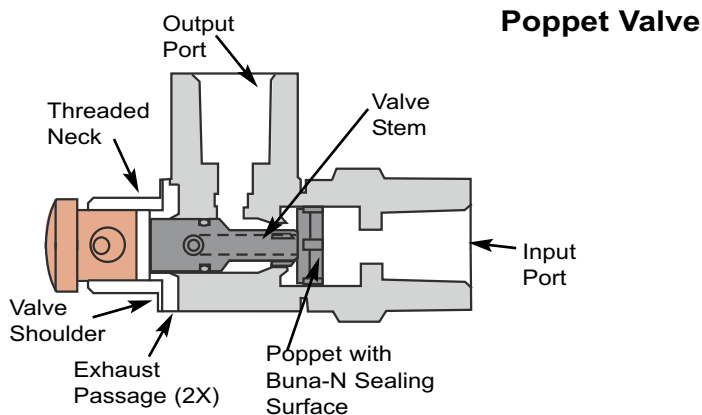
Materials

Acetal, Brass/ Electroless Nickel, Buna-N, Stainless Steel, 18 gauge copper wire, Steel

Additional Information and Specifications

Directional 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. Pneumadyne'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 life.



Pneumadyne Directional Control Valve Profile

	"O" Series		"3" Series		"11" Series		"10" Series		"20" Series		"22" Series		"200" Series		"300" Series				"400" Series				"4" Series		"45" Series				
	10-32	Rear	1/8 NPT	Fully Ported	Standard	Rear	Fully Ported	Side	3-Position	10-32	Rear	1/8 NPT	Fully Ported	Standard	Rear	Fully Ported	Side	3-Position	10-32	Rear	1/8 NPT	Fully Ported	Standard	Rear	Fully Ported	Side	3-Position		
2-WAY	●			●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
3-WAY	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
4-WAY 3 Port 2 Position																											●	●	●
4-WAY 5 Port 2 Position									●	●																			
4-WAY 5 Port 3 Position										●																			
Normally Open	●		●		●				●																				
Normally Closed	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Open Crossover											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Closed Crossover	●	●	●	●	●																								
Ported Exhaust		●							●													●	●						
Actuator Options	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Porting Options	●	●	●	●	●																	●	●	●	●	●	●	●	●

Additional Information and Specifications

Manual Actuators

- 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
 - 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	6= Yellow
3= Red	7= Orange
4= Blue	8= Gray
5= Green	

Pneumadyne 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).

Pneumadyne 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.

Pneumadyne toggles are available for momentary ("F" Style) or detented ("H" Style) actuation.

Pneumadyne 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.

- All catalog product dimensions are given in inches unless otherwise specified

Additional Information and Specifications

Performance Data

All Pneumadyne 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.

Pneumadyne 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 in³ x time to fill 1 in³ etc.

Pneumadyne 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 in³ 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 Pneumadyne components are designed and tested for use with air- for use with other media, consider materials of construction.

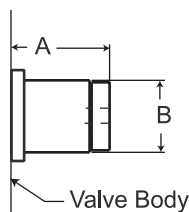
Mounting Hole Dimension

Description	Nominal Hole Diameter	Description	Nominal Hole Diameter
"O" Series	31/64"	Flow Control	31/64"
"3" Series	31/64"	Needle Valves	31/64"
11" Series	31/64"	"O" & "11" Series	31/64"
"200 & 300" Series	31/64"	"700" Series	21/64"
"400" Series	31/64"	Pressure Regulators	31/64"
Sub-Micro Valve		Quick Exhaust "11" Series	31/64"
Button	17/64"	Air Operated Electric Switch	31/64"
Toggle	21/64"	Oil Tight Actuators	
3 Position Toggle Valve	3/4"	30mm	1-3/16"
6 Position Selector Valve	41/64"		
Heavy Duty Toggle Valve ("4" Series)	5/8"		
"4" & "45" Series	31/64"		

Push-to-Connect Fitting Option

To order "45" or "400" Series valve with push-to-connect option use suffix:

Suffix	A	B
"-125" to indicate 1/8" PI	.44	.36
"-156" to indicate 5/32" PI	.44	.38
"-250" to indicate 1/4" PI	.62	.47

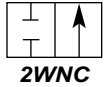


- For use with 95A durometer polyurethane tubing
- See Pneumadyne Fitting section for ordering information**

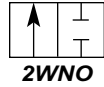
Additional Information and Specifications

Fluid Power Graphic Symbols

Directional Control



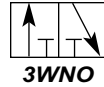
2WNC



2WNO



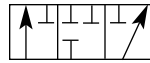
3WNC



3WNO



4-Way
2-Position



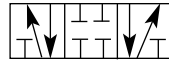
2-Way
3-Position
Closed center



3-Way
3-Position
Open center



4-Way
5 Ports 2-Position
Exhaust center



4-Way
5 Ports 3-Position
Closed center



4-Way
5 Ports 3-Position
Exhaust center

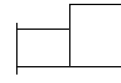


2WNC
Solenoid
Actuator

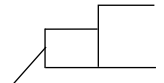


3WNC
Solenoid
Actuator

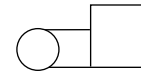
Actuators



Push Button



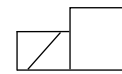
Toggle



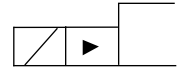
Cam Operated



Pilot Operated



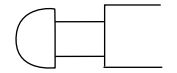
Solenoid Operated
"10" Series



Pilot and Solenoid
"20" Series

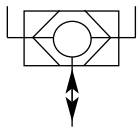


3-Position Detent



Palm Button

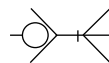
Circuit Control



Shuttle Valve



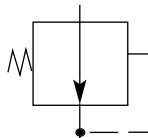
Needle Valve



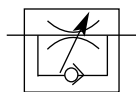
Quick Disconnect



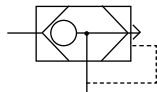
Check Valve



Regulator



Flow Control

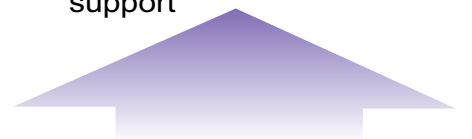


Quick Exhaust

Bookmark
pneumadyne.com

for
standard and new product
information and useful
links

- Download 3D CAD drawings
- View detailed product information
- See 'What's New'
- Review industry related solutions
- Request technical support



Features

- Miniature size (1.08" OAL)
- Direct acting
- Mounting versatility
- Lightweight (.4 oz)
- Manual override
- Fast response time
- LED standard
- 2 & 3-way normally closed, 3-way normally open



2 & 3-Way Solenoid Valves 10 mm

Pneumadyne's 10 mm direct acting solenoid valves are a cost effective, space saving solution for the use of single or multiple valves. An overall length of 1.08" and height of .52" make this valve the ideal choice for limited space applications.

Select from three connector options to simplify valve installation. Convenient Line & 90° Connectors (both with LED) provide quick electrical connection when used in conjunction with the plug-in cable (sold separately). The standard Flying Lead Connector features 300 mm wires for direct connection.

Life Expectancy

50 million cycles @ 2,700 maximum cycles per minute

This versatile valve offering includes 12 & 24 Volt DC and a low watt 24 Volt DC. Fast response times and high flow rates make this miniature valve suitable for numerous applications.

Pneumatic Performance Data 10 mm

Temperature Range			20°F to 120°F (-5°C to 50°C)*			
Orifice/Function	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	Max. psi		
0.7 mm NC	105 psi	.013	.54	1.05 @ 105 psi (7 bar)	.28	.32
0.5 mm NC	105 psi	.010	.27	.51 @ 105 psi (7 bar)	.54	.54
0.7 mm NO	105 psi	.010	.38	.79 @ 105 psi (7 bar)	.40	.42

Cv per ANSI / (NFPA) T3.21.3
*100% Duty Cycled

Electrical Performance Data 10 mm

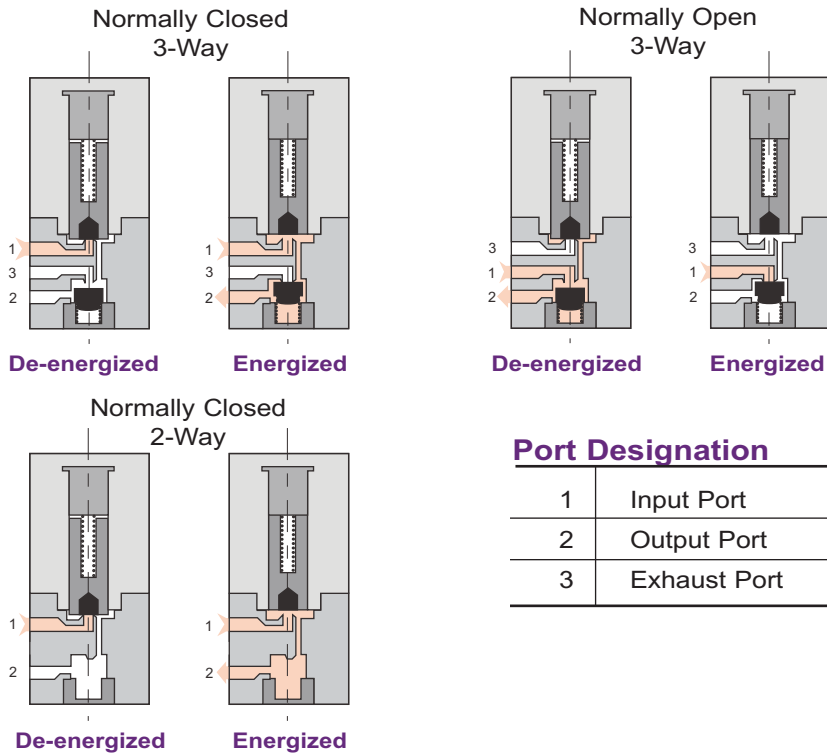
Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
-5 % to 10%	8 ms	10 ms	F 311°F (155°C)

Connector wire gauge: 24 AWG

Materials

Copper, Nylon-Glass Filled, Stainless Steel, Buna-N

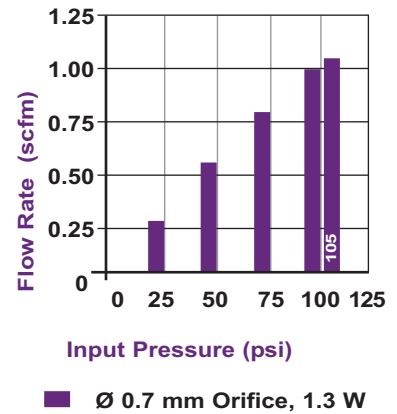
10 mm Solenoid Valve Cross Section 2-Way & 3-Way



Port Designation

1	Input Port
2	Output Port
3	Exhaust Port

10 mm Solenoid Flow Chart



Position Indicators- Silver plate indicates Normally Closed valve, Black plate indicates Normally Open valve

Product Number Diagram 10 mm

S 1 0 M M - 3 0 - 1 2 - 2

Actuator
Solenoid 10 mm

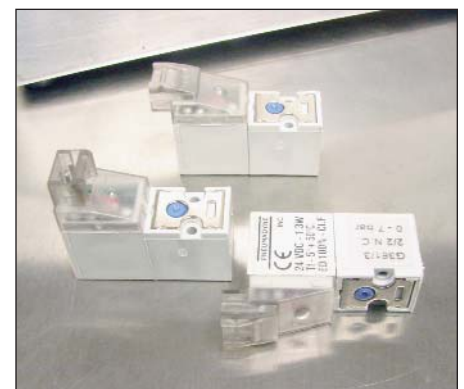
Function
2= 2-Way
3= 3-Way

Position One
0= Normally Closed
1= Normally Open

Voltage
12= 12V DC
24= 24V DC
24LW= 24V DC (0.6 Watt)

Connectors
2= Flying Leads 300 mm
3= Line Connector w/LED
4= 90° Connector w/LED

Example:
10 mm, 3-Way, Normally Closed, 12V DC, Flying Leads

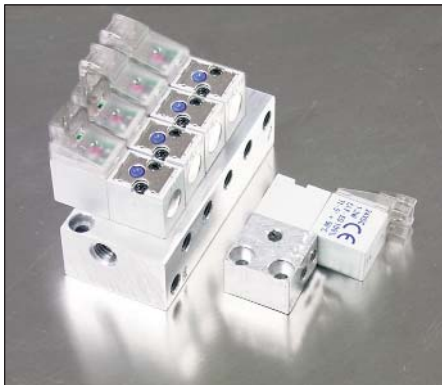


90° Connectors and Line Connectors offer plumbing versatility and feature a "surge voltage suppressor"

Plug-in Cable lengths of 300 mm, 500 mm, and 1000 mm are available for fast connection to Line and 90° Connectors



Cover Plates effectively conceal unused manifold stations and block valve supply port (sold separately)



10 mm four station manifold with Line and 90° Connectors

Product Information 10 mm

2-Way Normally Closed

<i>Part Number</i>	<i>Connection</i>
12 DC/ 1.6 Watt/ Orifice .7mm	
S10MM-20-12-2	Flying Leads
S10MM-20-12-3	Line Connector
S10MM-20-12-4	90° Connector
24 DC/ 1.6 Watt/ Orifice .7mm	
S10MM-20-24-2	Flying Leads
S10MM-20-24-3	Line Connector
S10MM-20-24-4	90° Connector
24 LW/ .6 Watt/ Orifice .5mm	
S10MM-20-24LW-2	Flying Leads
S10MM-20-24LW-3	Line Connector
S10MM-20-24LW-4	90° Connector

3-Way Normally Closed

<i>Part Number</i>	<i>Connection</i>
12 DC/ 1.6 Watt/ Orifice .7mm	
S10MM-30-12-2	Flying Leads
S10MM-30-12-3	Line Connector
S10MM-30-12-4	90° Connector
24 DC/ 1.6 Watt/ Orifice .7mm	
S10MM-30-24-2	Flying Leads
S10MM-30-24-3	Line Connector
S10MM-30-24-4	90° Connector
24 LW/ .6 Watt/ Orifice .5mm	
S10MM-30-24LW-2	Flying Leads
S10MM-30-24LW-3	Line Connector
S10MM-30-24LW-4	90° Connector

3-Way Normally Open

<i>Part Number</i>	<i>Connection</i>
12 DC/ 1.6 Watt/ Orifice .7mm	
S10MM-31-12-2	Flying Leads
S10MM-31-12-3	Line Connector
S10MM-31-12-4	90° Connector
24 DC/ 1.6 Watt/ Orifice .7mm	
S10MM-31-24-2	Flying Leads
S10MM-31-24-3	Line Connector
S10MM-31-24-4	90° Connector

Accessories

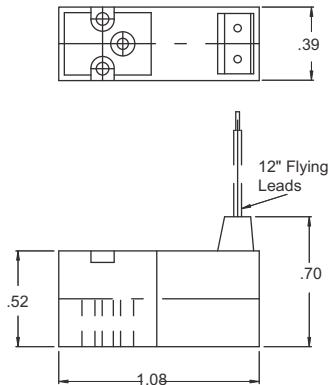
<i>Part Number</i>	<i>Description</i>
SMMC-300	Plug-in cable 300 mm
SMMC-500	Plug-in cable 500 mm
SMMC-1000	Plug-in cable 1000 mm
MSV10-CP	10 mm cover plate

Variety of voltages, orifices and connectors are available - contact factory with requirements

10 mm Solenoid Valve

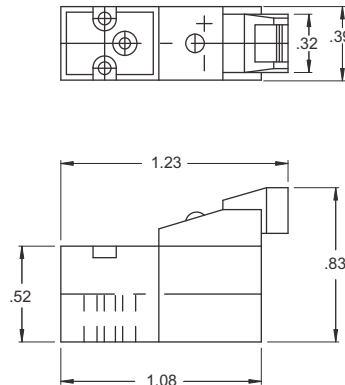
Flying Leads

“-2” Connector



Line Connector

“-3” Connector

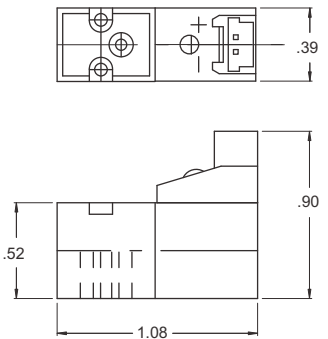


Ordering Information

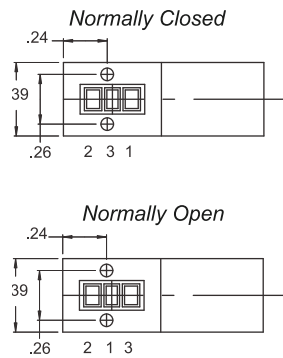
- To order standard product refer to Product Information listing.
- Cover Plates available for use with manifolds.
- Plug-in Cable for use with Line and 90° Connectors available.
- Mounting screws provided.

90° Connector

“-4” Connector



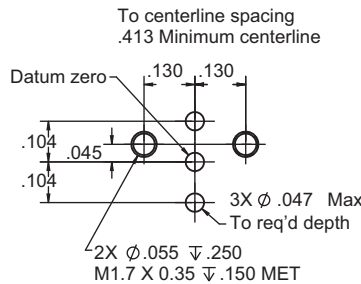
10 mm Port Designation



Polarity Counts!
Some valves require “+ to +” and “- to -” connection

● All measurements in inches, unless otherwise specified. When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

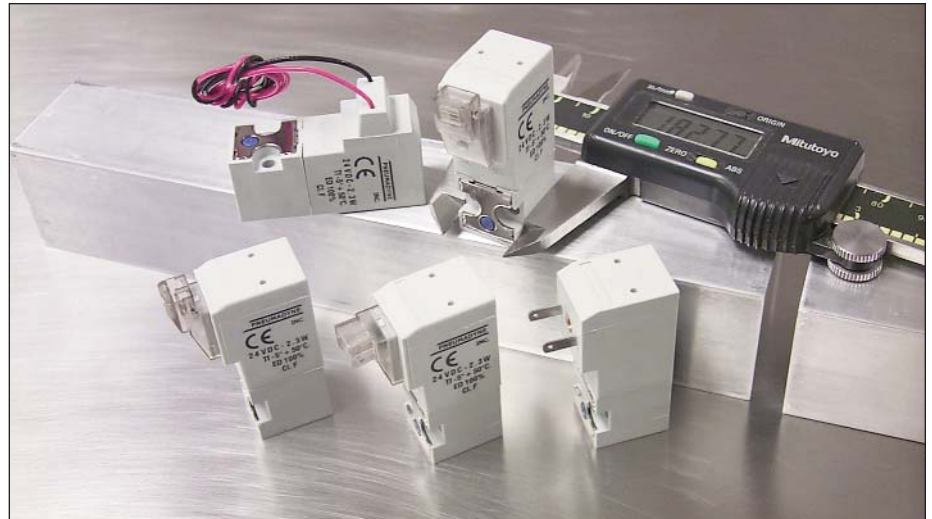
10 mm Footprint



For use with Pneumadyne’s 10 mm manifolds and bases. [Click here](#) for ordering information.

Features

- Miniature size (1.65" OAL)
- Direct acting
- Mounting versatility
- Lightweight (1.3 oz)
- Manual override
- Fast response time
- LED standard
- 2 & 3-way normally closed, 2 & 3-way normally open



2 & 3-Way Solenoid Valves 15 mm

Pneumadyne's 15 mm direct acting solenoid valves are a cost effective, space saving solution for the use of single or multiple valves. A wide variety of connector, electrical and mounting options are available to accommodate numerous applications.

Convenient Line & 90° Connectors (both with LED) provide quick electrical connection when used in conjunction with the plug-in cable (sold separately). The standard Flying Lead features 300 mm wires for direct connection. The 15 mm valves incorporate a fourth option, the Spade Connector, providing installation versatility (DIN Connector available).

Life Expectancy

50 million cycles @ 2,700 maximum cycles per minute (with standard working conditions)

This versatile valve offering includes 12 Volt DC, 24 Volt DC and 110 Volt AC coils. Three orifice diameters, 0.8 mm, 1.1 mm & 1.6 mm, are also available to fit flow rates to application requirements. Fast response times and high flow rates make this miniature valve ideal for a wide variety of applications.

Pneumatic Performance Data 15 mm

Temperature Range		20°F to 120°F (-5°C to 50°C)*				
Orifice/ Function	Operating Pressure	Cv 50 psi	Flow Rate (scfm) Max. psi0-90 psi		Fill Time sec/ in3 100-10 psi	Exhaust Time sec/ in3
			E, 0.8/1.1 mm NC, LW	150 psi		
D, 1.1/1.1 mm NC	150 psi	.028	1.10	3.10 @ 150 psi (10 bar)	.12	.17
D, 1.1/1.1 mm NO	105 psi	.029	.97	1.82 @ 105 psi (7 bar)	.14	.26
B, 1.6/1.6 mm NC	105 psi	.047	1.90	3.60 @ 105 psi (7 bar)	.07	.12
B, 1.6/1.6 mm NO	75 psi	.034	1.40	2.10 @ 75 psi (5 bar)	.10	.16
C, 1.6/1.1 mm NO	105 psi	.026	1.00	1.90 @ 105 psi (7 bar)	.21	.19

Cv per ANSI / (NFPA) T3.21.3, *100% Duty Cycled

Electrical Performance Data 15 mm

Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
-5 % to 10%	10 ms	12 ms	F 311°F (155°C)

Connector wire gauge: 24 AWG

Materials

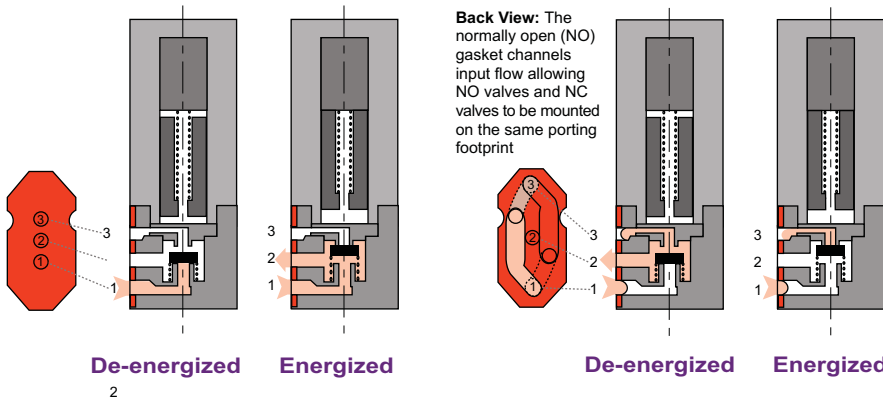
Copper, Nylon-Glass Filled, Stainless Steel, Buna-N

15 mm Solenoid Valve Cross Section

3-Way

3-Way Normally Closed

3-Way Normally Open



Port Designation

1	Input Port
2	Output Port
3	Exhaust Port

Product Number Diagram

15 mm

S 1 5 M M - 3 0 - 1 2 - 0 B

Actuator
Solenoid 15 mm

Function
2= 2-Way
3= 3-Way

Position One
0= Normally Closed
1= Normally Open

Connectors
0= Spade
2= Flying Leads 300 mm
3= Line Connector w/LED
4= 90° Connector w/LED

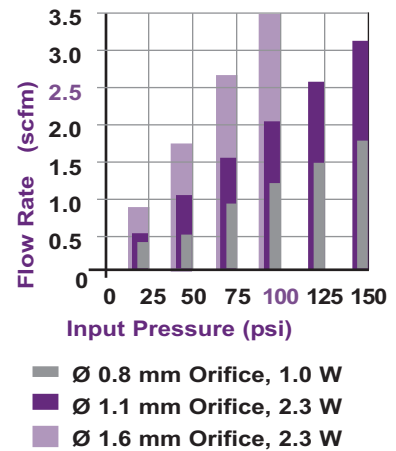
Voltage
12= 12V DC
12W = 12V DC 1 Watt
24= 24V DC
24W= 24V DC 1 Watt
110 = 110 AC

Orifice
B= Ø 1.6/1.6 mm
C = Ø 1.6/1.1 mm (NO only)
D= Ø 1.1/1.1 mm
E= Ø 0.8/1.1 mm

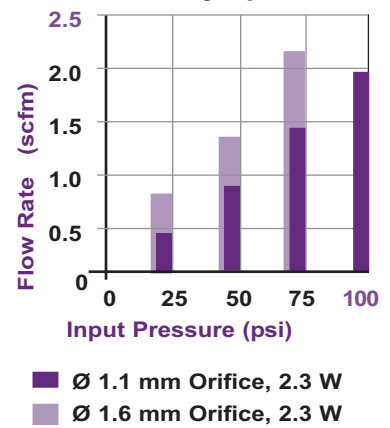
Example:

15 mm, 3-Way, Normally Closed, 12V DC, Spade Connector, 1.6 mm Ø Orifice

15 mm Solenoid Flow Chart
Normally Closed



15 mm Solenoid Flow Chart
Normally Open



Polarity Counts!
Some components require “+ to +” and “- to -” connection



15 mm Cover Plate (sold separately) includes mounting screws



DIN Connectors (sold separately-shown installed) available for 15 mm Spade Connector



Normally closed and normally open 15 mm valves can be mounted on the same manifold

Coil can be rotated 180°

Cylinder Control Valves are ideal for applications requiring controlled movement of single-acting spring return cylinders. Designed for use with Pneumadyne's 15mm valves.

Product Information 15 mm

2-Way Normally Closed

Part Number	Connection
12V DC/ 2.5 Watt/ Orifice 1.6/1.6 mm	
105 psi- Max. Operating Pressure	
S15MM-20-12-0B	Spade
S15MM-20-12-2B	Flying Leads
S15MM-20-12-3B	Line Connector
S15MM-20-12-4B	90° Connector
12V DC/ 2.5 Watt/ Orifice 1.1/1.1 mm	
150 psi- Max. Operating Pressure	
S15MM-20-12-0D	Spade
S15MM-20-12-2D	Flying Leads
S15MM-20-12-3D	Line Connector
S15MM-20-12-4D	90° Connector
12V DC/ 1.0 Watt/ Orifice 0.8/1.1 mm	
150 psi- Max. Operating Pressure	
S15MM-20-12W-0E	Spade
S15MM-20-12W-2E	Flying Leads
S15MM-20-12W-3E	Line Connector
S15MM-20-12W-4E	90° Connector

24V DC/ 2.5 Watt/ Orifice 1.6/1.6 mm	
105 psi- Max. Operating Pressure	
S15MM-20-24-0B	Spade
S15MM-20-24-2B	Flying Leads
S15MM-20-24-3B	Line Connector
S15MM-20-24-4B	90° Connector

24V DC/ 2.5 Watt/ Orifice 1.1/1.1 mm	
150 psi- Max. Operating Pressure	
S15MM-20-24-0D	Spade
S15MM-20-24-2D	Flying Leads
S15MM-20-24-3D	Line Connector
S15MM-20-24-4D	90° Connector

24V DC/ 1.0 Watt/ Orifice 0.8/1.1 mm	
150 psi- Max. Operating Pressure	
S15MM-20-24W-0E	Spade
S15MM-20-24W-2E	Flying Leads
S15MM-20-24W-3E	Line Connector
S15MM-20-24W-4E	90° Connector

2-Way Normally Open

Part Number	Connection
12V DC/ 2.5 Watt/ Orifice 1.6/1.6 mm	
75 psi- Max. Operating Pressure	
S15MM-21-12-0B	Spade
S15MM-21-12-2B	Flying Leads
S15MM-21-12-3B	Line Connector
S15MM-21-12-4B	90° Connector
12V DC/ 2.5 Watt/ Orifice 1.6/1.1 mm	
105 psi- Max. Operating Pressure	
S15MM-21-12-0C	Spade
S15MM-21-12-2C	Flying Leads
S15MM-21-12-3C	Line Connector
S15MM-21-12-4C	90° Connector

24V DC/ 2.5 Watt/ Orifice 1.6/1.6 mm	
75 psi- Max. Operating Pressure	
S15MM-21-24-0B	Spade
S15MM-21-24-2B	Flying Leads
S15MM-21-24-3B	Line Connector
S15MM-21-24-4B	90° Connector

24V DC/ 2.5 Watt/ Orifice 1.6/1.1mm	
105 psi- Max. Operating Pressure	
S15MM-21-24-0C	Spade
S15MM-21-24-2C	Flying Leads
S15MM-21-24-3C	Line Connector
S15MM-21-24-4C	90° Connector

Accessories

Part Number	Description
SMMC-300	Plug-in cable 300 mm
SMMC-500	Plug-in cable 500 mm
SMMC-1000	Plug-in cable 1000 mm
MSV15-CP	15mm cover plate
SMM-DIN	DIN (15 mm ONLY)
SMM-MDIN	Molded DIN cable 3 M (15 mm ONLY)

Product Information 15 mm

3-Way Normally Closed

Part Number	Connection
12V DC/ 2.5 Watt/ Orifice 1.6/1.6 mm	
105 psi- Max. Operating Pressure	
S15MM-30-12-0B	Spade
S15MM-30-12-2B	Flying Leads
S15MM-30-12-3B	Line Connector
S15MM-30-12-4B	90° Connector
12V DC/ 2.5 Watt/ Orifice 1.1/1.1 mm	
150 psi- Max. Operating Pressure	
S15MM-30-12-0D	Spade
S15MM-30-12-2D	Flying Leads
S15MM-30-12-3D	Line Connector
S15MM-30-12-4D	90° Connector
12V DC/ 1.0 Watt/ Orifice 0.8/1.1 mm	
150 psi- Max. Operating Pressure	
S15MM-30-12W-0E	Spade
S15MM-30-12W-2E	Flying Leads
S15MM-30-12W-3E	Line Connector
S15MM-30-12W-4E	90° Connector

24V DC/ 2.5 Watt/ Orifice 1.6/1.6 mm	
105 psi- Max. Operating Pressure	
S15MM-30-24-0B	Spade
S15MM-30-24-2B	Flying Leads
S15MM-30-24-3B	Line Connector
S15MM-30-24-4B	90° Connector
24V DC/ 2.5 Watt/ Orifice 1.1/1.1 mm	
150 psi- Max. Operating Pressure	
S15MM-30-24-0D	Spade
S15MM-30-24-2D	Flying Leads
S15MM-30-24-3D	Line Connector
S15MM-30-24-4D	90° Connector
24V DC/ 1.0 Watt/ Orifice 0.8/1.1 mm	
150 psi- Max. Operating Pressure	
S15MM-30-24W-0E	Spade
S15MM-30-24W-2E	Flying Leads
S15MM-30-24W-3E	Line Connector
S15MM-30-24W-4E	90° Connector

3-Way Normally Closed (Cont'd)

Part Number	Connection
110V AC/ 2.8 VA/ Orifice 1.6/1.6 mm	
105 psi- Max. Operating Pressure	
S15MM-30-110-0B	Spade
S15MM-30-110-2B	Flying Leads
S15MM-30-110-3B	Line Connector
S15MM-30-110-4B	90° Connector
110V AC/ 2.8 VA/ Orifice 1.1/1.1mm	
S15MM-30-110-0D	Spade
S15MM-30-110-2D	Flying Leads
S15MM-30-110-3D	Line Connector
S15MM-30-110-4D	90° Connector

3-Way Normally Open

Part Number	Connection
12V DC/ 2.5 Watt/ Orifice 1.6/1.6 mm	
75 psi- Max. Operating Pressure	
S15MM-31-12-0B	Spade
S15MM-31-12-2B	Flying Leads
S15MM-31-12-3B	Line Connector
S15MM-31-12-4B	90° Connector
12V DC/ 2.5 Watt/ Orifice 1.6/1.1 mm	
105 psi- Max. Operating Pressure	
S15MM-31-12-0C	Spade
S15MM-31-12-2C	Flying Leads
S15MM-31-12-3C	Line Connector
S15MM-31-12-4C	90° Connector
12V DC/ 2.5 Watt/ Orifice 1.1/1.1 mm	
105 psi- Max. Operating Pressure	
S15MM-31-12-0D	Spade
S15MM-31-12-2D	Flying Leads
S15MM-31-12-3D	Line Connector
S15MM-31-12-4D	90° Connector



Pneumadyne's Solenoid Valves are recommended for use with our solenoid manifolds & single bases. For mounting convenience, single to 12-station manifolds are available with 10-32 (F) or M5 (F) threads. [See page 126 for product](#) for ordering information.

3-Way Normally Open (Cont'd)

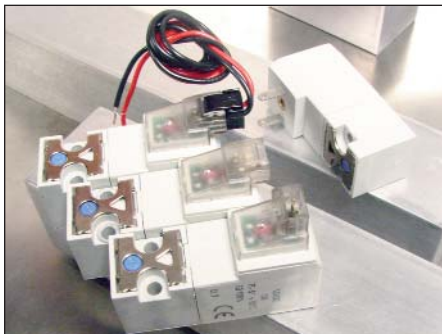
Part Number	Connection
24V DC/ 2.5 Watt/ Orifice 1.6/1.6 mm	
75 psi- Max. Operating Pressure	
S15MM-31-24-0B	Spade
S15MM-31-24-2B	Flying Leads
S15MM-31-24-3B	Line Connector
S15MM-31-24-4B	90° Connector
24V DC/ 2.5 Watt/ Orifice 1.6/1.1mm	
105 psi- Max. Operating Pressure	
S15MM-31-24-0C	Spade
S15MM-31-24-2C	Flying Leads
S15MM-31-24-3C	Line Connector
S15MM-31-24-4C	90° Connector
24V DC/ 2.5 Watt/ Orifice 1.1/1.1mm	
105 psi- Max. Operating Pressure	
S15MM-31-24-0D	Spade
S15MM-31-24-2D	Flying Leads
S15MM-31-24-3D	Line Connector
S15MM-31-24-4D	90° Connector



Position indicators- **Silver** plate indicates normally closed valve
Black plate indicates normally open valve



Manual override is standard on all 15 mm Solenoid Valves

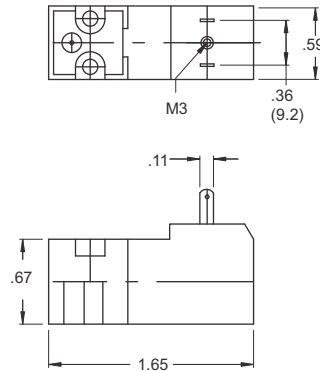


A variety of connector options provides installation versatility

15 mm Solenoid Valve

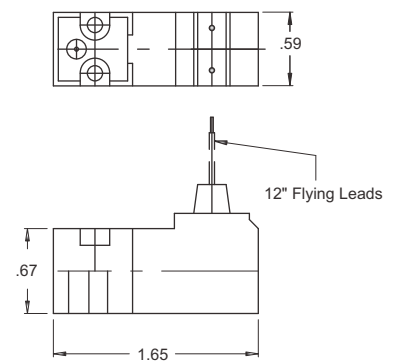
Spade

"-0" Connector



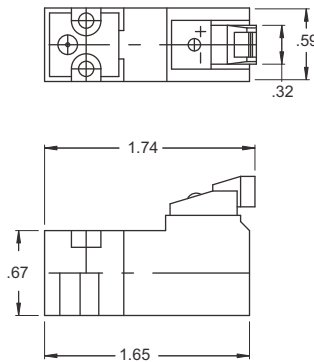
Flying Leads

"-2" Connector



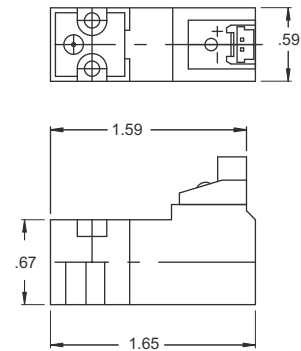
Line Connector

"-3" Connector



90° Connector

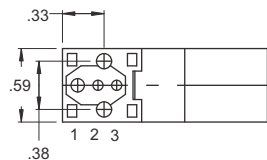
"-4" Connector



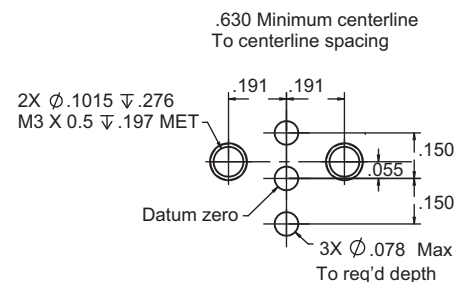
Ordering Information

- To order standard product refer to Product Information listing.
- Cover Plates available for use with manifolds.
- Plug-in Cable for use with Line and 90° Connectors available.
- Mounting screws provided.

15 mm Port Designation



15 mm Footprint



● All measurements in inches, unless otherwise specified. When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.



Solenoid Operated Custom Products

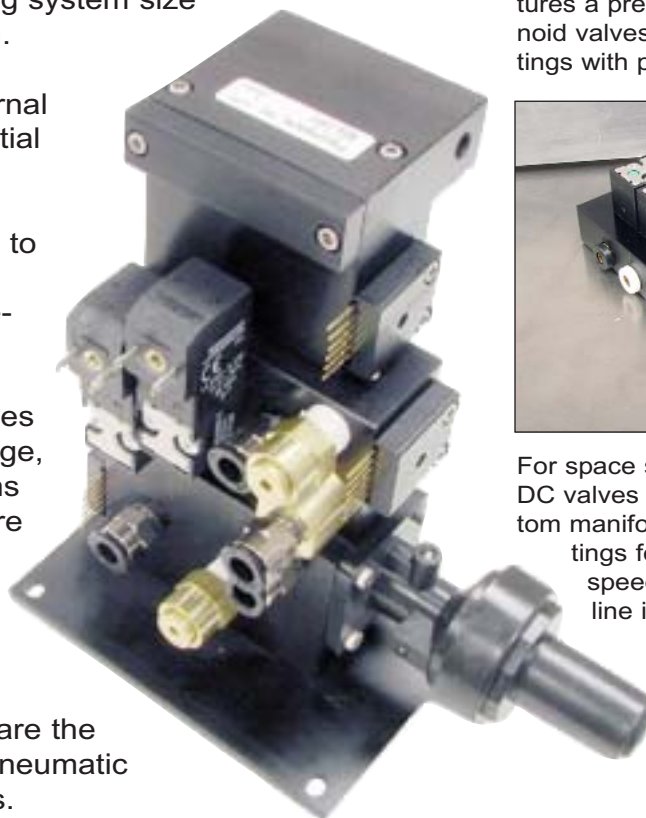
- Reduce system size through component consolidation
- Ease product installation saving time & money
- Eliminate potential leak-points
- Improve efficiency & appearance through good design
- Increase reliability with quality components

Incorporating Solenoid Valves in Custom Products

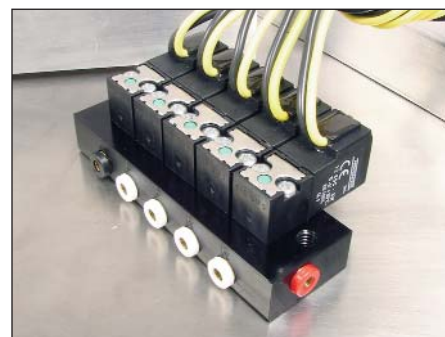
For over 30 years, manufacturers have relied on Pneumadyne for innovative solutions to their fluid handling applications. Whether using standard or custom products, we take the time to understand your needs and recommend components and systems that best fit your requirements.

Incorporating solenoid valves in custom products allows Pneumadyne engineers to consolidate components into a common body thereby reducing system size and easing product installation. Component consolidation also decreases the number of external connections, eliminating potential leak-points in your application.

From basic lifting mechanisms to critical medical devices, the breadth of Pneumadyne's solenoid offering lends itself to a wide variety of applications. Four styles of high quality valves provide an assortment of voltage, connection and wattage options to ensure that specifications are met when used in custom products. With flow rates ranging from .99 to 7.5 scfm at 100 psi and response rates as low as 8 milliseconds, Pneumadyne solenoid valves are the ideal interface between your pneumatic systems and electrical controls.



This distinctive valve assembly features a pressure regulator, two solenoid valves, a needle valve and fittings with precision orifices



For space saving purposes, five 12V DC valves are condensed on a custom manifold. Push-to-connect fittings feature colored collets to speed installation and simplify line identification.

Features

- Multiple mounting options
- Independent coil orientation
- Manual override
- 2 & 3-Way normally closed
- DIN Connector available



2 & 3-Way Solenoid Valves System 6

System 6 solenoids offer fast response times. A wide variety of voltages is available to fit application specifications. The low wattage (0.8 watt) version is ideal for use in low power control circuits.

Single to 5-station manifolds are available for mounting convenience. System 6 solenoids can be fixed in either direction on the manifold and coil orientation is independent of valve orientation.

Life Expectancy

20 million cycles

Pneumatic Performance Data System 6

Temperature Range			5°F to 122°F (-15°C to 50°C)			
Orifice/Wattage	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		
Ø 0.6 mm / 0.8 watt	0-125 psi	.02	.47	1.05	.29	.47
Ø 1.0 mm / 2.9 watt, 3.1 VA	0-125 psi	.04	1.27	2.78	.11	.18

Cv per ANSI / (NFPA) T3.21.3

Electrical Performance Data System 6

Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
-10% to 10%	15 ms	7 ms	F 311°F (155°C)

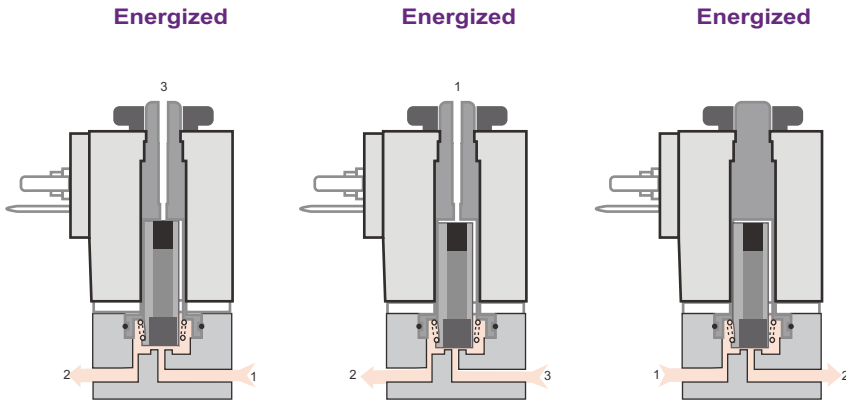
Flying leads wire gauge: 24 AWG

Materials

Brass, Enameled Copper, Viton®, Polyimide, Cr-Ni-Steel

System 6 Solenoid Valve Cross Section

2-Way & 3-Way



3-Way
Normally
Closed

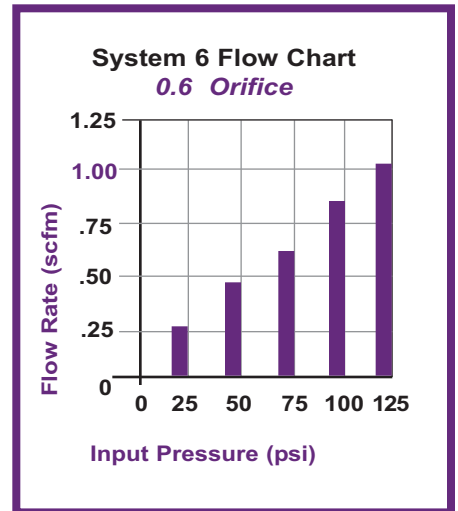
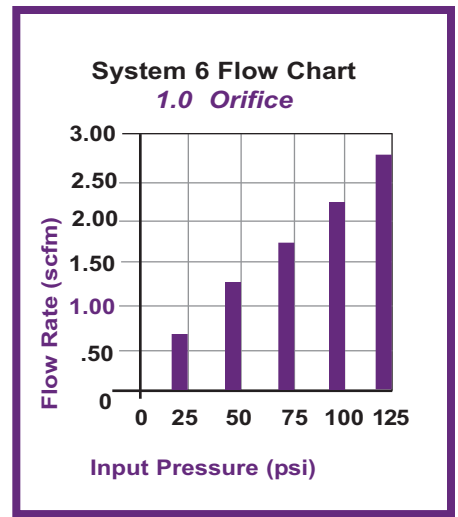
3-Way
Normally
Open

2-Way
Normally
Closed

Port designation

1	2	3
Input Port	Output Port	Exhaust Port

The low wattage (0.8 watt) version solenoid valve is ideal for use in low power control circuits



18" 20 AWG Flying Leads



DIN Connector (shown installed)
Provides dust and watertight termination while relieving strain between cable and solenoid



System 6 coil can be fixed at 12 o'clock, 3, 6, and 9 o'clock on the valve body

Coil orientation is independent of valve orientation

Product Information System 6

2-Way Normally Closed

<i>Part Number</i>	<i>Description</i>
Orifice 1.0 mm	
S6-20-110-0	110/120 AC, 3.1 VA, Spade
S6-20-110-2	110/120 AC, 3.1 VA, Flying Leads
S6-20-12-0	12 DC, 2.9 Watt, Spade
S6-20-12-2	12 DC, 2.9 Watt, Flying Leads
S6-20-220-0	220/240 AC, 3.1 VA, Spade
S6-20-220-2	220/240 AC, 3.1 VA, Flying Leads
S6-20-24AC-0	24 AC, 3.1 VA, Spade
S6-20-24AC-2	24 AC, 3.1 VA, Flying Leads
S6-20-24-0	24 DC, 2.9 Watt, Spade
S6-20-24-2	24 DC, 2.9 Watt, Flying Leads

<i>Part Number</i>	<i>Description</i>
Orifice 0.6 mm	
S6-20-12LW-0	12 DC, 0.8 Watt, Spade
S6-20-12LW-2	12 DC, 0.8 Watt, Flying Leads
S6-20-24LW-0	24 DC, 0.8 Watt, Spade
S6-20-24LW-2	24 DC, 0.8 Watt, Flying Leads

3-Way Normally Closed

<i>Part Number</i>	<i>Description</i>
Orifice 1.0 mm	
S6-30-110-0	110/120 AC, 3.1 VA, Spade
S6-30-110-2	110/120 AC, 3.1 VA, Flying Leads
S6-30-12-0	12 DC, 2.9 Watt, Spade
S6-30-12-2	12 DC, 2.9 Watt, Flying Leads
S6-30-220-0	220/240 AC, 3.1 VA, Spade
S6-30-220-2	220/240 AC, 3.1 VA, Flying Leads
S6-30-24AC-0	24 AC, 3.1 VA, Spade
S6-30-24AC-2	24 AC, 3.1 VA, Flying Leads
S6-30-24-0	24 DC, 2.9 Watt, Spade
S6-30-24-2	24 DC, 2.9 Watt, Flying Leads

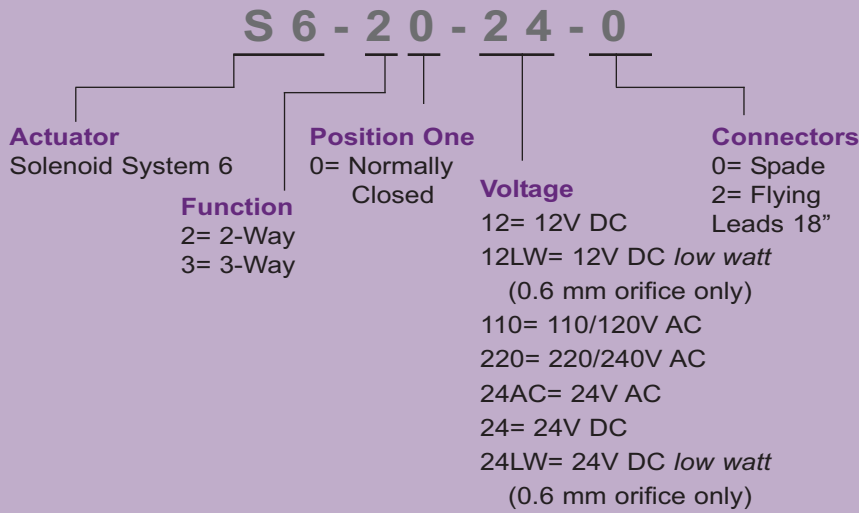
<i>Part Number</i>	<i>Description</i>
Orifice 0.6 mm	
S6-30-12LW-0	12 DC, 0.8 Watt, Spade
S6-30-12LW-2	12 DC, 0.8 Watt, Flying Leads
S6-30-24LW-0	24 DC, 0.8 Watt, Spade
S6-30-24LW-2	24 DC, 0.8 Watt, Flying Leads

Accessories

S6-DIN	DIN Connector
--------	---------------

For use with Pneumadyne's System 6 manifolds and bases.
[See page 129 for product](#) and ordering information

Product Number Diagram System 6



Example:

Solenoid System 6, 2-Way, Normally Closed, 24V DC, Spade connectors

Ordering Information

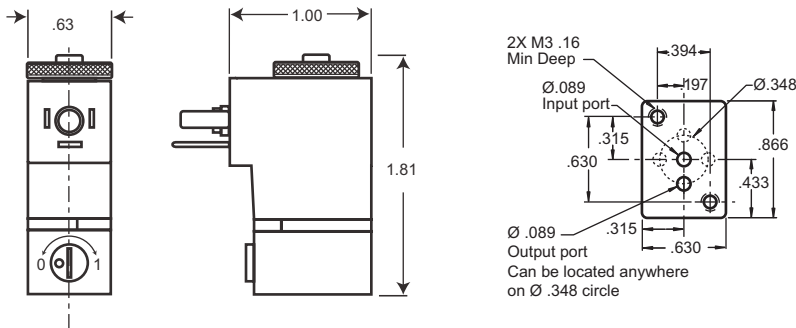
- Solenoid valve and manifold sold separately.
- To order standard product refer to Product Information listing.
- Mounting screws (2) are provided.
- Contact factory for DIN Connector with LED and/or suppression.



A wide variety of voltages is available to fit application specifications

System 6

Footprint



- All measurements in inches, unless otherwise specified. When design makes a dimensions critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Features

- Multiple mounting options
- Independent coil orientation
- Manual override
- 2 & 3-Way normally closed, 3-Way normally open
- DIN connector available
- 6.0 Watt coils



2 & 3-Way Solenoid Valves System 8

Pneumadyne's System 8 Solenoid Valves feature a larger orifice for applications requiring higher flow rates. A variety of voltage and mounting options are available to fit system specifications.

Our single base and 2 to 10-station manifolds are convenient solutions for plumbing single or multiple valves. System 8 solenoid valves can be fixed in either direction on the manifold and coil orientation is independent of valve orientation.



System 8 Solenoid Valves feature a larger orifice for applications requiring higher flow rates

Pneumatic Performance Data System 8

Temperature Range			5°F to 122°F (-15°C to 50°C)			
Orifice/ Function	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		
1.5 mm/ 3WNC / 3WNO	0-150 psi	.074	2.83	6.2	.05	.08
2.5 mm/ 2WNC	0-150 psi	.106	4.10	9.0	.03	N/A

Cv per ANSI / (NFPA) T3.21.3

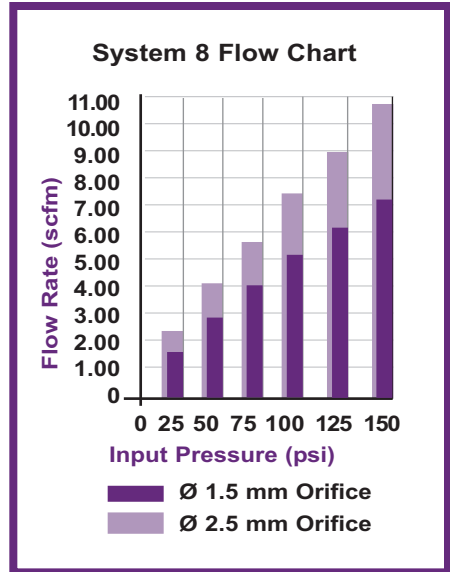
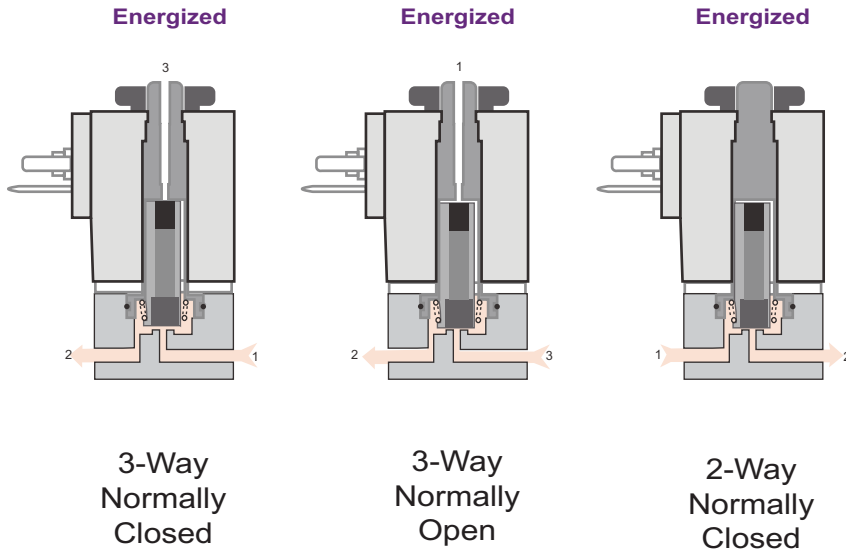
Electrical Performance Data System 8

Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
-10% to 10%	8 ms	9 ms	F 311°F (155°C)

Materials

Brass, Enameled Copper, Viton®, Polyimide, Cr-Ni-Steel

System 8 Solenoid Valve Cross Section 2-Way & 3-Way



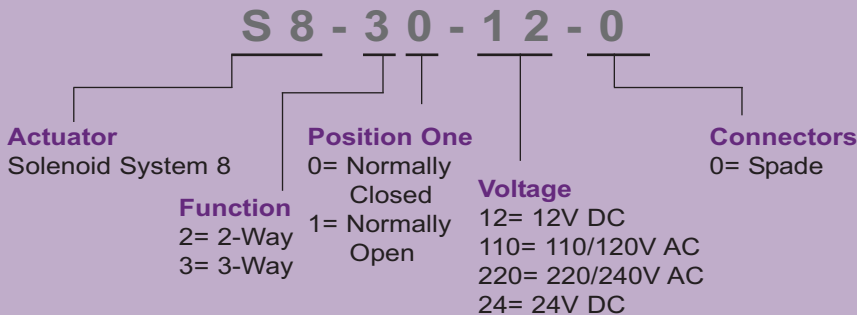
Port designation

1	2	3
Input Port	Output Port	Exhaust Port



S8-DIN- Degree of protection according to IEC 529 in attached state: IP 65
 Cable outlet can be turned 180°
 Surge suppression available with LED light

Product Number Diagram System 8



Example:

Solenoid System 8, 3-Way, Normally Closed, 12V DC, Spade connectors

2 to 10-station manifolds are convenient solutions for plumbing single or multiple valves



DIN Connector (shown installed)
Provides dust and watertight termination while relieving strain between cable and solenoid



System 8 coil can be fixed at 12 o'clock, 3, 6, and 9 o'clock on the valve body

Product Information System 8

2-Way Normally Closed

Part Number	Description
Orifice 2.5 mm	
S8-20-12-0	12 DC, 6.0 Watt
S8-20-24-0	24 DC, 6.0 Watt
S8-20-110-0	110/120 AC, 9.3 VA
S8-20-220-0	220/240 AC, 9.3 VA

3-Way Normally Open

Part Number	Description
Orifice 1.5 mm	
S8-31-12-0	12 DC, 6.0 Watt
S8-31-24-0	24 DC, 6.0 Watt
S8-31-110-0	110/120 AC, 9.3 VA
S8-31-220-0	220/240 AC, 9.3 VA

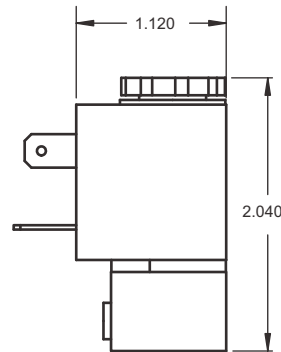
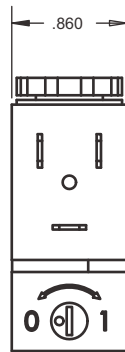
3-Way Normally Closed

Part Number	Description
Orifice 1.5 mm	
S8-30-12-0	12 DC, 6.0 Watt
S8-30-24-0	24 DC, 6.0 Watt
S8-30-110-0	110/120 AC, 9.3 VA
S8-30-220-0	220/240 AC, 9.3 VA

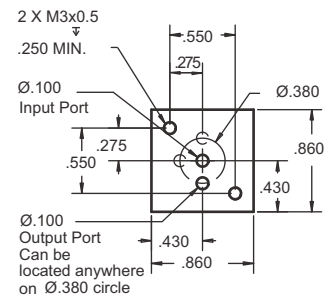
Accessories

S8-DIN	DIN Connector
--------	---------------

System 8



Footprint

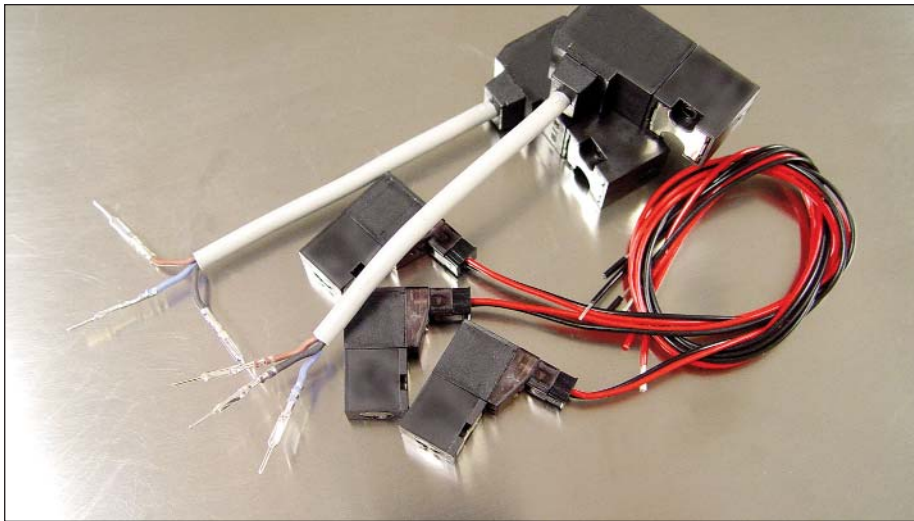


Coil orientation is independent of valve orientation

● All measurements in inches, unless otherwise specified. When design makes a dimensions critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Ordering Information

- Solenoid valve and manifold sold separately.
- To order standard product refer to Product Information listing.
- Mounting screws (2) are provided.
- Contact factory for DIN Connector with LED and/or suppression.
- EPDM seals are optional. Contact factory for ordering information.



Features

- Momentary pulse required to energize & to de-energize
- 3-Wire system (15 mm)
- Relay not required to reverse polarity (15 mm)
- 2-Way & 3-Way normally closed
- Fast response time
- 12 & 24 V DC
- 10 mm & 15 mm valves
- Miniature size

Pneumatic Performance Data

Temperature Range		20°F to 120°F (-5°C to 50°C)					
	Orifice/ Function	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	Max. psi		
10 mm	.75 mm NC	0 to 105 psi	.016	0.62	1.22 @ 105psi (7 Bar)	.23	.30
15 mm	1.1 mm NC	0 to 150 psi	.032	1.28	3.38 @ 150 psi (10 bar)	.11	.17
15 mm	1.6 mm NC	0 to 105 psi	.046	1.98	3.93 @ 105 psi (7 bar)	.073	.12

Cv per ANSI / (NFPA) T3.21.3
*Will operate at 1.0 psi

Electrical Performance Data

	Power (Watt)	Voltages	Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
10 mm	1.6	24 DC	-5 % to 10%	8 ms	10 ms	F 311°F (155°C)
15 mm	4	12 DC, 24 DC	-5 % to 10%	10 ms	12 ms	F 311°F (155°C)

Flying leads wire gauge: 24 AWG

Materials

Copper, Nylon-Glass Filled, Stainless Steel, Buna-N

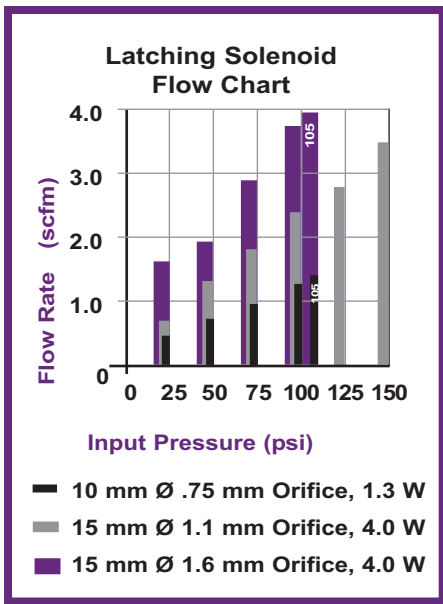
2 & 3-Way Latching Solenoid Valves 10 & 15 mm

Pneumadyne's 10 mm & 15 mm Latching Solenoid Valves are ideal for applications where power is limited or coil heating is unwanted; continuous power is not required to maintain the energized position. An internal magnet holds the valve in the open position when the power supply is removed, saving power consumption. Fast response times allow for a momentary pulse to energize and de-energize the valves. The 15 mm valves need only 10 milliseconds to energize and 12 milliseconds to de-energize.

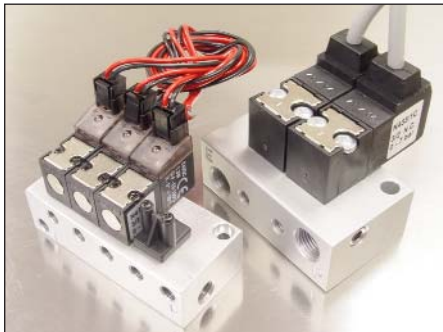
Life Expectancy

50 million cycles- with standard working conditions-@ 2,700 maximum cycles per minute

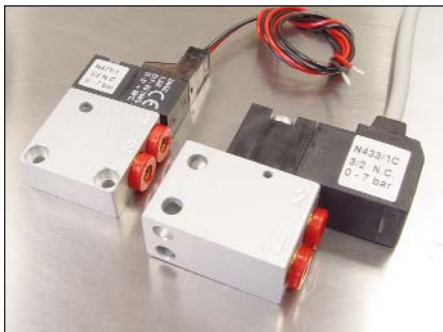
15 mm valves energize in 10 milliseconds and de-energize in 12 milliseconds



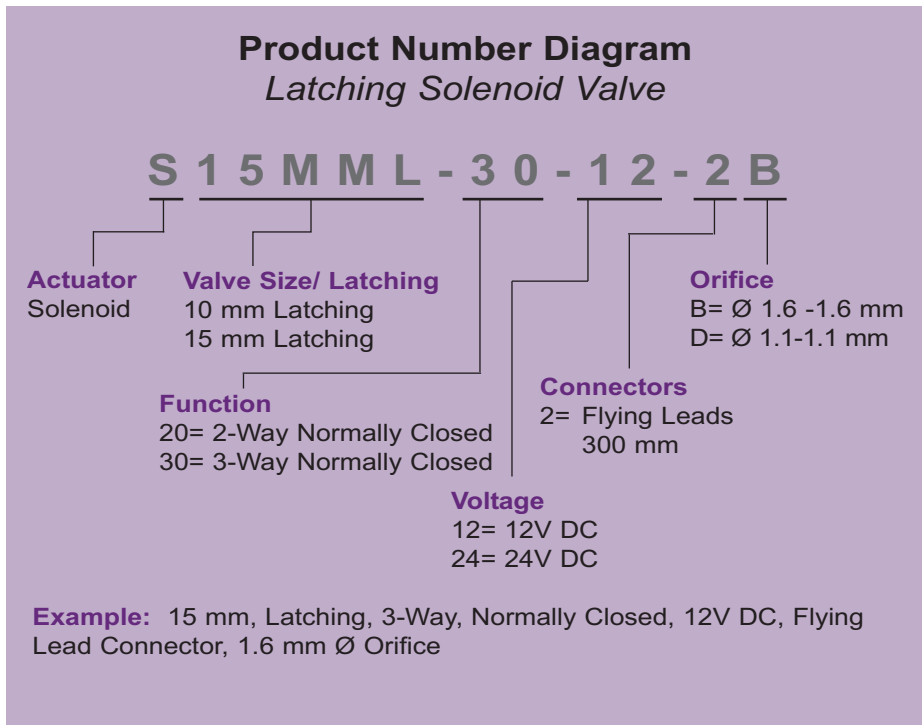
Pneumadyne's Latching Solenoid Valves are recommended for use with our solenoid manifolds & single bases. For mounting convenience, single to 12-station manifolds are available with 10-32 (F) or M5 (F) threads.



Manifolds are designed for use with specific valves. Be sure to select from the correct product grouping when [ordering manifolds and bases](#) for use with solenoid valves



[Single bases available](#) with a variety of porting options



Function: 10 mm Valve

The 10 mm valve features a 2-wire system to reverse polarity. Applying an electrical signal to the Red wire and ground to the Black wire energizes (latches) the valve. An internal magnet holds the valve in the energized (open) position when the power supply is removed. Reversing the wires, ground to Red and electrical signal to Black, de-energizes (unlatches) the valve.

2-Wire System

Power to Red, Ground to Black – Latch / Energize
Ground to Red, Power to Black – Unlatch / De-energize

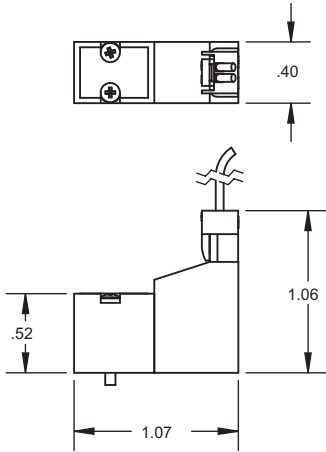
Function: 15 mm Valve

The 15 mm valves feature a 3-wire system to reverse polarity; Relays are not required. Applying an electrical signal to the Brown wire energizes (latches) the valve. The internal magnet holds the valve in the energized (open) position when the power supply is removed. Applying an electrical signal to the Blue wire de-energizes (unlatches) the valve.

3-Wire System

Brown – Latch / Energize / +
Black – Common / -
Blue – Unlatch / De-energize / +

Latching Solenoid Valve

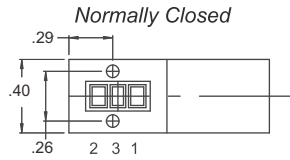


Port designation

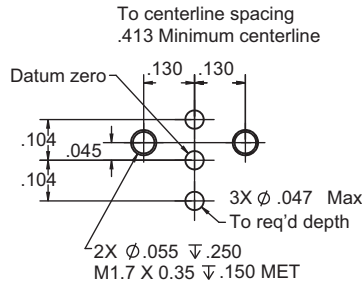
1	Input Port
2	Output Port
3	Exhaust Port

Port Designation

10 mm



Footprint



Product Information

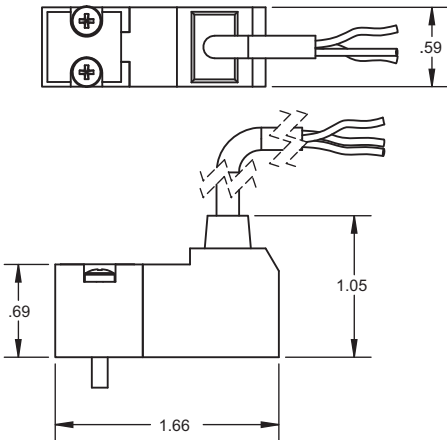
2-Way Normally Closed

Part Number	Voltage	Orifice
15 mm (4.0 Watt)		
S15MML-20-12-2B	12 DC	1.6 mm
S15MML-20-12-2D	12 DC	1.1 mm
S15MML-20-24-2B	24 DC	1.6 mm
S15MML-20-24-2D	24 DC	1.1 mm

3-Way Normally Closed

Part Number	Voltage	Orifice
10 mm (1.6 Watt) Flying Leads		
S10MML-30-24-2	24 DC	.75 mm
15 mm (4.0 Watt)		
S15MML-30-6-2B	6 DC	1.6 mm
S15MML-30-12-2B	12 DC	1.6 mm
S15MML-30-12-2D	12 DC	1.1 mm
S15MML-30-24-2B	24 DC	1.6 mm
S15MML-30-24-2D	24 DC	1.1 mm

Latching Solenoid Valve

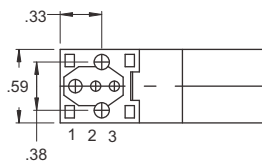


Port designation

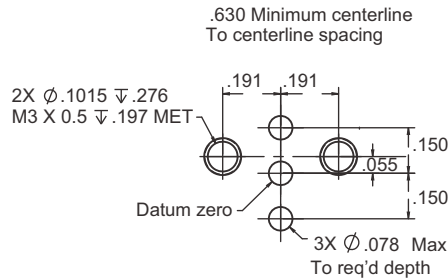
1	Input Port
2	Output Port
3	Exhaust Port

Port Designations

15 mm



Footprint



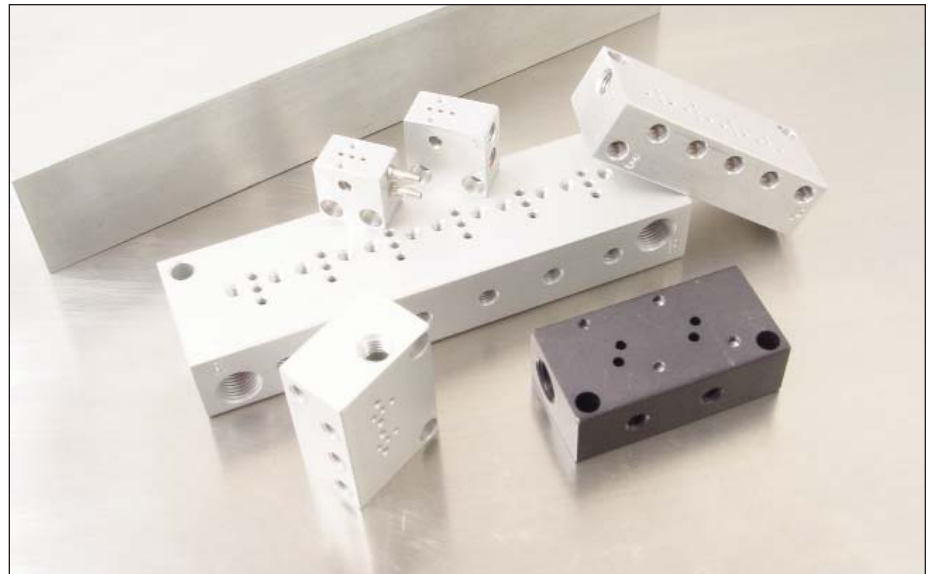
Ordering Information

- To order standard product refer to Product Information listing.
- Solenoid valve and manifold sold separately.
- Cover Plates available for use with manifolds.
- Mounting screws (2) are provided.

● All measurements in inches, unless otherwise specified. When design makes a dimensions critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Features

- Single to 12 stations
- Variety of port sizes
- Compact
- Precision machined
- Anodized aluminum for corrosion resistance



Manifolds & Single Bases

For use with Pneumadyne Solenoid Valves

Pneumadyne manifolds are a compact, cost effective solution for mounting multiple [solenoid valves](#). Single to 12-station manifolds are available with 10-32 (F), M5 (F), 1/8 NPT (F) or 1/4 NPT (F) threads. For added versatility, the single bases also feature 5/32 push-to-connect.

All manifolds are anodized for corrosion resistance. Cover plates are available to conceal unused stations and block the valve supply port.

● [Push-to-connect fittings available](#) for 1/8" and 5/32" OD tubing. (For use with multiple station manifolds)



Manifolds are designed for use with specific valves. Be sure to select from the correct product grouping when ordering manifolds and bases for use with solenoid valves.

Performance Data

Temperature Range	Operating Pressure
-10°F to 200°F -23°C to 93°C	Determined by Valve

Materials

Aluminum/ Anodize

Port Options

Manifold	Single Station	Multiple Station	
		Pressure	Output
10 mm	● M5 ● 10-32 ● 5/32 PI	● 10-32 ● M5	● 10-32 ● M5
15 mm	● M5 ● 10-32 ● 5/32 PI	1/8 NPT	10-32
System 6	10-32	1/8 NPT	10-32
System 8	1/8 NPT	1/4 NPT	10-32

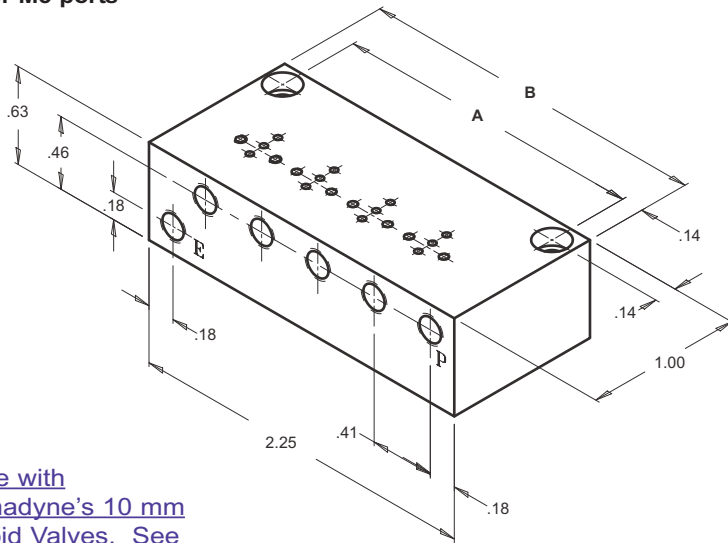
Fitting Recommendations

Standard 1/4 hex O-ring fittings are recommended for use with standard threaded manifolds and single bases. Please refer to Pneumadyne's full line catalog for fitting information.

Fittings must be installed prior to mounting valves.

10 mm Manifold

Multiple Station
10-32 or M5 ports



MSV10-4

For use with
Pneumadyne's 10 mm
Solenoid Valves. See
page 106 for product
information.

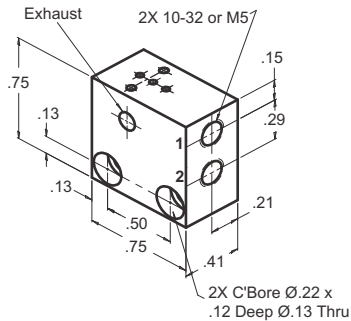
10 mm Manifolds

Part Number	Stations	A	B
MSV10-2	2	1.16	1.42
MSV10-4	4	1.99	2.25
MSV10-6	6	2.81	3.08
MSV10-8	8	3.64	3.91
MSV10-10	10	4.47	4.73
MSV10-12	12	5.30	5.56
MSV10-2-M5	2	1.16	1.42
MSV10-4-M5	4	1.99	2.25
MSV10-6-M5	6	2.81	3.08
MSV10-8-M5	8	3.64	3.91
MSV10-10-M5	10	4.47	4.73
MSV10-12-M5	12	5.30	5.56

10 mm Single Bases

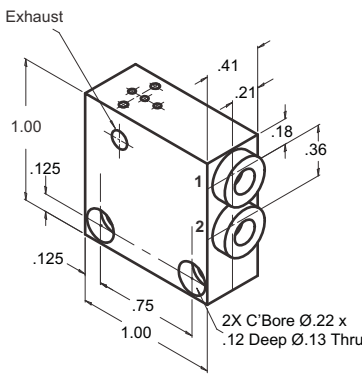
Single Station
Non-threaded exhaust

MSV10-1 10-32 ports
MSV10-1-M5 M5 ports



● For use with 1/4 hex fittings

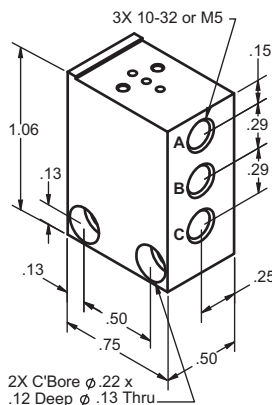
MSV10-1-156
5/32 push-to-connect ports



10 mm Single Bases

Part Number	Stations	Lgth	wdth	hgt
MSV10-1	1	.75	.41	.75
MSV10-1-M5	1	.75	.41	.75
MSV10-1-156	1	1.00	.41	1.00
MSV10-1P	1	.75	.50	1.06
MSV10-1-M5P	1	.75	.50	1.06

MSV10-1P
MSV10-1-M5P



Port Designation

	NC	NO
A	Input	Exhaust
B	Exhaust	Input
C	Output	Output

● All measurements in inches, unless otherwise specified. When design makes a dimensions critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Mounting Instructions
10 mm

Normally Open Valves

- Single bases -use MSV10-1P
- Multiple station manifolds - plumb exhaust port (E) as input, pressure port (P) becomes exhaust
- Cannot be mounted with normally closed valves on the same manifold

Refer to [fitting recommendation information](#)

15 mm Manifolds

Part Number	Stations	A	B
MSV15-2	2	1.74	2.13
MSV15-4	4	2.99	3.38
MSV15-6	6	4.24	4.63
MSV15-8	8	5.49	5.88
MSV15-10	10	6.74	7.13
MSV15-12	12	7.99	8.38
MSV15-2-M5	2	1.74	2.13
MSV15-4-M5	4	2.99	3.38
MSV15-6-M5	6	4.24	4.63
MSV15-8-M5	8	5.49	5.88
MSV15-10-M5	10	6.74	7.13
MSV15-12-M5	12	7.99	8.38

Normally closed and normally open 15 mm valves can be mounted on the same manifold

15 mm Bases

Part Number	Stations	Lgth	wdth	hgt
MSV15-1	1	1.25	.63	.66
MSV15-1-M5	1	1.25	.63	.66
MSV15-1-M5P	1	1.25	.63	.88
MSV15-1P	1	1.25	.63	.88
MSV15-1-156	1	1.25	.63	.88

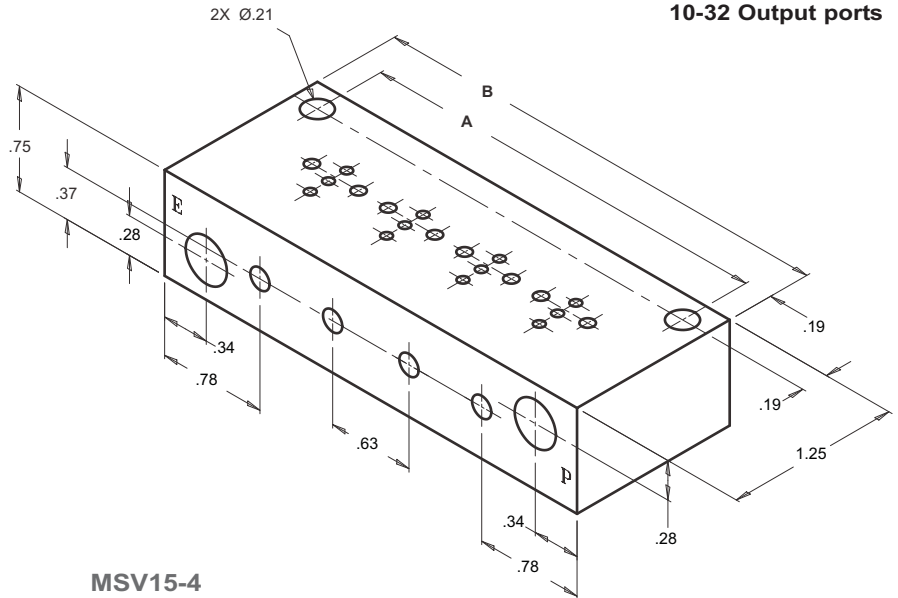


Solenoid single bases and multiple station manifolds feature a clear anodic coating which provides corrosion and wear resistance

We design custom products to meet your application needs

15 mm Manifold

Multiple Station
1/8 NPT Pressure and Exhaust ports
10-32 Output ports

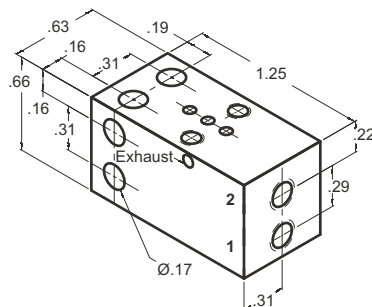


MSV15-4

15 mm Single Bases

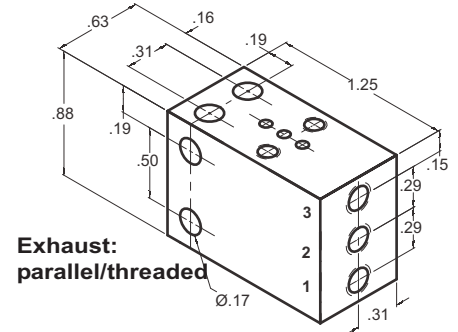
Single Station

MSV15-1 10-32
MSV15-1-M5 M5 ports



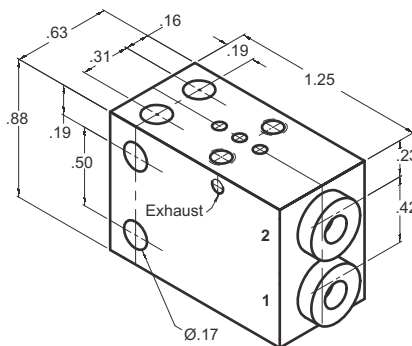
● For use with 1/4 hex fittings

MSV15-1P 10-32 ports
MSV15-1-M5P M5 ports



● For use with 1/4 hex fittings

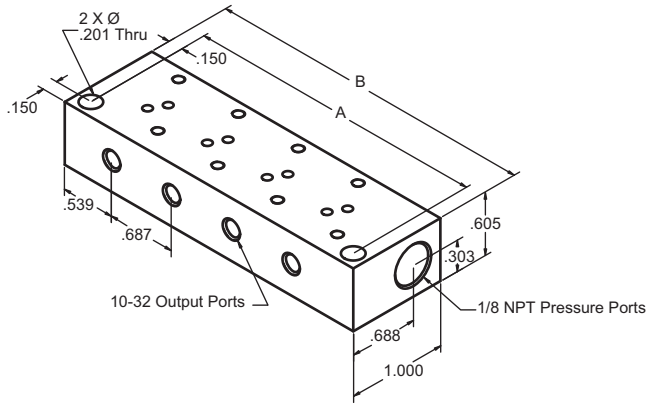
MSV15-1-156
5/32 push-to-connect ports



* Single base mount: Valve hangs over ports (pg. 124 lower photo)

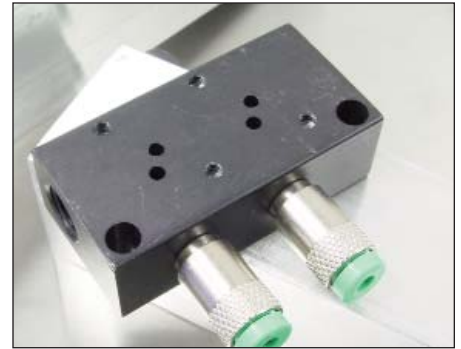
We design custom products to meet your application needs

System 6 Manifold



System 6 Manifolds

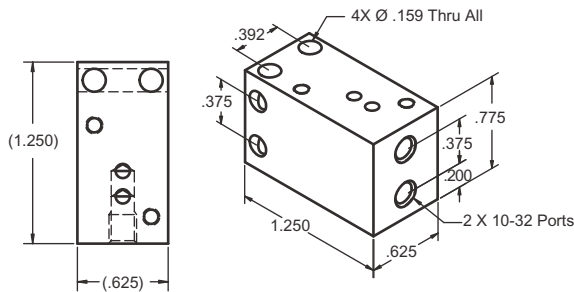
Part Number	Stations	A	B
MSV6-1	1	See Drawing	
MSV6-2	2	1.64	1.94
MSV6-3	3	2.33	2.63
MSV6-4	4	3.01	3.31
MSV6-5	5	3.70	4.00



System 6 parallel ported single station manifold

System 6 Base

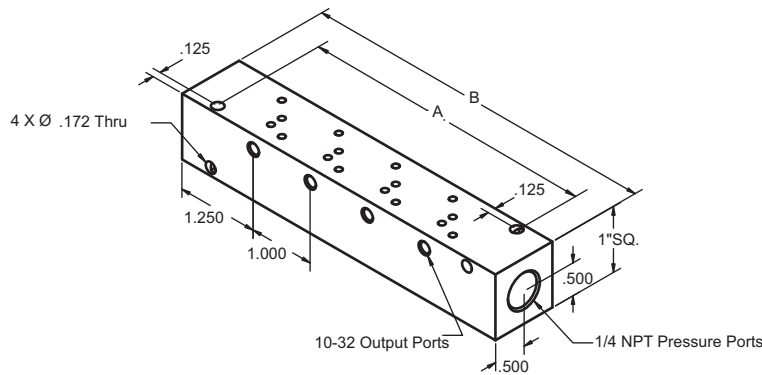
MSV6-1



System 8 Manifolds

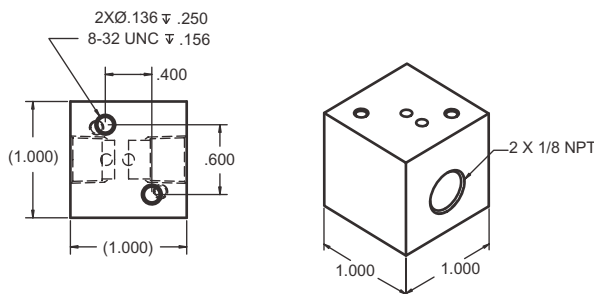
Part Number	Stations	A	B
MSV8-1	1	See Drawing	
MSV8-2	2	2.50	3.50
MSV8-3	3	3.50	4.50
MSV8-4	4	4.50	5.50
MSV8-5	5	5.50	6.50
MSV8-6	6	6.50	7.50
MSV8-7	7	7.50	8.50
MSV8-8	8	8.50	9.50
MSV8-9	9	9.50	10.50
MSV8-10	10	10.50	11.50

System 8 Manifold



System 8 Base

MSV8-1



Ordering Information

- To order standard product refer to Product Information listing.
- Contact factory for custom colors.
- Cover Plates available.
- Solenoid valves sold separately. Refer to Solenoid Valve section for ordering information.

Features

- Controls cylinder extension and retraction
- Allows rapid cylinder return
- 3-Way Normally Closed
- Quick Exhaust & Needle Valve options
- Male pipe thread for direct mount to single acting spring return cylinders



Cylinder Control Bases

When used in conjunction with Pneumadyne's 15 mm Solenoid Valves, these precision machined bases are an ideal choice for applications requiring controlled movement of single-acting spring return cylinders. Configurations featuring a quick exhaust and/or needle valve are available to easily control cylinder extension and retraction speeds. These precision machined valves were designed for use with [Pneumadyne's 15 mm Solenoid Valves \(sold separately\)](#).

Materials

Brass/Electroless Nickel,
Aluminum/Anodize, Stainless
Steel, Buna-N, Urethane

Performance Data

Temperature Range	Operating Pressure		Media		
-20° to 160° F	0 to 125 psi		Air		
Product	Max. Flow (scfm)		C _v	Fill Time sec/in ³ 0-90 psi	Exhaust Time sec/ in ³ 100-10 psi
	50 psi	125 psi			
CCV-F1-1	2.1	4.6	.045	.070	.120
CCV-F1-2	1.8	4.1	.045	.070	.012
CCV-F1-3	2.1	4.6	.045	.070	.012
CCV-F1-4	1.8	4.1	.045	.070	.120
CCV-44-4	1.8	4.1	.045	.070	.120

Cv per ANSI / (NFPA) T3.21.3

Operator: 15 mm 3WNC solenoid valve Ø1.6 mm orifice (sold separately)

Five configurations are available to accommodate cylinder extension and retraction requirements:

CCV-F1-1 features a 10-32 (F) input port and 1/8 NPT output port. Input pressure determines the rate of cylinder extension while the cylinder's spring controls rod retraction.

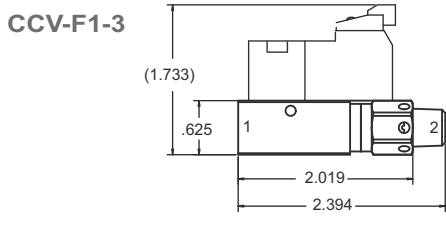
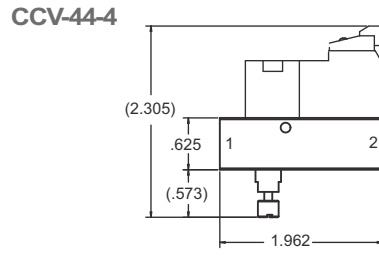
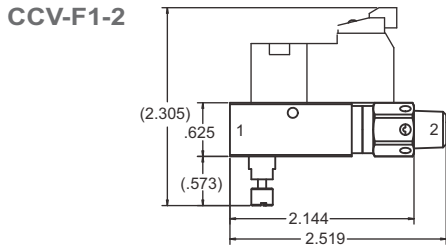
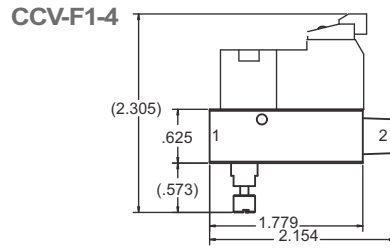
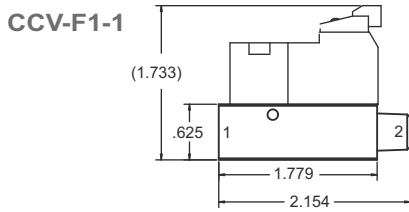
CCV-F1-2 offers the combination of a Needle Valve and Quick Exhaust providing controlled cylinder movement in both directions. A built-in Needle Valve in the input port, 10-32 (F), controls cylinder extension while the 1/8 NPT Quick Exhaust in the output port allows rapid cylinder return.

CCV-F1-3 provides a 10-32 (F) input port and built-in Quick Exhaust with 1/8 NPT output port. Input pressure controls the cylinder extension and the Quick Exhaust allows rapid cylinder return.

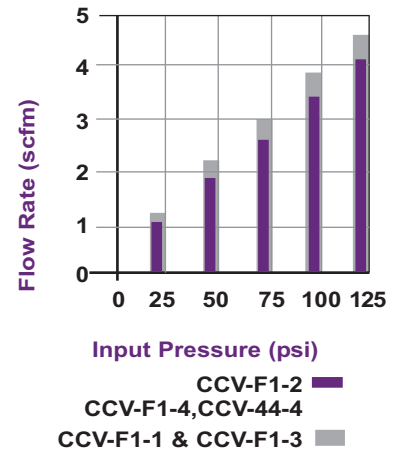
CCV-F1-4 features a built-in Needle Valve in the input port, 10-32 (F), for controlled cylinder extension. The cylinder's spring controls rod retraction.

CCV-44-4 features 1/8 NPT (F) input and output ports. A built-in Needle Valve in the input port provides controlled cylinder extension while the cylinder's spring controls rod retraction.

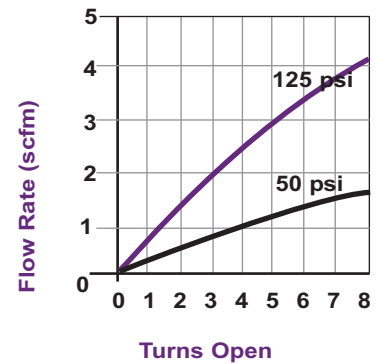
Cylinder Control Valve



Cylinder Control Valve
Max. Flow vs. Input Pressure



Cylinder Control Valve
Turns vs. Pressure for Needle Valves



Function

Applying an electrical signal to the solenoid results in the controlled rod movement determined by the Cylinder Control Base.

Product Information

Part Number	Input	Output
CCV-F1-1	10-32 (F)	1/8 NPT
CCV-F1-2	10-32 (F) Needle Valve	1/8 NPT Quick Exhaust
CCV-F1-3	10-32 (F)	1/8 NPT Quick Exhaust
CCV-F1-4	10-32 (F) Needle Valve	1/8 NPT
CCV-44-4	1/8 NPT (F) Needle Valve	1/8 NPT (F)

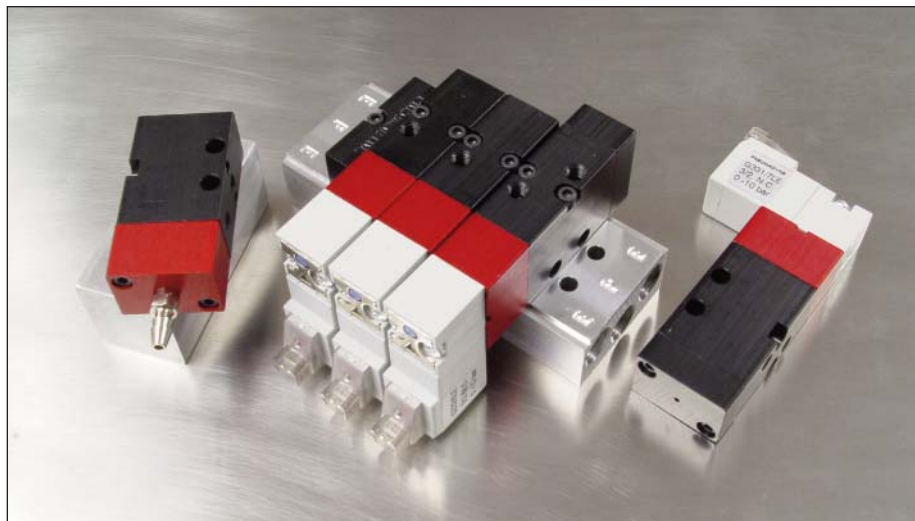
Ordering Information

- To order standard product refer to Product Information listing.
- 15 mm Solenoid Valves sold separately.
- Contact factory for custom porting configurations.

Ideal for controlling the movement of single-acting spring return cylinders

Features

- 3-way normally closed, 3-way normally open & 4-way
- Manual override
- Balanced spool
- Mounting versatility
- Lubricated and Non-lubricated air
- Several connector options
- Low power consumption



Solenoid & Air Pilot Operated 3 & 4-Way Valves "20" Series

The modular design of Pneumadyne's "20" Series provides plumbing convenience and mounting versatility. For installation flexibility, these high flow 3-way and 4-way valves are available with a 10-32 (F) air pilot or a variety of 1 watt 15 mm solenoid operators. Precision machining and an exclusive plating process ensure a long product life and enable the valves to be used with lubricated and non-lubricated air.

Materials

Aluminum/Anodize, Brass/Electroless Nickel, Buna-N, Stainless Steel, Copper, Nylon-Glass Filled

Tested for millions of trouble free cycles

Two Body Styles Provide Versatility

The unique design of the **Universal** valve body allows inline or multiple station manifold mounting. When used with Pneumadyne's Universal Manifolds, the 10-32 (F) cylinder ports are located on the top of the valve body and exhaust flow is directed through 1/8 NPT (F) ports on the manifold. This configuration is ideal for applications requiring the capture and removal of exhaust flow.

The **Manifold** ported valve body must be used with Pneumadyne's "20" Series standard manifolds. This compact valve package features 10-32 (F) output ports located on one side of the manifold contributing to a cleaner, faster installation. Positioning the input and output ports on the manifold permits the valve to be changed without disconnecting system plumbing. Speed control valves can be used in the 10-32 (F) exhaust ports located on top of the valve body, ideal for controlling cylinder speeds from a central location.

Pneumatic Performance Data "20" Series

Temperature Range		20°F to 120°F (-5°C to 50°C)*				
Operating Pressure	C _v	Flow Rate (scfm)		Fill Time sec/ in ³ 0-90 psi	Exhaust Time sec/ in ³ 100-10 psi	Actuating Pressure (min. psi)
		50 psi	125 psi			
0-125 psi (0-8.6 bar)	.15	5.8	12.1	.02	.05	15

Cv per ANSI / (NFPA) T3.21.3, *100% Duty Cycled

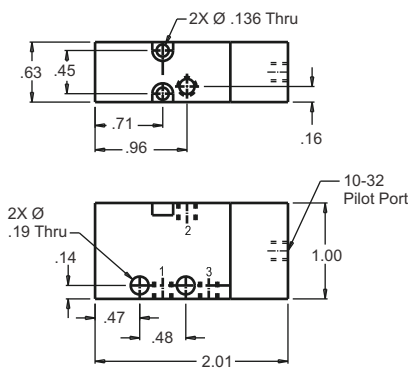
Electrical Performance Data Solenoid Operator

Power	Voltages	Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
1 Watt	12 DC, 24 DC	-5% to 10%	10 ms	12 ms	F 311°F (155°C)
2.8 VA 2.5 VA holding	110 50/60Hz				

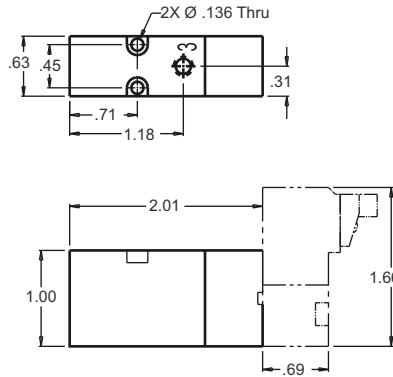
Connector wire gauge: 24 AWG

"20" Series Valves

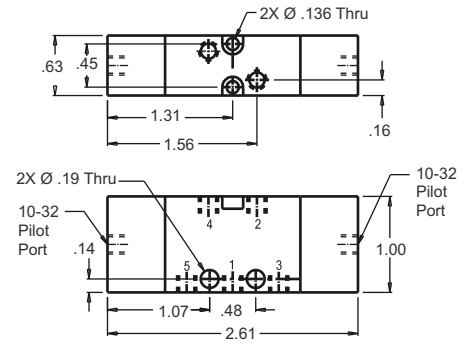
3-Way Single Air Pilot



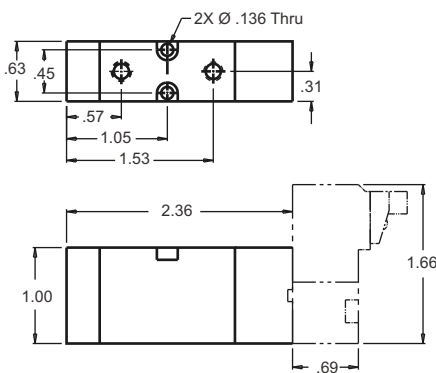
3-Way Single Solenoid



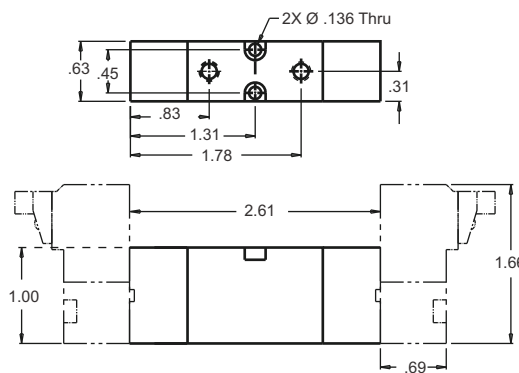
4-Way Double Air Pilot



4-Way Single Solenoid



4-Way Double Solenoid



● Drawings illustrate selected valve body dimensions, additional drawings available. When design makes a dimension critical- contact factory for confirmation. All measurements in inches, unless otherwise specified and are subject to change without notice.

Product Number Diagram
"20" Series

S 2 0 U 3 0 - S S - 1 1 - 0

Body

U=Universal
M=Manifold

Function

30= 3WNC
31= 3WNO
42= 4-Way 5 Port
2 Position

Voltage

12= 12V DC
24= 24V DC
11= 110 AC

Operator

SS= Single Solenoid
DS= Double Solenoid
AP= Single Air Pilot
DP= Double Air Pilot

Connectors

0= Spade
2= Flying Leads
300 mm
3= Line Connector
w/LED
4= 90° Connector
w/LED

Example:

Universal body, 3WNC, Single Solenoid, 110 AC, Spade Connector

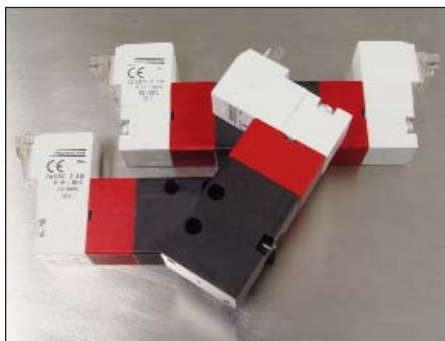
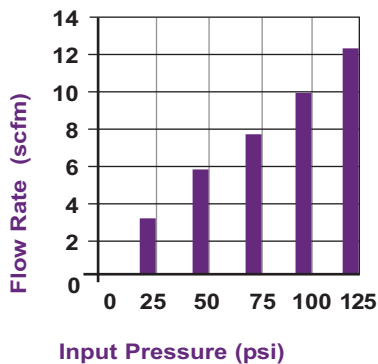
PneuTef™

Lightweight aluminum spools and thin profile seals enhance valve speed and ensure low breakaway. An exclusive PTFE impregnated surface results in a smooth, slippery finish extending product life.



For Lubricated and Non-Lubricated Air

“20” Series Solenoid Flow Chart



Universal style valves are designed for single mounting or multiple station manifold mounting

Product Information “20” Series

Air Pilot Operated Universal Body

Part Number	Function
S20U30-AP	3WNC
S20U31-AP	3WNO
S20U42-AP	4-Way, Air Pilot
S20U42-DP	4-Way, Double Air Pilot

Air Pilot Operated Manifold Body

Part Number	Function
S20M30-AP	3WNC
S20M31-AP	3WNO
S20M42-AP	4-Way, Air Pilot
S20M42-DP	4-Way, Double Air Pilot

Product Information “20” Series

3-Way Normally Closed Universal Body/ Single Solenoid

Part Number	Connection
110V AC / 2.8 VA / Orifice 1.1/1.1 mm	
S20U30-SS-11-0	Spade
S20U30-SS-11-2	Flying Leads
S20U30-SS-11-3	Line Connector
S20U30-SS-11-4	90° Connector
12V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20U30-SS-12-0	Spade
S20U30-SS-12-2	Flying Leads
S20U30-SS-12-3	Line Connector
S20U30-SS-12-4	90° Connector
24V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20U30-SS-24-0	Spade
S20U30-SS-24-2	Flying Leads
S20U30-SS-24-3	Line Connector
S20U30-SS-24-4	90° Connector

3-Way Normally Closed Manifold Body/ Single Solenoid

Part Number	Connection
110V AC / 2.8 VA / Orifice 1.1/1.1 mm	
S20M30-SS-11-0	Spade
S20M30-SS-11-2	Flying Leads
S20M30-SS-11-3	Line Connector
S20M30-SS-11-4	90° Connector
12V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20M30-SS-12-0	Spade
S20M30-SS-12-2	Flying Leads
S20M30-SS-12-3	Line Connector
S20M30-SS-12-4	90° Connector
24V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20M30-SS-24-0	Spade
S20M30-SS-24-2	Flying Leads
S20M30-SS-24-3	Line Connector
S20M30-SS-24-4	90° Connector

3-Way Normally Open Universal Body/ Single Solenoid

Part Number	Connection
110V AC / 2.8 VA / Orifice 1.1/1.1 mm	
S20U31-SS-11-0	Spade
S20U31-SS-11-2	Flying Leads
S20U31-SS-11-3	Line Connector
S20U31-SS-11-4	90° Connector
12V DC / 2.3 Watt / Orifice 1.1/1.1 mm	
S20U31-SS-12-0	Spade
S20U31-SS-12-2	Flying Leads
S20U31-SS-12-3	Line Connector
S20U31-SS-12-4	90° Connector
24V DC / 2.3 Watt / Orifice 1.1/1.1 mm	
S20U31-SS-24-0	Spade
S20U31-SS-24-2	Flying Leads
S20U31-SS-24-3	Line Connector
S20U31-SS-24-4	90° Connector

3-Way Normally Open Manifold Body/ Single Solenoid

Part Number	Connection
110V AC / 2.8 VA / Orifice 1.1/1.1 mm	
S20M31-SS-11-0	Spade
S20M31-SS-11-2	Flying Leads
S20M31-SS-11-3	Line Connector
S20M31-SS-11-4	90° Connector
12V DC / 2.3 Watt / Orifice 1.1/1.1 mm	
S20M31-SS-12-0	Spade
S20M31-SS-12-2	Flying Leads
S20M31-SS-12-3	Line Connector
S20M31-SS-12-4	90° Connector
24V DC / 2.3 Watt / Orifice 1.1/1.1 mm	
S20M31-SS-24-0	Spade
S20M31-SS-24-2	Flying Leads
S20M31-SS-24-3	Line Connector
S20M31-SS-24-4	90° Connector

Choose from 12 & 24 Volt DC & 110 Volt AC to accommodate most applications. Other voltages available on special order- contact factory

Product Information “20” Series

**4-Way 5 Port 2 Position
Universal Body/ Single
Solenoid**

<i>Part Number</i>	<i>Connection</i>
110V AC / 2.8 VA / Orifice 1.1/1.1 mm	
S20U42-SS-11-0	Spade
S20U42-SS-11-2	Flying Leads
S20U42-SS-11-3	Line Connector
S20U42-SS-11-4	90° Connector
12V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20U42-SS-12-0	Spade
S20U42-SS-12-2	Flying Leads
S20U42-SS-12-3	Line Connector
S20U42-SS-12-4	90° Connector
24V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20U42-SS-24-0	Spade
S20U42-SS-24-2	Flying Leads
S20U42-SS-24-3	Line Connector
S20U42-SS-24-4	90° Connector

**4-Way 5 Port 2 Position
Manifold Body/Single Solenoid**

<i>Part Number</i>	<i>Connection</i>
110V AC / 2.8 VA / Orifice 1.1/1.1 mm	
S20M42-SS-11-0	Spade
S20M42-SS-11-2	Flying Leads
S20M42-SS-11-3	Line Connector
S20M42-SS-11-4	90° Connector
12V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20M42-SS-12-0	Spade
S20M42-SS-12-2	Flying Leads
S20M42-SS-12-3	Line Connector
S20M42-SS-12-4	90° Connector
24V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20M42-SS-24-0	Spade
S20M42-SS-24-2	Flying Leads
S20M42-SS-24-3	Line Connector
S20M42-SS-24-4	90° Connector

Accessories

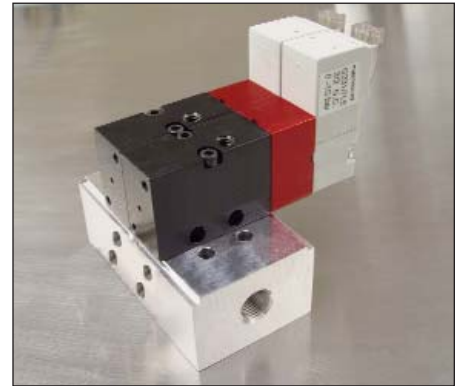
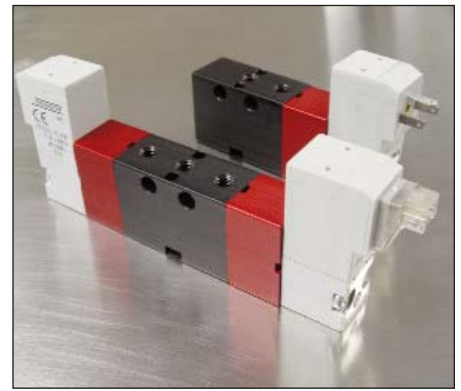
<i>Part Number</i>	
SMMC-300	Plug-in Cable 300 mm
SMMC-500	Plug-in Cable 500 mm
SMMC-1000	Plug-in Cable 1000 mm
SMM-DIN	DIN Connector
SMM-MDIN	Molded DIN Connector

**4-Way 5 Port 2 Position
Universal Body/ Double
Solenoid**

<i>Part Number</i>	<i>Connection</i>
110V AC / 2.8 VA / Orifice 1.1/1.1 mm	
S20U42-DS-11-0	Spade
S20U42-DS-11-2	Flying Leads
S20U42-DS-11-3	Line Connector
S20U42-DS-11-4	90° Connector
12V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20U42-DS-12-0	Spade
S20U42-DS-12-2	Flying Leads
S20U42-DS-12-3	Line Connector
S20U42-DS-12-4	90° Connector
24V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20U42-DS-24-0	Spade
S20U42-DS-24-2	Flying Leads
S20U42-DS-24-3	Line Connector
S20U42-DS-24-4	90° Connector

**4-Way 5 Port 2 Position
Manifold Body/ Double
Solenoid**

<i>Part Number</i>	<i>Connection</i>
110V AC / 2.8 VA / Orifice 1.1/1.1 mm	
S20M42-DS-11-0	Spade
S20M42-DS-11-2	Flying Leads
S20M42-DS-11-3	Line Connector
S20M42-DS-11-4	90° Connector
12V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20M42-DS-12-0	Spade
S20M42-DS-12-2	Flying Leads
S20M42-DS-12-3	Line Connector
S20M42-DS-12-4	90° Connector
24V DC / 1 Watt / Orifice 0.8/1.1 mm	
S20M42-DS-24-0	Spade
S20M42-DS-24-2	Flying Leads
S20M42-DS-24-3	Line Connector
S20M42-DS-24-4	90° Connector



Output ports are located on one side of the standard manifold for a cleaner, faster installation

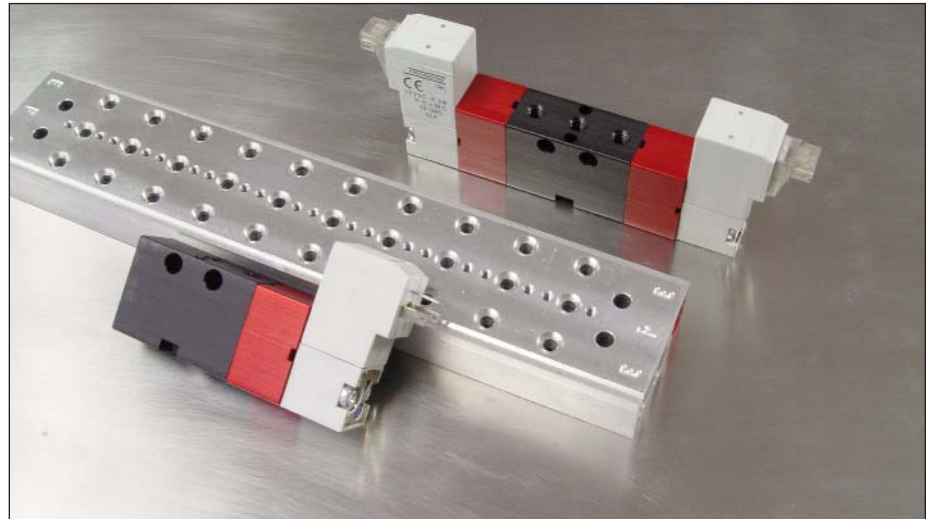
300 mm Plug-in Cable included with Line and 90° Connector

Ordering Information

- To order standard product refer to Product Information listing.
- 300 mm Plug-in cable included with valves featuring the Line or 90° Connector.

Features

- 2 to 10 station
- Clear anodized aluminum for corrosion resistance
- Convenient junction point
- Precision machined
- Lightweight



“20” Series Manifolds

Precision machined aluminum manifolds are a compact, cost effective method of mounting multiple "20" Series valves. The versatile design allows 3 & 4-way valves to be combined on the same manifold.

Choose from two to 10-stations to accommodate application requirements.

Two styles of manifolds are available to compliment the "20" Series Universal and Manifold valve bodies. Be sure to select the correct product grouping when ordering valves and manifolds.

All manifolds are anodized for corrosion resistance. Cover plates are available to conceal unused stations and block the valve supply port.

Performance Data

Temperature Range
-10°F to 200°F / -23°C to 93°C

Materials

Aluminum, Clear Anodize

Port Designation

	Universal	Standard
Pressure	1/8 NPT (F)	1/8 NPT (F)
Output	10-32 (F) top of valve body	10-32 (F)
Exhaust	1/8 NPT (F)	10-32 (F) top of valve body

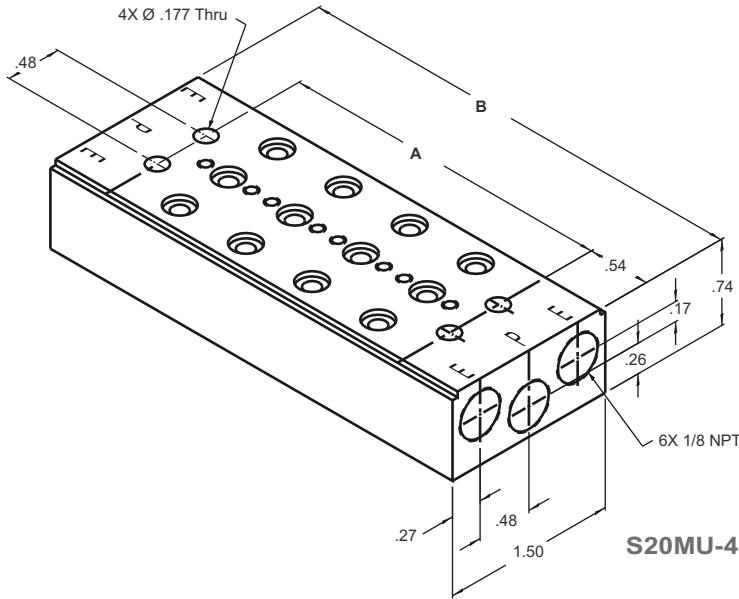
We design custom products to meet your application needs

Ordering Information

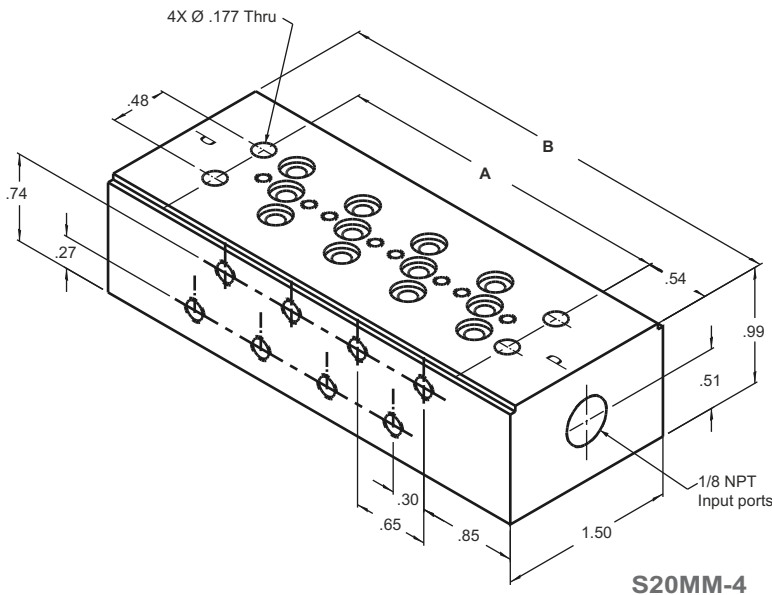
- To order standard product refer to Product Information listing.
- Contact factory for custom colors.
- Cover Plates available to conceal unused stations.
- O-rings and mounting screws included with manifolds.

“20” Series Manifold

Universal
1/8 NPT (F)
Pressure and Exhaust ports



Standard
1/8 NPT (F) Pressure port
10-32 Output ports



● All measurements in inches, unless otherwise specified. When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Product Information

“20” Series Manifolds

Universal

(for Universal Valve Body)

Part Number	Stations	A	B
S20MU-2	2	1.57	2.65
S20MU-4	4	2.87	3.95
S20MU-6	6	4.17	5.25
S20MU-8	8	5.47	6.55
S20MU-10	10	6.77	7.85

Standard

(for Manifold Valve Body)

Part Number	Stations	A	B
S20MM-2	2	1.57	2.65
S20MM-4	4	2.87	3.95
S20MM-6	6	4.17	5.25
S20MM-8	8	5.47	6.55
S20MM-10	10	6.77	7.85

Accessory

Part Number	Description
S20M-CP	Cover plate

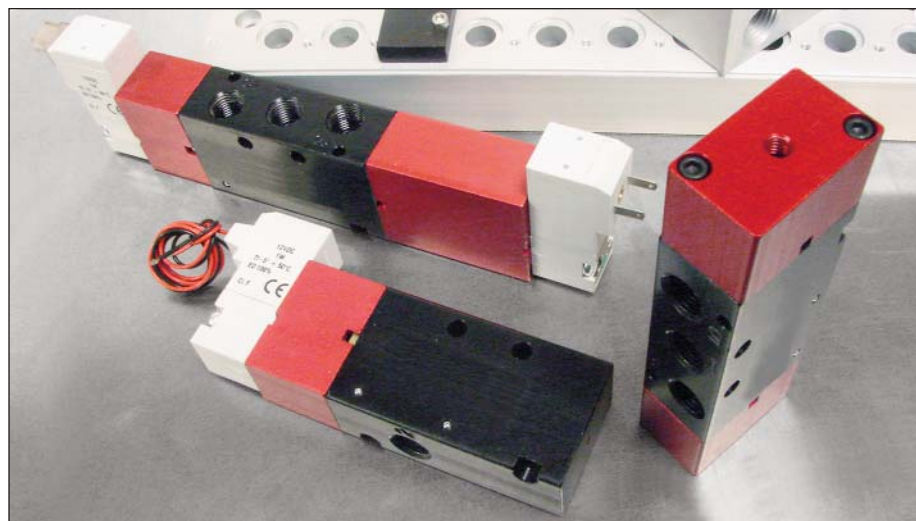


Cylinder speeds are easily controlled by using speed control valves in the exhaust ports on top of the valve body

“20” Series manifolds are designed for use with specific valves. Be sure to select the correct product grouping when ordering valves & manifolds

Features

- 3-Position 4-way valves feature closed and exhaust centers
- High flow rate
- 1/8 NPT (F) ports
- Balanced spool
- Low power consumption
- Lubricated and non-lubricated air



Solenoid & Air Pilot Operated 3 & 4-Way Valves "22" Series

Pneumadyne's new "22" Series offers high flow 3-way and 4-way configurations with 1/8 NPT (F) ports. In addition to the standard 2-Position 4-way, the "22" Series also features 3-Position 4-way valves with Closed or Exhaust centers to satisfy system requirements.

For installation flexibility, single or double air pilot and solenoid operators are available to shift the valve. Pneumadyne's 1 Watt, 15 mm solenoid valves present a variety of voltage and connector options.

Unique to the "22" Series, our Latching Solenoid can replace two solenoid valves in a 4-way, 2-Position "double solenoid" configuration; an energy and space saving option.

Materials

Aluminum/Anodize, Brass/Electroless Nickel, Buna-N, Stainless Steel, Copper, Nylon - Glass Filled

The design of the Universal valve body allows inline or multiple station manifold mounting. When used with Pneumadyne's "22" Series Manifolds, the 1/8 NPT (F) cylinder ports are located on the top of the valve body and exhaust flow is directed through 1/8 NPT (F) ports on the manifold. This configuration is ideal for applications requiring the capture and removal of exhaust flow.

Precision machining and our exclusive PneuTef™ plating process ensure a long product life and enable the valves to be used with lubricated and non-lubricated air.

Pneumatic Performance Data "22 Series"

Temperature Range	20°F to 120°F (-5°C to 50°C)*
Operating Pressure	10 to 125 psi

Function	C _v	Flow Rate (scfm)		Fill Time sec/ in ³ 0-90 psi	Exhaust Time sec/ in ³ 100-10 psi	Actuating Pressure (psi)
		50 psi	125 psi			
3-Way Normally Closed	0.43	17	40	0.007	0.018	10
4-Way 5 Port 2 Position	0.43	17	40	0.008	0.018	10
4-Way 5 Port 3 Position	0.42	16	35	0.008	0.015	10

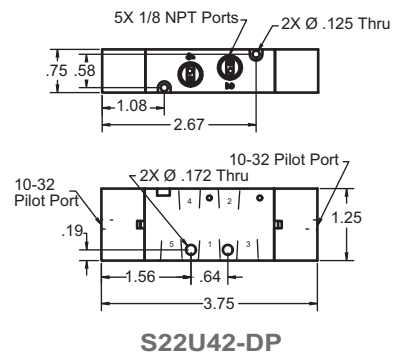
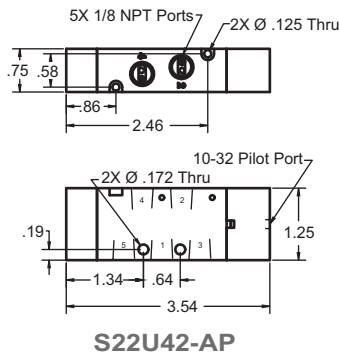
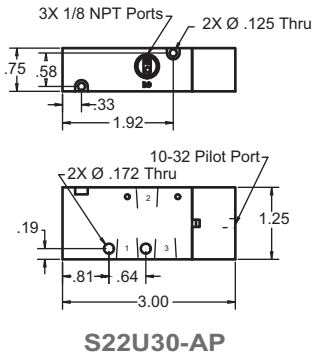
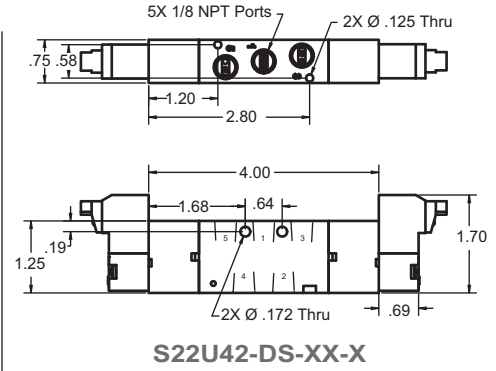
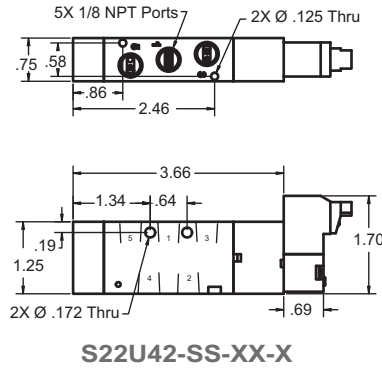
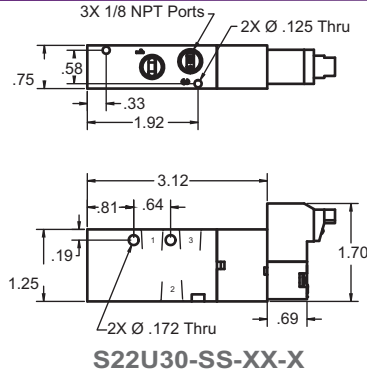
Cv per ANSI / (NFPA) T3.21.3, *100% Duty Cycled

Electrical Performance Data Solenoid Operator

Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
-5% to 10%	10 ms	12 ms	F 311°F (155°C)

Connector wire gauge: 24 AWG

"22" Series Valves



Product Number Diagram
"22" Series

S 2 2 U 4 C - D S - 1 2 - 0

Body
U=Universal

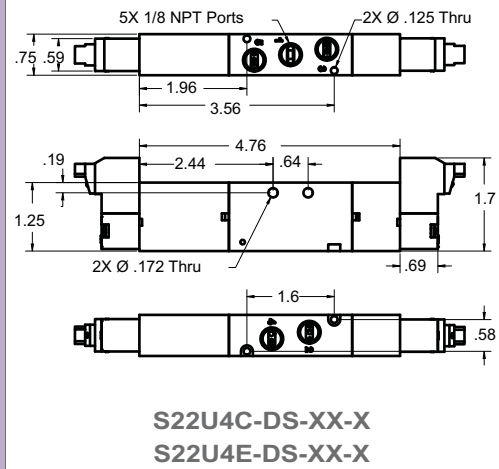
Function
30= 3-Way Normally Closed
42= 4-Way 2 Position
4C= 4-Way Closed Center
4E= 4-Way Exhaust Center

Voltage
12= 12V DC
24= 24V DC
11=110 AC

Operator
SS= Single Solenoid
DS= Double Solenoid
AP= Single Air Pilot
DP= Double Air Pilot
LS= Latching Solenoid

Connectors
0= Spade
2= Flying Leads
300 mm
3= Line Connector
w/LED
4= 90° Connector
w/LED

Example:
Universal, 4-Way Closed Center, Double Solenoid, 12V DC, Spade



● **Closed Center Valves Caution:**
Vent working lines before disconnecting

Product Information "22" Series

3-Way Normally Closed Single Solenoid

Part Number	Connection
Air Pilot	
S22U30-AP	Air Pilot
110 AC 2.8 VA/ Orifice 1.1/1.1 mm	
S22U30-SS-11-0	Spade
S22U30-SS-11-2	Flying Leads
S22U30-SS-11-3	Line Connector
S22U30-SS-11-4	90° Connector
12 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U30-SS-12-0	Spade
S22U30-SS-12-2	Flying Leads
S22U30-SS-12-3	Line Connector
S22U30-SS-12-4	90° Connector
24 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U30-SS-24-0	Spade
S22U30-SS-24-2	Flying Leads
S22U30-SS-24-3	Line Connector
S22U30-SS-24-4	90° Connector

4-Way 5 Port 2 Position Double Solenoid

Part Number	Connection
Air Pilot	
S22U42-AP	Air Pilot
S22U42-DP	Air Pilot
110 AC 2.8 VA/ Orifice 1.1/1.1 mm	
S22U42-DS-11-0	Spade
S22U42-DS-11-2	Flying Leads
S22U42-DS-11-3	Line Connector
S22U42-DS-11-4	90° Connector
12 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U42-DS-12-0	Spade
S22U42-DS-12-2	Flying Leads
S22U42-DS-12-3	Line Connector
S22U42-DS-12-4	90° Connector
24 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U42-DS-24-0	Spade
S22U42-DS-24-2	Flying Leads
S22U42-DS-24-3	Line Connector
S22U42-DS-24-4	90° Connector

Our exclusive seal material accommodates low temperature applications. Contact factory for additional information

4-Way 5 Port 2 Position Single Solenoid

Part Number	Connection
110 AC 2.8 VA/ Orifice 1.1/1.1 mm	
S22U42-SS-11-0	Spade
S22U42-SS-11-2	Flying Leads
S22U42-SS-11-3	Line Connector
S22U42-SS-11-4	90° Connector
12 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U42-SS-12-0	Spade
S22U42-SS-12-2	Flying Leads
S22U42-SS-12-3	Line Connector
S22U42-SS-12-4	90° Connector
24 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U42-SS-24-0	Spade
S22U42-SS-24-2	Flying Leads
S22U42-SS-24-3	Line Connector
S22U42-SS-24-4	90° Connector

4-Way 5 Port 2 Position Latching Solenoid Single Solenoid

Part Number	Connection
12 DC 3 Watt/ Orifice 1.1/1.1 mm	
S22U42-LS-12-2	Flying Leads
24 DC 3 Watt/ Orifice 1.1/1.1 mm	
S22U42-LS-24-2	Flying Leads

4-Way 5 Port 3 Position Double Solenoid - Closed Center

Part Number	Connection
110 AC 2.8 VA/ Orifice 1.1/1.1 mm	
S22U4C-DS-11-0	Spade
S22U4C-DS-11-2	Flying Leads
S22U4C-DS-11-3	Line Connector
S22U4C-DS-11-4	90° Connector
12 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U4C-DS-12-0	Spade
S22U4C-DS-12-2	Flying Leads
S22U4C-DS-12-3	Line Connector
S22U4C-DS-12-4	90° Connector
24 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U4C-DS-24-0	Spade
S22U4C-DS-24-2	Flying Leads
S22U4C-DS-24-3	Line Connector
S22U4C-DS-24-4	90° Connector

4-Way 5 Port 3 Position Double Solenoid - Exhaust Center

Part Number	Connection
110 AC 2.8 VA/ Orifice 1.1/1.1 mm	
S22U4E-DS-11-0	Spade
S22U4E-DS-11-2	Flying Leads
S22U4E-DS-11-3	Line Connector
S22U4E-DS-11-4	90° Connector
12 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U4E-DS-12-0	Spade
S22U4E-DS-12-2	Flying Leads
S22U4E-DS-12-3	Line Connector
S22U4E-DS-12-4	90° Connector
24 DC 1 Watt/ Orifice 0.8/1.1 mm	
S22U4E-DS-24-0	Spade
S22U4E-DS-24-2	Flying Leads
S22U4E-DS-24-3	Line Connector
S22U4E-DS-24-4	90° Connector

Closed Center: All ports are blocked. Caution: vent working lines before disconnection

Exhaust Center: Input ports are blocked, cylinder ports are open to exhaust

PneuTef™

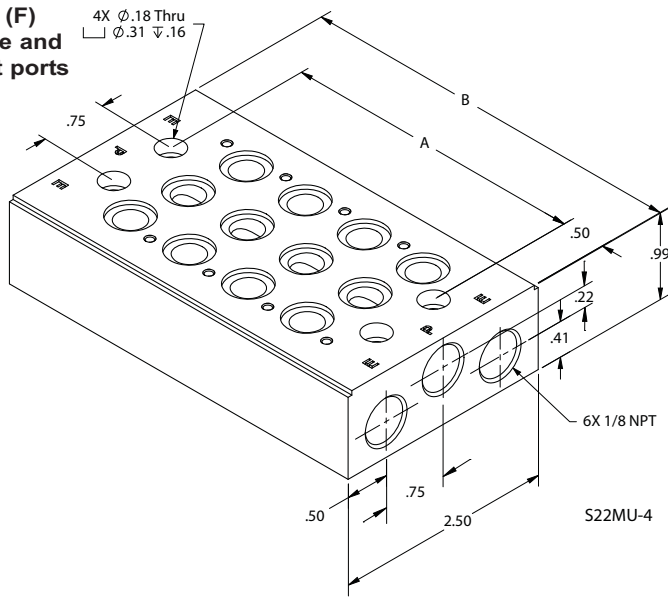
Lightweight aluminum spools and thin profile seals enhance valve speed and ensure low breakaway. An exclusive PTFE impregnated surface results in a smooth, slippery finish extending product life.



**Can be used with
Lubricated and
Non-Lubricated Air**

"22" Series Manifold

Universal
1/8 NPT (F)
Pressure and
Exhaust ports



Product Information

"22" Series Manifolds

Part Number	Stations	A	B
S22MU-2	2	1.91	2.91
S22MU-4	4	3.46	4.46
S22MU-6	6	5.01	6.01
S22MU-8	8	6.56	7.56
S22MU-10	10	8.11	9.11

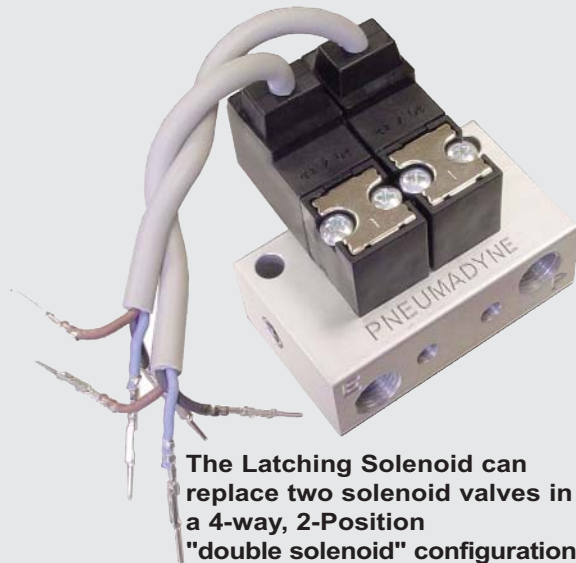
measurements in inches

"22" Series Accessories

S22M-CP	Cover Plate
SMMC-300	Plug-in Cable 300 mm
SMMC-500	Plug-in Cable 500 mm
SMMC-1000	Plug-in Cable 1000 mm
SMM-DIN	DIN Connector
SMM-MDIN	Molded DIN Cable 3 M

Unique to
Pneumadyne's "22"
Series
Latching Solenoid
Operator

- Single electrical connection
- Space saving
- 3-wire system-relay not required
- Momentary pulse to energize and de-energize
- Power savings- do not need to maintain electrical connection
- Ideal for applications where power is limited or coil heating is unwanted



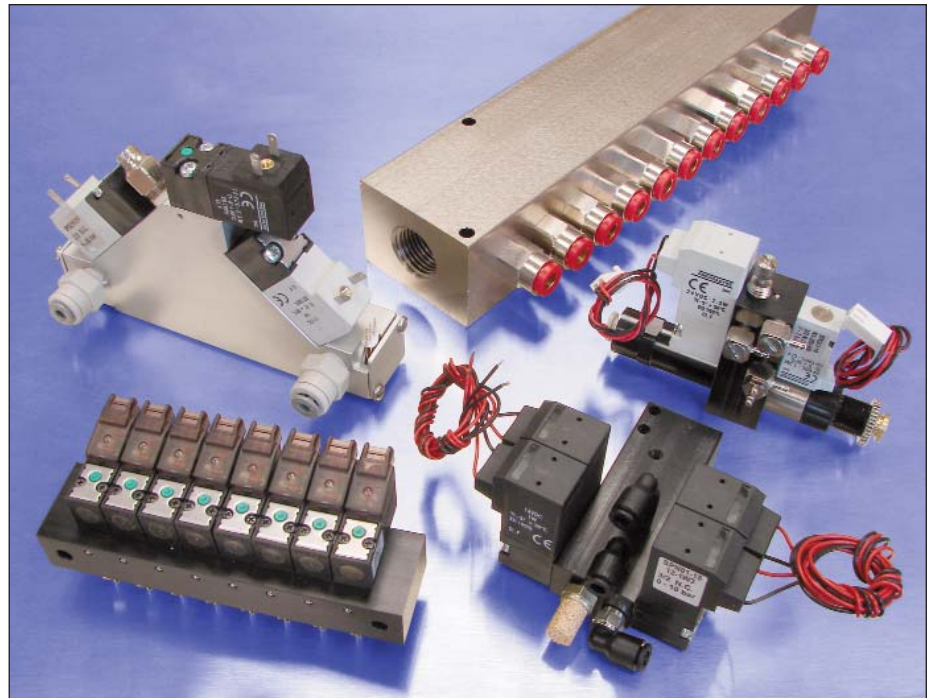
Cover Plate- (S22M-CP Sold Separately) includes mounting screws.

Ordering Information

- To order standard product refer to Product Information listing.
- Cover Plates available for use with manifolds.
- Mounting screws provided.
- 300 mm Plug-in cable included with valves featuring the Line or 90° Connector.

Custom Products

Rely on Pneumadyne's fluid power expertise, design experience and manufacturing capabilities when developing fluid handling applications.



Providing solutions that meet our customer's defined performance requirements has been a priority since Pneumadyne's inception, setting us apart in the miniature pneumatics industry. Our experienced engineers welcome the opportunity to assist in the design and manufacture of pneumatic control systems and custom directional control valves, fittings or manifolds.

Contact Pneumadyne the next time your application requires a custom component.

Dental Industry

- Dental abrasion application
- Pre-set precision pressure regulator
- Two solenoid valves
- Fittings with precision orifices
- Needle valve
- System is 100% pre-set for flow & pressure, ready for installation

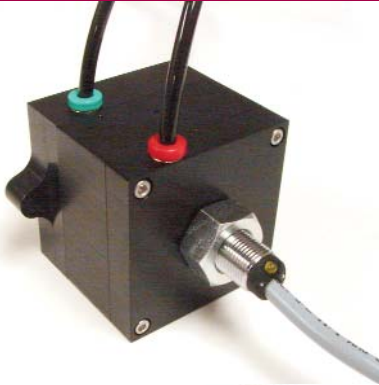


Energy Industry

- Gas pump control application
- PneuTef™ plating for use with raw gas
- Adjustable speed control
- Configuration allows for overstroke of the diaphragm pump
- Push-to-connect fittings to speed tubing installation
- Large internal passages for fast action



Medical Industry



- Fluid infusion application
- Double Acting Rolling Diaphragm Cylinder
- Features position feedback
- Functions at 1.5 psi



- Operatory application
- Integrated manifold block contains three separate circuits
- Two pre-set regulators: one at 7.5 psi, the other at 2 psi
- Four Pressure Transducers
- Five Oxygen cleaned solenoid valves
- Two Relief valves

Printing Industry



- Ink dispensing application
- Valve block features an integrated vacuum signal, primer pump, shut-off valve, screen, orifice & check valve
- Lightweight aluminum body
- Pneu-Edge® fittings ensure permanent tubing installation
- Quick coupling for ink bag connection & disconnection

Pneumadyne is recognized around the world for designing and manufacturing high quality products for use in a wide variety of industries. Our products touch lives in many ways:

Abrasive Dental Equipment

Textile Machines

Assembly Fixtures

Testing Devices

CPR Devices

Medical Gas Delivery

Process Controls

Blood Pressure Testing

Computer Chip Manufacturing & Testing

Fuel Management Systems

Water Purification Systems

Off Road & Recreational Equipment

Farm & Livestock Management & Control

Temperature & Ventilating Devices

Food Processing Equipment

Labeling Devices

Liquid & Glue Dispensing

Custom Design

Our experienced engineers are always available to assist in the design and development of custom products. We take pride in our ability to partner with customers and develop successful solutions for custom applications. Dedication to quality and customer satisfaction are always paramount at Pneumadyne.

Value Added Service & Technology (V.A.S.T.)

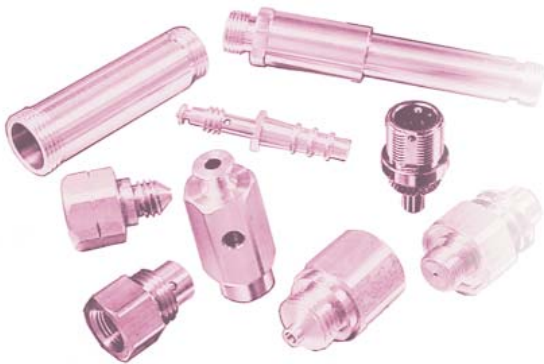
Our knowledge and expertise in fluid power and precision machining are an advantage when designing complimentary components. Our engineers welcome the opportunity to assist with the component requirements of value added assemblies. Contact Pneumadyne the next time you are sourcing machining support.



Food & Beverage Industry



- Wine preservation application
- Computerized control system monitors system performance
- 10-gallon vacuum tank
- Quiet vacuum pump
- Reduced overall size



24-hour "lights out" machining, increases our ability to provide custom products and fulfill low volume orders, setting us apart in the miniature pneumatics industry

Material Handling Industry



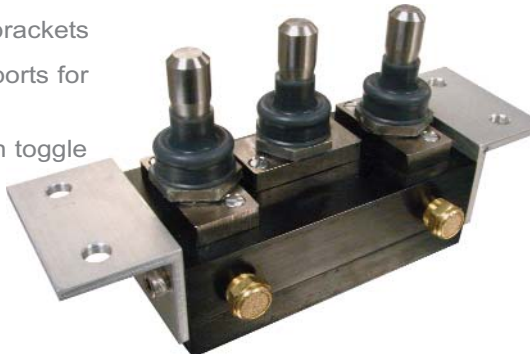
- Pneumatic lift application
- Manifold assembly features a common input port which feeds three valve blocks
- Each valve block contains two solenoid valves, two relief valves & two pilot-operated check valves



- Liquid pump application
- Valve block features two of our Pilot Operated Cartridge Valves
- Shut-off blocks are included to isolate the circuitry
- A single input port supplies pressure to all three circuits
- Inline pressure gauges provide constant input and output readings
- A surface mount Regulator is integrated in the valve block & controls

Automotive Industry

- Trailer shock control application
- Rugged design with mounting brackets
- One input port and two output ports for two handed control
- Protective silicone boot on each toggle
- Heavy duty momentary toggles



- Air suspension application
- 300 psi solenoid valves
- Epoxy sealed connectors for moisture resistance
- Compact & rugged designs
- Built-in check valves to hold system pressure



...more of the ways in which our high quality products touch lives:

Sporting Goods

Therapy Equipment

Beverage Dispensing

High Speed Conveyors

Automotive Equipment

Animatronics

Energy Production Devices

Exercise Equipment

Medical Instruments

Insect Control

Water Sensing Devices

Thermal Analysis Components

DNA Archiving Equipment

Chemical Control Systems

Gas Sampling Devices

Emissions Testing Systems

Optical Grinding Equipment

Features

- 36 possible Air Jet combinations
- Several component options
- Manifold for multiple use applications



Air Jets

What is an Air Jet?

When air is directed through a tube that has a length at least three (3) times its ID a laminar air flow is created. This narrow stream of air is directable and its length is controllable by the input pressure. The application of this concept to our specially designed product, Air Jet, has proven to be very unique.

The Air Jet System

The modular design of the Pneumadyne Air Jet system is one of the features that makes it adaptable to an unlimited number of applications. Air Jets consist of some or all of these separate components:

- Nozzle (12 options)
- Nut
- Base (3 options)
- Holder
- Manifold
- Needle Valve

The introduction of a **brass manifold** to the Air Jet assembly provides an innovative method which allows the use of up to six (6) Air Jets. In this situation a needle valve is threaded into the manifold

and tubing connects to the Air Jet base, via a barb fitting. The advantage of the manifold is the ability to control remote Air Jets at one location (to plug unused ports use an SPG-10 plug). In a typical application the **needle valve** is threaded into the base and the air pressure is controlled at that location.

Applications

Imaginations at work. Though simple in operation, the Air Jet has some very creative applications. The Air Jet was originally developed to enhance the productivity of vibratory feeder bowls. Since that first application, Air Jets have been used in a broad range of systems such as:

Cooling Applications- a jet of air is directed at a drill bit to reduce heat from friction.

Moving Applications- a jet of air used as a static breaker to keep dust off optical lens or to move parts off a production line.

Coolant/ Lubricant Applications- lubrication via Air Jets onto the gears in overhead conveyors.

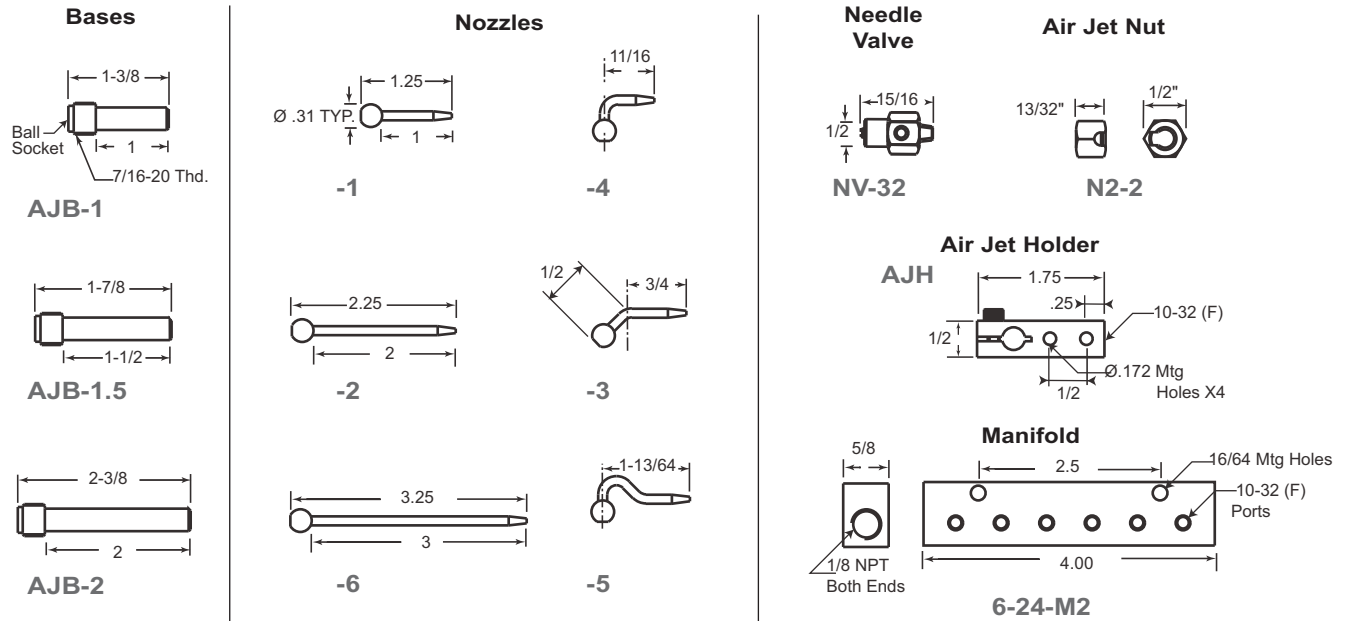
Performance Data

Product	Temperature Range	Operating Pressure	Orifice Size	Cv	Flow Rate (scfm)	
					50 psi	125 psi
HAN	-20° to 160° F 28° to 71° C	0 to 125 psi	1/16	.10	3.2	6.5
AN			1/32	.02	.72	1.5

Materials

Brass, Electroless Nickel Plating, Cold Rolled Steel, Aluminum, Black Anodizing

Air Jet



Ordering Information

- Use Product Information listing to select air jet components.
- All parts are sold separately.
- Air Jet Kits available.

The Air Jet Kit

Pneumadyne offers Air Jet Kits for either 1/16" or 1/32" orifice nozzles. The kit includes:

- (12) Nozzles (2 ea. style nozzle)
- (2) 10-32 (M) Needle Valves
- (9) Bases (3 of ea. size)
- (9) Brass Nuts
- (3) Air Jet Holders
- (1) Carrying Case

Part Number	Description
AJK-AN	Air Jet Kit, 1/32 ID nozzles
AJK-HAN	Air Jet Kit, 1/16 ID nozzles

- The brass manifold is available to enhance the Air Jet System but is not included with the Air Jet Kit.

Product Information

Part Number	Description
AJB-1	1" Base
AJB-1.5	1.5" Base
AJB-2	2" Base
AJH	Air Jet Holder
AN-1	Nozzle, 1/32 ID x 1" Straight
AN-2	Nozzle, 1/32 ID x 2" Straight
AN-3	Nozzle, 1/32 ID x 1" 45°
AN-4	Nozzle, 1/32 ID x 1" 90°
AN-5	Nozzle, 1/32 ID x 1" Compound
AN-6	Nozzle, 1/32 ID x 3" Straight
HAN-1	Nozzle, 1/16 ID x 1" Straight
HAN-2	Nozzle, 1/16 ID x 2" Straight
HAN-3	Nozzle, 1/16 ID x 1" 45°
HAN-4	Nozzle, 1/16 ID x 1" 90°
HAN-5	Nozzle, 1/16 ID x 1" Compound
HAN-6	Nozzle, 1/16 ID x 3" Straight
6-24-M2	Manifold
N2-2	Assembly Nut (Air Jets)
NV-32	Needle Valve

All dimensions and specifications are subject to change without notice

Features

- Twelve barb sizes
- Ten thread sizes
- Captured O-ring design
- Smaller shank
- Smoother tubing approach angle
- Solderless joint technology
- Larger thru-hole
- Consistently sharp barbs



Pneu-Edge Features

Twelve barb sizes are available to accommodate a variety of tubing requirements.

Ten thread sizes are available ranging from 10-32, 1/4-28 and 1/16 NPT to 3/8 NPT, including metric M3, M5 and M6.

Pneumadyne's **captured o-ring design** provides a superior seal ensuring a leak resistant fitting.

A **smaller shank** behind the barb allows Polyurethane tubing to relax, providing a tighter grip and seal.

A **smoother tubing approach angle** eases tubing installation.

Solderless joint technology eliminates solder voids, potential leaks and heat discoloration or distortion of materials. Components are threaded together and sealed with NSF approved Loctite® sealant to eliminate pull-out potential and ensure straight barb alignment.

Larger thru-hole for a maximized flow path.

Swiss precision machining ensures consistently **sharp barbs** for more permanent tubing installation.

Pneu-Edge® Fittings

Pneu-Edge fittings feature a consistently sharp, single-barb design which provides a tighter grip and seal than standard multiple barbs. These precision machined fittings ensure permanent polyurethane tubing installation without the need for clamps. Straight connectors, tees, elbows, crosses and couplings are available in a wide variety of sizes and materials to accommodate numerous fluid handling circuits.

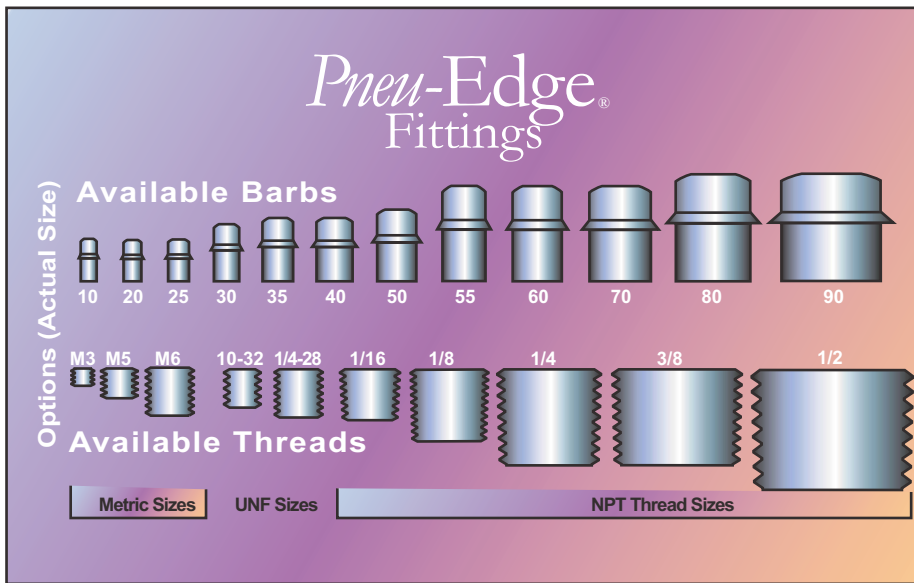
Materials

Brass/ Electroless Nickel, Buna-N O-rings

Pneumadyne's Stainless Steel Pneu-Edge® fittings are suitable for use in industries such as:

- **Food & Beverage**
- **Medical & Dental**
- **Semi-Conductor**
- **Pharmaceutical**
- **Agriculture**
- **Chemical processing**





Pneu-Edge barbs are assigned a two digit code as defined on the Product Number Diagram (lower left). There are twelve barb sizes for use with Polyurethane tubing ranging from 1/16 ID to 1/2 ID. Ten thread sizes include metric, UNF, and NPT.

Pneu-Edge fittings ensure permanent polyurethane tubing installation without the need for clamps. However, we recommend the use of clamps in applications over 80 psi which also involve heat or vibration.

Product Number Diagram

Pneu-Edge® Fittings

E R C 3 0 - 1 0 - 3 0 3

Product Line
E= Pneu-Edge

Fitting Configuration
Threaded

A= Adjustable Tee
A-LB= Adjustable EL Barb
B= Male Connector
BK= Bulkhead
FB= Female Connector
FLB= EL Female Thread
FT= Female Tee
LB= Elbow
RB= Reducer Bushing
T= Tee 1/4-28 thru 3/8
TB= 10-32 Tee

Barb-to-Barb

C= Coupling
L= Elbow
T= Tee
RC= Reducing Coupling
RT= Reducing Tee
RX= Reducing Cross
X= Cross

Barb Size
refer to "Connector Options" below for code

Barb Size Code	Tube ID
10=	1/16
20=	5/64
25=	3/32
30=	1/8
35=	5/32
40=	.170
50=	3/16
55=	7/32
60=	1/4
70=	5/16
80=	3/8

Suffix

250= 1/4" Hex
303= Stainless Steel
S= Short

Connector Options	Thread Size
"no code"	10-32 UNF
4-28	1/4-28 UNF
1/16	1/16 NPT
1/8	1/8 NPT
1/4	1/4 NPT
3/8	3/8 NPT
1/2	1/2 NPT
M3	M3 x 0.5
M5	M5 x 0.8
M6	M6 x 1.0

Please use Part Number Listing to verify part number- not all configurations are possible

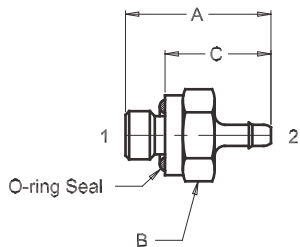
Note:
Please refer to drawings for location and size of barbs on reducer fittings-

Ordering Information

- To order standard Electroless Nickel Brass plated product use part number listing.
- For 303 Stainless Steel add a -303 suffix to the part number- *lead times and minimum quantities may apply.*
- Optional O-rings available- contact factory.
- Standard package quantities:
 - 25 pcs per bag
 - 100 pcs per box

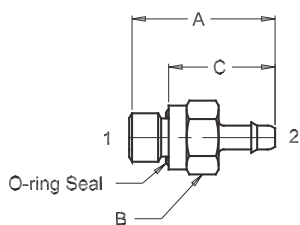
- Flow Rates for Pneu-Edge Fittings can be found on page 188-189

Straight 10-32



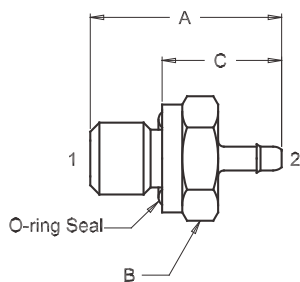
Part Number	A	B Hex	C	1	2 Tubing ID
EB10	0.571	5/16	0.416	10-32 (M)	1/16
EB20	0.571	5/16	0.416	10-32 (M)	5/64
EB25	0.574	5/16	0.419	10-32 (M)	3/32
EB30	0.665	5/16	0.510	10-32 (M)	1/8
EB35	0.689	5/16	0.534	10-32 (M)	5/32
EB40	0.689	5/16	0.534	10-32 (M)	.170
EB50	0.723	5/16	0.568	10-32 (M)	3/16
EB60	0.846	5/16	0.691	10-32 (M)	1/4

Straight 1/4 Hex



Part Number	A	B Hex	C	1	2 Tubing ID
EB10-250	0.571	1/4	0.416	10-32 (M)	1/16
EB20-250	0.571	1/4	0.416	10-32 (M)	5/64
EB25-250	0.574	1/4	0.419	10-32 (M)	3/32
EB30-250	0.665	1/4	0.510	10-32 (M)	1/8
EB40-250	0.689	1/4	0.534	10-32 (M)	.170

Straight 1/4-28



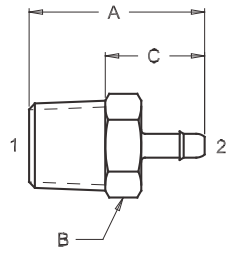
Part Number	A	B Hex	C	1	2 Tubing ID
EB10-4-28	0.666	3/8	0.416	1/4-28 (M)	1/16
EB20-4-28	0.666	3/8	0.416	1/4-28 (M)	5/64
EB25-4-28	0.669	3/8	0.419	1/4-28 (M)	3/32
EB30-4-28	0.760	3/8	0.510	1/4-28 (M)	1/8
EB40-4-28	0.784	3/8	0.534	1/4-28 (M)	.170
EB50-4-28	0.818	3/8	0.568	1/4-28 (M)	3/16
EB60-4-28	0.941	3/8	0.691	1/4-28 (M)	1/4

When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

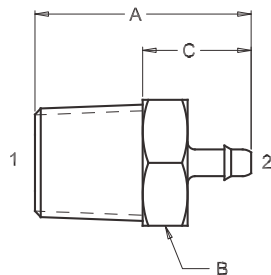


All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

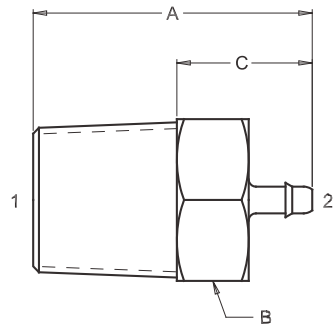
Part Number	A	B Hex	C	1	2 Tubing ID	Straight 1/16 NPT
EB10-1/16	0.611	5/16	0.346	1/16 (M)	1/16	
EB20-1/16	0.611	5/16	0.346	1/16 (M)	5/64	
EB25-1/16	0.614	5/16	0.349	1/16 (M)	3/32	
EB30-1/16	0.705	5/16	0.440	1/16 (M)	1/8	
EB40-1/16	0.729	5/16	0.464	1/16 (M)	.170	
EB50-1/16	0.763	5/16	0.498	1/16 (M)	3/16	
EB60-1/16	0.886	5/16	0.621	1/16 (M)	1/4	



Part Number	A	B Hex	C	1	2 Tubing ID	Straight 1/8 NPT
EB10-1/8	0.752	7/16	0.377	1/8 (M)	1/16	
EB20-1/8	0.752	7/16	0.377	1/8 (M)	5/64	
EB25-1/8	0.755	7/16	0.380	1/8 (M)	3/32	
EB30-1/8	0.846	7/16	0.471	1/8 (M)	1/8	
EB40-1/8	0.870	7/16	0.495	1/8 (M)	.170	
EB50-1/8	0.904	7/16	0.529	1/8 (M)	3/16	
EB60-1/8	1.027	7/16	0.652	1/8 (M)	1/4	
EB70-1/8	1.027	7/16	0.652	1/8 (M)	5/16	
EB80-1/8	1.090	7/16	0.715	1/8 (M)	3/8	

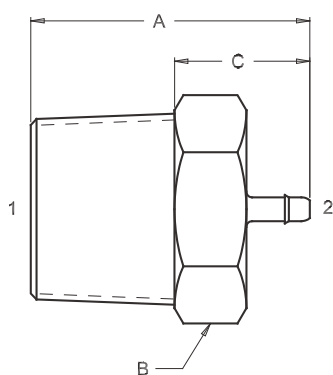


Part Number	A	B Hex	C	1	2 Tubing ID	Straight 1/4 NPT
EB10-1/4	0.971	9/16	0.471	1/4 (M)	1/16	
EB20-1/4	0.971	9/16	0.471	1/4 (M)	5/64	
EB25-1/4	0.974	9/16	0.474	1/4 (M)	3/32	
EB30-1/4	1.065	9/16	0.565	1/4 (M)	1/8	
EB35-1/4	1.089	9/16	0.589	1/4 (M)	5/32	
EB40-1/4	1.089	9/16	0.589	1/4 (M)	.170	
EB50-1/4	1.123	9/16	0.623	1/4 (M)	3/16	
EB60-1/4	1.246	9/16	0.746	1/4 (M)	1/4	
EB70-1/4	1.246	9/16	0.746	1/4 (M)	5/16	
EB80-1/4	1.309	9/16	0.809	1/4 (M)	3/8	



All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

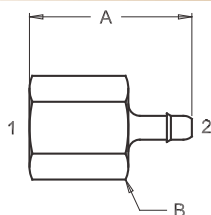
Straight 3/8 NPT



Part Number	A	B Hex	C	1	2 Tubing ID
EB20-3/8	0.971	11/16	0.471	3/8 (M)	5/64
EB25-3/8	0.974	11/16	0.474	3/8 (M)	3/32
EB30-3/8	1.065	11/16	0.565	3/8 (M)	1/8
EB40-3/8	1.089	11/16	0.589	3/8 (M)	.170
EB60-3/8	1.246	11/16	0.746	3/8 (M)	1/4
EB80-3/8	1.309	11/16	0.809	3/8 (M)	3/8

Straight 10-32

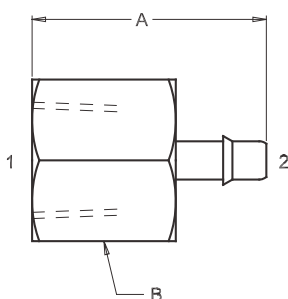
Female



Part Number	A	B Hex	1	2 Tubing ID
EFB10	0.565	1/4	10-32 (F)	1/16
EFB20	0.565	1/4	10-32 (F)	5/64
EFB30	0.659	1/4	10-32 (F)	1/8
EFB40	0.683	1/4	10-32 (F)	.170

Straight 1/8 NPT

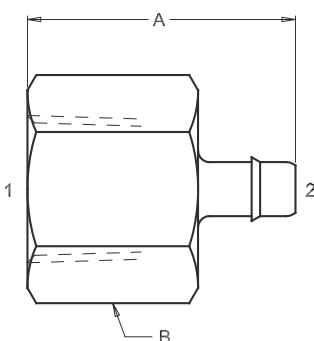
Female



Part Number	A	B Hex	1	2 Tubing ID
EFB10-1/8	0.721	7/16	1/8 (F)	1/16
EFB20-1/8	0.721	7/16	1/8 (F)	5/64
EFB25-1/8	0.724	7/16	1/8 (F)	3/32
EFB30-1/8	0.815	7/16	1/8 (F)	1/8
EFB35-1/8	0.839	7/16	1/8 (F)	5/32
EFB40-1/8	0.873	7/16	1/8 (F)	.170
EFB50-1/8	0.995	7/16	1/8 (F)	3/16
EFB60-1/8	0.995	7/16	1/8 (F)	1/4
EFB80-1/8	1.059	7/16	1/8 (F)	3/8

Straight 1/4 NPT

Female

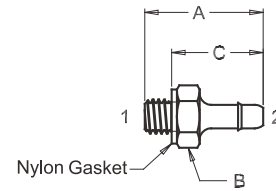


Part Number	A	B Hex	1	2 Tubing ID
EFB10-1/4	0.815	11/16	1/4 (F)	1/16
EFB20-1/4	0.815	11/16	1/4 (F)	5/64
EFB30-1/4	0.909	11/16	1/4 (F)	1/8
EFB40-1/4	0.933	11/16	1/4 (F)	.170
EFB50-1/4	0.967	11/16	1/4 (F)	3/16
EFB60-1/4	1.090	11/16	1/4 (F)	1/4
EFB80-1/4	1.153	11/16	1/4 (F)	3/8



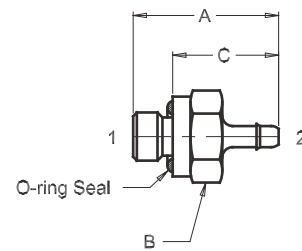
All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Part Number	A	B Hex	C	1	2 Tubing ID	Straight M3
EB10-M3*	0.412	3/16	0.300	M3 (M)	1/16	
EB20-M3	0.412	3/16	0.300	M3 (M)	5/64	
EB25-M3	0.415	3/16	0.303	M3 (M)	3/32	
EB30-M3	0.506	3/16	0.394	M3 (M)	1/8	
EB40-M3	0.536	1/4	0.451	M3 (M)	.170	

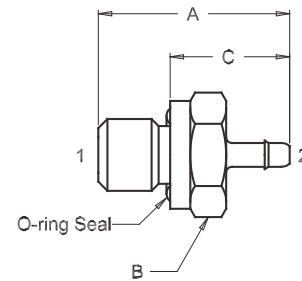


*Thru hole: 0.047

Part Number	A	B Hex	C	1	2 Tubing ID	Straight M5
EB10-M5	0.571	5/16	0.416	M5 (M)	1/16	
EB20-M5	0.571	5/16	0.416	M5 (M)	5/64	
EB25-M5	0.574	5/16	0.419	M5 (M)	3/32	
EB30-M5	0.665	5/16	0.510	M5 (M)	1/8	
EB40-M5	0.689	5/16	0.534	M5 (M)	.170	



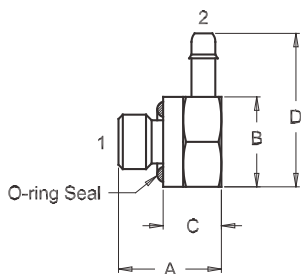
Part Number	A	B Hex	C	1	2 Tubing ID	Straight M6
EB10-M6	0.666	3/8	0.416	M6 (M)	1/16	
EB20-M6	0.666	3/8	0.416	M6 (M)	5/64	
EB25-M6	0.669	3/8	0.419	M6 (M)	3/32	
EB30-M6	0.760	3/8	0.510	M6 (M)	1/8	
EB40-M6	0.784	3/8	0.534	M6 (M)	.170	



When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

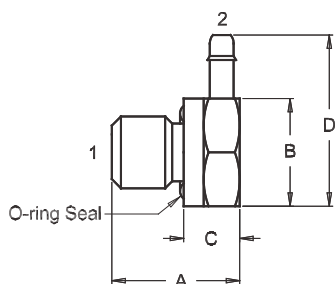
All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Elbow Fixed 10-32



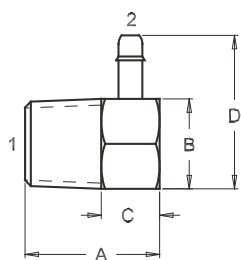
Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB10	0.358	5/16	0.203	0.534	10-32 (M)	1/16
ELB20	0.358	5/16	0.203	0.534	10-32 (M)	5/64
ELB25	0.358	5/16	0.203	0.537	10-32 (M)	3/32
ELB30	0.436	5/16	0.281	0.628	10-32 (M)	1/8
ELB35	0.488	5/16	0.333	0.652	10-32 (M)	5/32
ELB40	0.488	5/16	0.333	0.652	10-32 (M)	.170

Elbow Fixed 1/4-28



Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-4-28	0.445	3/8	0.195	0.596	1/4-28 (M)	1/16
ELB20-4-28	0.445	3/8	0.195	0.596	1/4-28 (M)	5/64
ELB25-4-28	0.445	3/8	0.195	0.599	1/4-28 (M)	3/32
ELB30-4-28	0.523	3/8	0.273	0.690	1/4-28 (M)	1/8
ELB35-4-28	0.575	3/8	0.325	0.714	1/4-28 (M)	5/32
ELB40-4-28	0.575	3/8	0.325	0.714	1/4-28 (M)	.170
ELB50-4-28	0.575	3/8	0.325	0.748	1/4-28 (M)	3/16

Elbow Fixed 1/16 NPT

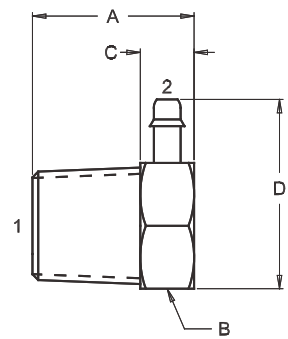


Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-1/16	0.468	5/16	0.203	0.534	1/16 (M)	1/16
ELB20-1/16	0.468	5/16	0.203	0.534	1/16 (M)	5/64
ELB25-1/16	0.468	5/16	0.203	0.537	1/16 (M)	3/32
ELB30-1/16	0.468	5/16	0.203	0.628	1/16 (M)	1/8
ELB40-1/16	0.531	3/8	0.266	0.714	1/16 (M)	.170
ELB50-1/16	0.531	3/8	0.266	0.748	1/16 (M)	3/16
ELB60-1/16	0.578	3/8	0.313	0.871	1/16 (M)	1/4

All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

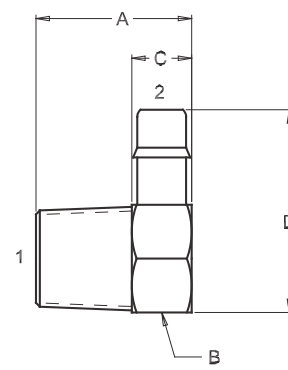
Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-1/8	0.625	7/16	0.300	0.659	1/8 (M)	1/16
ELB20-1/8	0.625	7/16	0.300	0.659	1/8 (M)	5/64
ELB25-1/8	0.625	7/16	0.300	0.662	1/8 (M)	3/32
ELB30-1/8	0.625	7/16	0.300	0.753	1/8 (M)	1/8
ELB35-1/8	0.625	7/16	0.300	0.777	1/8 (M)	5/32
ELB40-1/8	0.688	7/16	0.355	0.777	1/8 (M)	.170
ELB50-1/8	0.688	7/16	0.355	0.811	1/8 (M)	3/16
ELB60-1/8	0.688	7/16	0.375	0.934	1/8 (M)	1/4
ELB80-1/8	0.984	5/8	0.609	1.184	1/8 (M)	3/8

Elbow Fixed 1/8 NPT



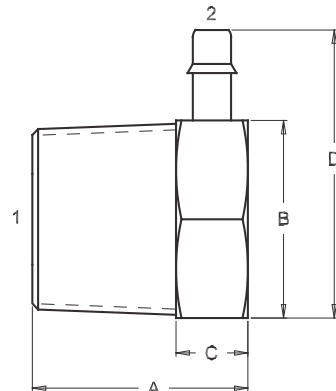
Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-1/4	0.750	9/16	0.250	0.784	1/4 (M)	1/16
ELB20-1/4	0.750	9/16	0.250	0.784	1/4 (M)	5/64
ELB25-1/4	0.750	9/16	0.250	0.787	1/4 (M)	3/32
ELB30-1/4	0.750	9/16	0.250	0.878	1/4 (M)	1/8
ELB30-1/4-S	0.583	9/16	0.250	0.878	1/4 (M)	1/8
ELB35-1/4	0.825	9/16	0.325	0.902	1/4 (M)	5/32
ELB40-1/4	0.825	9/16	0.325	0.902	1/4 (M)	.170
ELB40-1/4-S	0.658	9/16	0.325	0.902	1/4 (M)	.170
ELB50-1/4	0.825	9/16	0.325	0.936	1/4 (M)	3/16
ELB60-1/4	0.850	9/16	0.350	1.059	1/4 (M)	1/4
ELB80-1/4	1.109	3/4	0.609	1.309	1/4 (M)	3/8

Elbow Fixed 1/4 NPT



Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB30-3/8	0.750	11/16	0.250	1.003	3/8 (M)	1/8
ELB40-3/8	0.750	11/16	0.250	1.027	3/8 (M)	.170
ELB50-3/8	0.750	11/16	0.250	1.061	3/8 (M)	3/16
ELB60-3/8	0.813	11/16	0.313	1.184	3/8 (M)	1/4
ELB80-3/8	1.000	11/16	0.500	1.247	3/8 (M)	3/8

Elbow Fixed 3/8 NPT

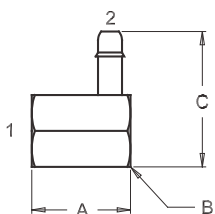


When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Elbow Fixed 10-32

Female

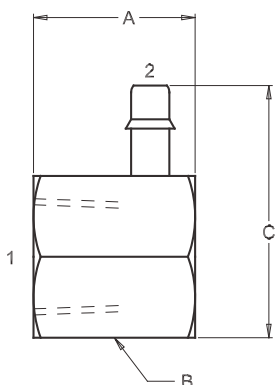


Part Number	A	B Hex	C	1	2 Tubing ID
EFLB10	0.344	1/4	0.471	10-32 (F)	1/16
EFLB20	0.344	1/4	0.471	10-32 (F)	5/64
EFLB10-S	0.281	1/4	0.471	10-32 (F)	1/16
EFLB20-S	0.281	1/4	0.471	10-32 (F)	5/64

S= Short

Elbow Fixed 1/8 NPT

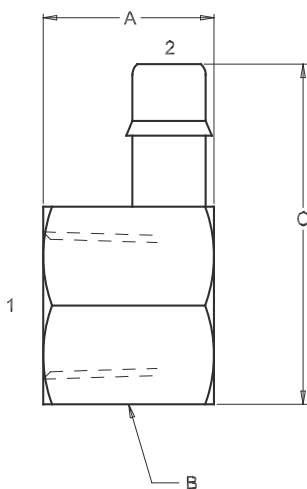
Female



Part Number	A	B Hex	C	1	2 Tubing ID
EFLB10-1/8	0.500	9/16	0.784	1/8 (F)	1/16
EFLB20-1/8	0.500	9/16	0.784	1/8 (F)	5/64
EFLB25-1/8	0.500	9/16	0.787	1/8 (F)	3/32
EFLB30-1/8	0.500	9/16	0.878	1/8 (F)	1/8
EFLB35-1/8	0.563	9/16	0.902	1/8 (F)	5/32
EFLB40-1/8	0.563	9/16	0.902	1/8 (F)	.170
EFLB50-1/8	0.563	9/16	0.936	1/8 (F)	3/16
EFLB60-1/8	0.563	9/16	1.059	1/8 (F)	1/4

Elbow Fixed 1/4 NPT

Female



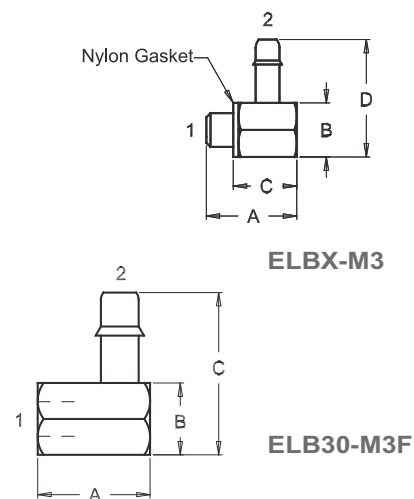
Part Number	A	B Hex	C	1	2 Tubing ID
EFLB10-1/4	0.594	11/16	0.909	1/4 (F)	1/16
EFLB20-1/4	0.594	11/16	0.909	1/4 (F)	5/64
EFLB25-1/4	0.594	11/16	0.912	1/4 (F)	3/32
EFLB30-1/4	0.594	11/16	1.003	1/4 (F)	1/8
EFLB35-1/4	0.594	11/16	1.027	1/4 (F)	5/32
EFLB40-1/4	0.594	11/16	1.027	1/4 (F)	.170
EFLB50-1/4	0.594	11/16	1.061	1/4 (F)	3/16
EFLB60-1/4	0.594	11/16	1.187	1/4 (F)	1/4
EFLB80-1/4	0.938	11/16	1.247	1/4 (F)	3/8



All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

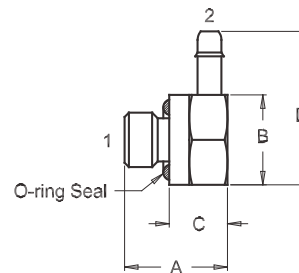
Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-M3	0.315	3/16	0.223	0.409	M3 (M)	1/16
ELB20-M3	0.315	3/16	0.223	0.409	M3 (M)	5/64
ELB25-M3	0.315	3/16	0.223	0.412	M3 (M)	3/32
ELB30-M3	0.393	5/16	0.301	0.628	M3 (M)	1/8
ELB30-M3F	0.391	1/4	0.565	----	M3 (F)	1/8
ELB40-M3	0.393	5/16	0.301	0.652	M3 (M)	.170

Elbow Fixed M3



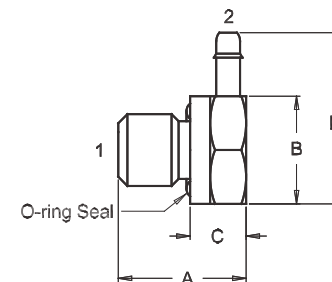
Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-M5	0.358	5/16	0.203	0.534	M5 (M)	1/16
ELB20-M5	0.358	5/16	0.203	0.534	M5 (M)	5/64
ELB25-M5	0.358	5/16	0.203	0.537	M5 (M)	3/32
ELB30-M5	0.436	5/16	0.281	0.628	M5 (M)	1/8
ELB40-M5	0.488	5/16	0.333	0.652	M5 (M)	.170

Elbow Fixed M5



Part Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-M6	0.445	3/8	0.195	0.596	M6 (M)	1/16
ELB20-M6	0.445	3/8	0.195	0.596	M6 (M)	5/64
ELB25-M6	0.445	3/8	0.195	0.599	M6 (M)	3/32
ELB30-M6	0.523	3/8	0.273	0.690	M6 (M)	1/8
ELB35-M6	0.575	3/8	0.325	0.714	M6 (M)	5/32
ELB40-M6	0.575	3/8	0.325	0.714	M6 (M)	.170
ELB50-M6	0.575	3/8	0.325	0.748	M6 (M)	3/16

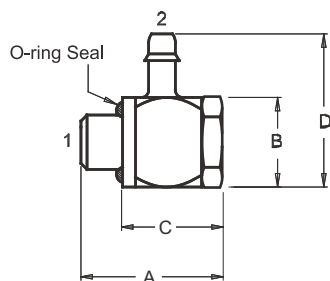
Elbow Fixed M6



When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

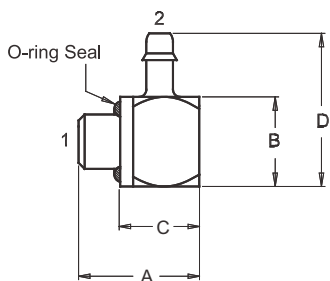
Elbow Adjustable



Part Number	A	B Square	C	D	1	2 Tubing ID
EA-LB10	0.496	5/16	0.351	0.533	10-32 (M)	1/16
EA-LB20	0.496	5/16	0.351	0.533	10-32 (M)	5/64
EA-LB25	0.496	5/16	0.351	0.536	10-32 (M)	3/32
EA-LB30	0.496	5/16	0.351	0.627	10-32 (M)	1/8
EA-LB40	0.596	5/16	0.424	0.619	10-32 (M)	.170
EA-LB50	0.596	5/16	0.424	0.686	10-32 (M)	3/16

Elbow Adjustable

Slotted



Part Number	A	B Square	C	D	1	2 Tubing ID
EA-LB10-SLOT	0.419	5/16	0.275	0.533	10-32 (M)	1/16
EA-LB20-SLOT	0.419	5/16	0.275	0.533	10-32 (M)	5/64
EA-LB25-SLOT	0.419	5/16	0.275	0.536	10-32 (M)	3/32
EA-LB30-SLOT	0.419	5/16	0.275	0.627	10-32 (M)	1/8
EA-LB40-SLOT	0.492	5/16	0.348	0.651	10-32 (M)	.170
EA-LB50-SLOT	0.492	5/16	0.348	0.685	10-32 (M)	3/16

Features a screwdriver slot for fitting alignment

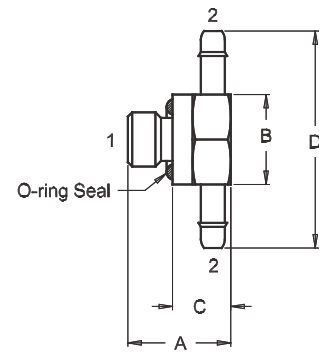


Pneu-Edge fittings feature a consistently sharp, single-barb design which provides a tighter grip and seal than standard multiple barbs

 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

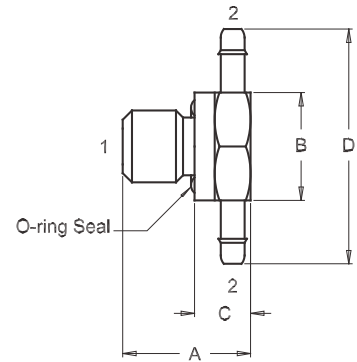
Part Number	A	B Hex	C	D	1	2 Tubing ID
ETB10	0.356	5/16	0.203	0.755	10-32 (M)	1/16
ETB20	0.356	5/16	0.203	0.755	10-32 (M)	5/64
ETB25	0.356	5/16	0.203	0.761	10-32 (M)	3/32
ETB30	0.436	5/16	0.281	0.943	10-32 (M)	1/8
ETB35	0.488	5/16	0.333	0.991	10-32 (M)	5/32
ETB40	0.488	5/16	0.333	0.991	10-32 (M)	.170

Tee Fixed 10-32



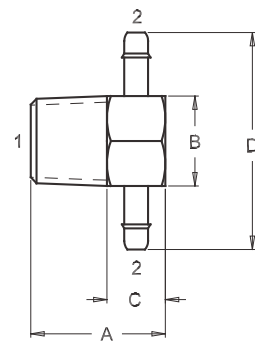
Part Number	A	B Hex	C	D	1	2 Tubing ID
ET10-4-28	0.445	3/8	0.195	0.817	1/4-28 (M)	1/16
ET20-4-28	0.445	3/8	0.195	0.817	1/4-28 (M)	5/64
ET25-4-28	0.445	3/8	0.195	0.823	1/4-28 (M)	3/32
ET30-4-28	0.523	3/8	0.273	1.005	1/4-28 (M)	1/8
ET40-4-28	0.575	3/8	0.325	1.053	1/4-28 (M)	.170
ET50-4-28	0.575	3/8	0.325	1.121	1/4-28 (M)	3/16

Tee Fixed 1/4-28




Part Number	A	B Hex	C	D	1	2 Tubing ID
ET10-1/16	0.468	5/16	0.203	0.755	1/16 (M)	1/16
ET20-1/16	0.468	5/16	0.203	0.755	1/16 (M)	5/64
ET25-1/16	0.468	5/16	0.203	0.761	1/16 (M)	3/32
ET30-1/16	0.468	5/16	0.203	0.943	1/16 (M)	1/8
ET40-1/16	0.531	3/8	0.266	1.053	1/16 (M)	.170
ET50-1/16	0.531	3/8	0.266	1.121	1/16 (M)	3/16

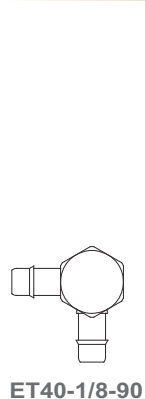
Tee Fixed 1/16 NPT



When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

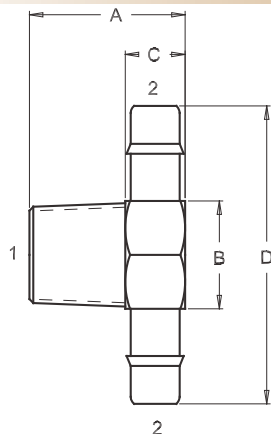
 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Tee Fixed 1/8 NPT



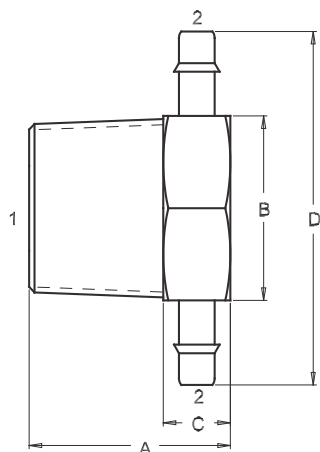
Part Number	A	B Hex	C	D	1	2 Tubing ID
ET10-1/8	0.563	7/16	0.188	0.880	1/8 (M)	1/16
ET20-1/8	0.563	7/16	0.188	0.880	1/8 (M)	5/64
ET25-1/8	0.563	7/16	0.188	0.886	1/8 (M)	3/32
ET30-1/8	0.563	7/16	0.188	1.068	1/8 (M)	1/8
ET40-1/8	0.625	7/16	0.250	1.116	1/8 (M)	.170
ET40-1/8-90	0.625	7/16	0.250	1.116	1/8 (M)	.170
ET50-1/8	0.625	7/16	0.250	1.184	1/8 (M)	3/16
ET60-1/8	0.688	7/16	0.313	1.430	1/8 (M)	1/4
ET80-1/8	0.984	3/4	0.609	1.743	1/8 (M)	3/8

Tee Fixed 1/4 NPT



Part Number	A	B Hex	C	D	1	2 Tubing ID
ET10-1/4	0.750	9/16	0.250	1.005	1/4 (M)	1/16
ET20-1/4	0.750	9/16	0.250	1.005	1/4 (M)	5/64
ET25-1/4	0.750	9/16	0.250	1.011	1/4 (M)	3/32
ET30-1/4	0.750	9/16	0.250	1.193	1/4 (M)	1/8
ET40-1/4	0.825	9/16	0.325	1.241	1/4 (M)	.170
ET50-1/4	0.825	9/16	0.325	1.309	1/4 (M)	3/16
ET60-1/4	0.850	9/16	0.350	1.555	1/4 (M)	1/4
ET80-1/4	1.109	3/4	0.609	1.868	1/4 (M)	3/8

Tee Fixed 3/8 NPT

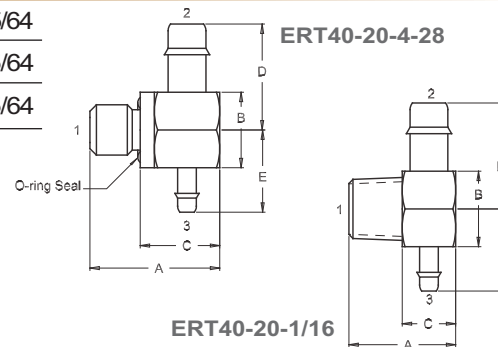


Part Number	A	B Hex	C	D	1	2 Tubing ID
ET30-3/8	0.750	11/16	0.250	1.318	3/8 (M)	1/8
ET40-3/8	0.750	11/16	0.250	1.366	3/8 (M)	.170
ET50-3/8	0.750	11/16	0.250	1.434	3/8 (M)	3/16
ET60-3/8	0.813	11/16	0.313	1.680	3/8 (M)	1/4
ET80-3/8	1.000	11/16	0.500	1.806	3/8 (M)	3/8

All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

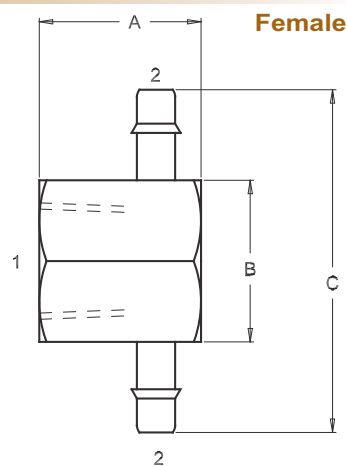
Part Number	A	B Hex	C	D	E	1	2 Tubing ID	3
ERT40-20-4-28	0.575	3/8	0.325	0.527	0.409	1/4-28 (M)	.170	5/64
ERT40-20-1/16	0.531	3/8	0.266	0.527	0.409	1/16 (M)	.170	5/64
ERT40-20-1/4	0.825	9/16	0.325	0.621	0.503	1/4 (M)	.170	5/64

Tee Fixed Reducing



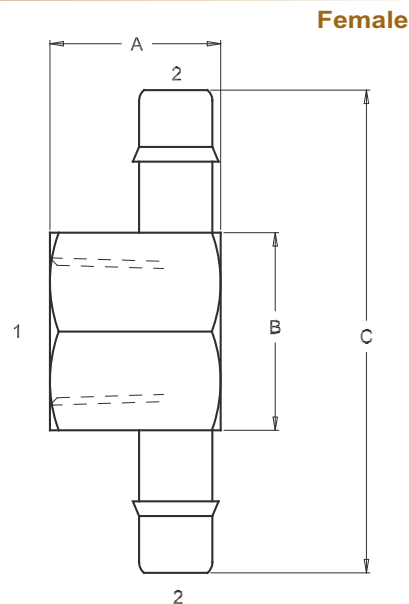
Part Number	A	B Hex	C	1	2 Tubing ID
EFT10-1/8	0.500	9/16	1.005	1/8 (F)	1/16
EFT20-1/8	0.500	9/16	1.011	1/8 (F)	5/64
EFT30-1/8	0.500	9/16	1.193	1/8 (F)	1/8
EFT40-1/8	0.563	9/16	1.241	1/8 (F)	.170
EFT50-1/8	0.563	9/16	1.309	1/8 (F)	3/16
EFT60-1/8	0.563	9/16	1.561	1/8 (F)	1/4

Tee Fixed 1/8 NPT



Part Number	A	B Hex	C	1	2 Tubing ID
EFT10-1/4	0.594	11/16	1.130	1/4 (F)	1/16
EFT20-1/4	0.594	11/16	1.130	1/4 (F)	5/64
EFT25-1/4	0.594	11/16	1.136	1/4 (F)	3/32
EFT30-1/4	0.594	11/16	1.318	1/4 (F)	1/8
EFT40-1/4	0.594	11/16	1.366	1/4 (F)	.170
EFT50-1/4	0.594	11/16	1.434	1/4 (F)	3/16
EFT60-1/4	0.594	11/16	1.686	1/4 (F)	1/4
EFT80-1/4	0.938	11/16	1.806	1/4 (F)	3/8

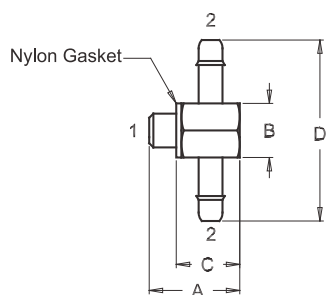
Tee Fixed 1/4 NPT



When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

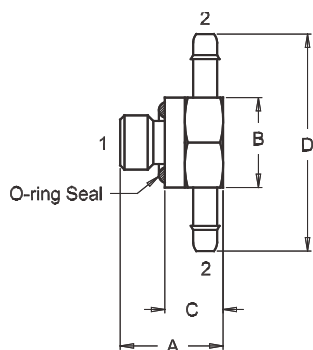
All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Tee Fixed M3



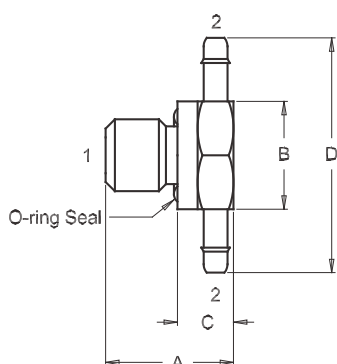
Part Number	A	B Hex	C	D	1	2 Tubing ID
ET10-M3	0.315	3/16	0.223	0.630	M3 (M)	1/16
ET20-M3	0.315	3/16	0.223	0.630	M3 (M)	5/64
ET25-M3	0.315	3/16	0.223	0.636	M3 (M)	3/32
ET30-M3	0.393	5/16	0.393	0.943	M3 (M)	1/8
ET40-M3	0.393	5/16	0.393	0.991	M3 (M)	.170

Tee Fixed M5




Part Number	A	B Hex	C	D	1	2 Tubing ID
ET10-M5	0.356	5/16	0.203	0.755	M5 (M)	1/16
ET20-M5	0.356	5/16	0.203	0.755	M5 (M)	5/64
ET25-M5	0.356	5/16	0.203	0.761	M5 (M)	3/32
ET30-M5	0.436	5/16	0.281	0.943	M5 (M)	1/8
ET40-M5	0.488	5/16	0.333	0.991	M5 (M)	.170

Tee Fixed M6



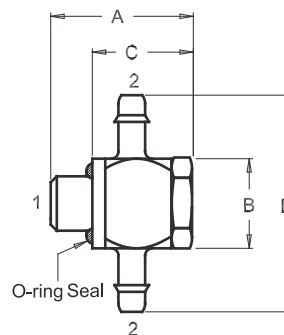
Part Number	A	B Hex	C	D	1	2 Tubing ID
ET10-M6	0.445	3/8	0.195	0.817	M6 (M)	1/16
ET20-M6	0.445	3/8	0.195	0.817	M6 (M)	5/64
ET25-M6	0.445	3/8	0.195	0.823	M6 (M)	3/32
ET30-M6	0.523	3/8	0.273	1.005	M6 (M)	1/8
ET35-M6	0.575	3/8	0.325	1.053	M6 (M)	5/32
ET40-M6	0.575	3/8	0.325	1.053	M6 (M)	.170
ET50-M6	0.575	3/8	0.325	1.121	M6 (M)	3/16

When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Part Number	A	B Square	C	D	1	2 Tubing ID
EA-T10	0.496	5/16	0.351	0.754	10-32 (M)	1/16
EA-T20	0.496	5/16	0.351	0.754	10-32 (M)	5/64
EA-T25	0.496	5/16	0.351	0.760	10-32 (M)	3/32
EA-T30	0.496	5/16	0.351	0.942	10-32 (M)	1/8
EA-T40	0.596	5/16	0.424	0.991	10-32 (M)	.170
EA-T50	0.596	5/16	0.424	1.059	10-32 (M)	3/16

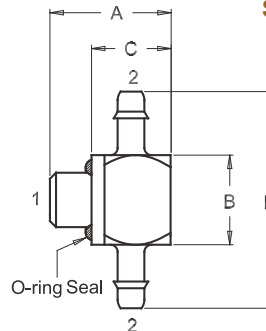
Tee Adjustable 10-32



Part Number	A	B Square	C	D	1	2 Tubing ID
EA-T10-SLOT	0.419	5/16	0.275	0.754	10-32 (M)	1/16
EA-T20-SLOT	0.419	5/16	0.275	0.754	10-32 (M)	5/64
EA-T25-SLOT	0.419	5/16	0.275	0.760	10-32 (M)	3/32
EA-T30-SLOT	0.419	5/16	0.275	0.942	10-32 (M)	1/8
EA-T40-SLOT	0.492	5/16	0.348	0.990	10-32 (M)	.170
EA-T50-SLOT	0.492	5/16	0.348	1.058	10-32 (M)	3/16

Tee Adjustable 10-32


Slotted



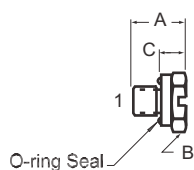
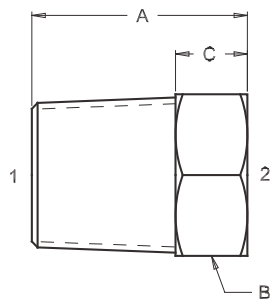
Features a screwdriver slot for fitting alignment

Swiss precision machining ensures consistently sharp barbs for more permanent tubing installation



 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

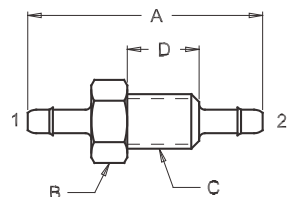
Plugs



Part Number	A	B Hex	C	1
SPG-1/16	0.390	5/16	0.125	1/16 (M)
SPG-1/8	0.531	7/16	0.156	1/8 (M)
SPG-1/4	0.750	9/16	0.250	1/4 (M)
SPG-3/8	0.750	11/16	0.250	3/8 (M)
SPG-1/2	0.875	7/8	0.250	1/2 (M)
Slotted				
SPG-4-28	0.445	3/8	0.195	1/4-28 (M)
SPG-10	0.310	5/16	0.160	10-32 (M)
SPG-10-1/4	0.310	1/4	0.160	10-32 (M)
SPG-M3*	0.191	3/16	0.099	M3 (M)
SPG-M5	0.310	5/16	0.195	M5 (M)
SPG-M6	0.445	3/8	0.195	M6 (M)

* Nylon Gasket

Bulkheads



Part Number	A	B Hex	C	D	1 Tubing ID	2 Tubing ID
EBK-10	0.817	1/4	10-32 (M)	0.250	1/16	1/16
EBK-20	0.817	1/4	10-32 (M)	0.250	5/64	5/64
EBK-25	0.823	1/4	10-32 (M)	0.250	3/32	3/32
EBK-30-4-28	1.068	5/16	1/4-28 (M)	0.313	1/8	1/8
EBK-40-20	0.935	1/4	10-32 (M)	0.250	.170	5/64
EBK-40-25	0.938	1/4	10-32 (M)	0.250	.170	3/32
EBK-40-5/16	1.209	3/8	5/16-24 (M)	0.406	.170	.170
EBK-60-3/8	1.523	1/2	3/8-24 (M)	0.406	1/4	1/4
EBK-60-1/8	1.523	1/2	*1/8 (M)	0.375	1/4	1/4

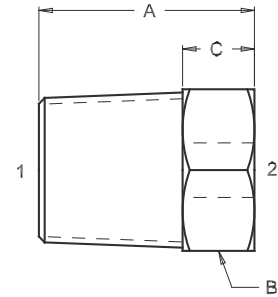
Note: Locking nut included

*NPT pipe thread: locking nut not included

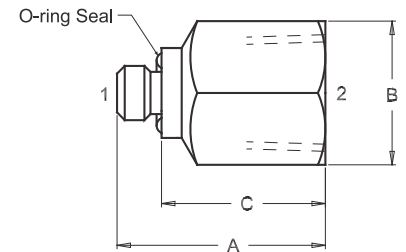
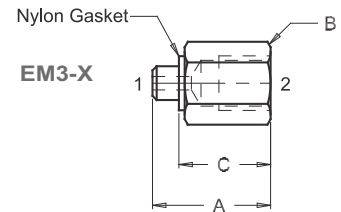


All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Part Number	A	B Hex	C	1	2	Bushings Reducer
ERB1/4-10	0.750	9/16	0.250	1/4 (M)	10-32 (F)	
26	0.680	9/16	0.180	1/4 (M)	10-32 (F)	
ERB1/4-1/16	0.750	9/16	0.250	1/4 (M)	1/16 (F)	
ERB1/4-1/8	0.750	9/16	0.250	1/4 (M)	1/8 (F)	
25	0.530	7/16	0.160	1/8 (M)	10-32 (F)	
ERB1/8-1/16	0.531	7/16	0.156	1/8 (M)	1/16 (F)	
27	0.410	3/8	0.140	1/16 (M)	10-32 (F)	
ERB4-28-10	0.531	5/16	0.281	1/4-28 (M)	10-32 (F)	



Part Number	A	B Hex	C	1	2	Adapters
EM3-10	0.411	1/4	0.299	M3 (M)	10-32 (F)	
EM3-M6	0.501	5/16	0.389	M3 (M)	M6 (F)	
EM5-10	0.565	5/16	0.720	M5 (M)	10-32 (F)	
EM5-1/8	0.725	1/2	0.570	M5 (M)	1/8 (F)	
EM6-1/8	0.820	1/2	0.570	M6 (M)	1/8 (F)	
EM6-M6	0.750	3/8	0.500	M6 (M)	M6 (F)	
E10-1/8	0.724	1/2	0.500	10-32 (M)	1/8 (F)	
E1/8-1/4	0.969	11/16	0.594	1/8 (M)	1/4 (F)	



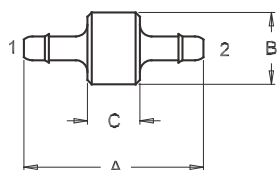
Pneumadyne's Pneu-Edge® fittings ensure a lasting tubing connection and leak-proof fit

When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

SS All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Barb-to-Barb

Couplings

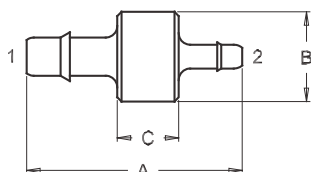


Part Number	A	B Diam.	C	1 Tubing ID	2
EC10	0.625	1/4	0.183	1/16	1/16
EC20	0.625	1/4	0.183	5/64	5/64
EC20-SL	0.500	5/32	0.058	5/64	5/64
EC25	0.641	5/16	0.193	3/32	3/32
EC30	0.884	5/16	0.214	1/8	1/8
EC35	0.879	5/16	0.214	5/32	5/32
EC40	0.938	5/16	0.245	.170	.170
EC50	1.000	3/8	0.254	3/16	3/16
EC60	1.313	7/16	0.321	1/4	1/4
EC70	1.313	7/16	0.321	5/16	5/16
EC80	1.283	7/16	0.120	3/8	3/8


Note: SL= Slim Line

Barb-to-Barb

Couplings



Part Number	A	B Diam.	C	1 Tubing ID	2
ERC20-10	0.625	1/4	0.183	5/64	1/16
ERC30-10	0.750	5/16	0.214	1/8	1/16
ERC30-20	0.750	5/16	0.214	1/8	5/64
ERC30-25	0.753	5/16	0.214	1/8	3/32
ERC40-10	0.820	5/16	0.245	.170	1/16
ERC40-20	0.820	5/16	0.245	.170	5/64
ERC40-25	0.823	5/16	0.245	.170	3/32
ERC40-30	0.914	5/16	0.245	.170	1/8
ERC50-30	0.942	3/8	0.254	3/16	1/8
ERC50-35	0.966	3/8	0.254	3/16	5/32
ERC60-20	1.038	7/16	0.348	1/4	5/64
ERC60-30	1.132	7/16	0.348	1/4	1/8
ERC60-40	1.156	7/16	0.348	1/4	.170
ERC80-60	1.175	7/16	0.120	3/8	1/4

 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

About Us

Pneumadyne, Inc. is a leading manufacturer of pneumatic components and pneumatic control systems. Designed and manufactured in the USA, our directional control valves, fittings, manifolds, air nozzles and custom products are relied upon for fluid control throughout a wide-variety of industries.

We have the fluid power expertise, design experience and manufacturing capabilities necessary to support your fluid handling applications. Whether you need standard or custom pneumatic products, you can rely on us for innovative, quality solutions that meet your expectations.



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ISO 9001

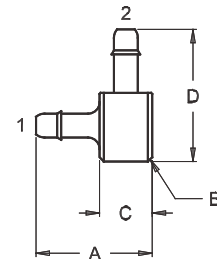
PNEUMADYNE

Providing system solutions for fluid control

Part Number	A	B Diam.	C	D	1 Tubing ID	2
EL10	0.404	1/4	0.183	0.460	1/16	1/16
EL20	0.404	1/4	0.183	0.460	5/64	5/64
EL30	0.529	5/16	0.214	0.604	1/8	1/8
EL40	0.599	5/16	0.260	0.628	.170	.170
EL60	0.817	7/16	0.321	0.892	1/4	1/4
EL80	1.059	5/8	0.500	1.094	3/8	3/8

Barb-to-Barb

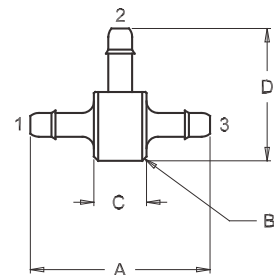
Elbows



Part Number	A	B Diam.	C	D	1, 2, 3 Tubing ID
ET10	0.625	1/4	0.183	0.460	1/16
ET20	0.625	1/4	0.183	0.460	5/64
ET25	0.631	1/4	0.183	0.451	3/32
ET30	0.844	5/16	0.214	0.604	1/8
ET35	0.938	5/16	0.260	0.628	5/32
ET40	0.938	5/16	0.260	0.628	.170
ET50	1.000	3/8	0.254	0.714	3/16
ET60	1.313	7/16	0.321	0.892	1/4
ET70	1.492	5/8	0.500	1.031	5/16
ET80	1.618	5/8	0.500	1.094	3/8

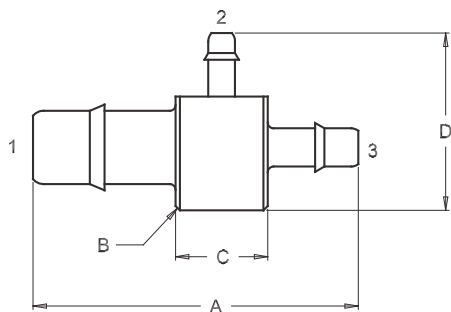
Barb-to-Barb

Tees



Barb-to-Barb


Tees- Reducing



Part Number	A	B Diam.	C	D	1 Tubing ID	2 Tubing ID	3 Tubing ID
ERT10-30-10	0.625	1/4	0.183	0.554	1/16	1/8	1/16
ERT20-10-20	0.625	1/4	0.183	0.460	5/64	1/16	5/64
ERT30-10-10	0.750	5/16	0.214	0.510	1/8	1/16	1/16
ERT30-30-10	0.750	5/16	0.214	0.604	1/8	1/8	1/16
ERT30-20-20	0.750	5/16	0.214	0.510	1/8	5/64	5/64
ERT30-10-30	0.844	5/16	0.214	0.510	1/8	1/16	1/8
ERT30-20-30	0.844	5/16	0.214	0.510	1/8	5/64	1/8
ERT30-25-30	0.844	5/16	0.214	0.513	1/8	3/32	1/8
ERT30-40-30	0.890	5/16	0.260	0.628	1/8	.170	1/8
ERT40-10-40	0.892	5/16	0.214	0.510	.170	1/16	.170
ERT40-20-40	0.892	5/16	0.214	0.510	.170	5/64	.170
ERT40-30-30	0.868	5/16	0.214	0.604	.170	1/8	1/8
ERT40-30-40	0.892	5/16	0.214	0.604	.170	1/8	.170
ERT40-40-20	0.820	5/16	0.260	0.628	.170	.170	5/64
ERT40-40-30	0.914	5/16	0.260	0.628	.170	.170	1/8
ERT50-20-50	1.000	3/8	0.254	0.562	3/16	5/64	3/16
ERT50-30-50	1.000	3/8	0.254	0.656	3/16	1/8	3/16



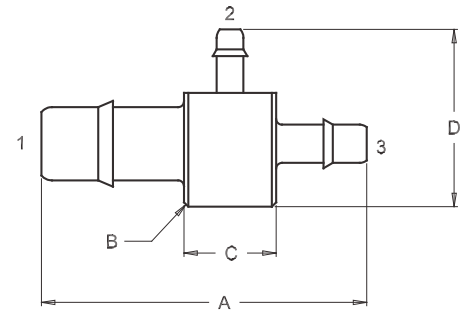
Straight connectors, tees, elbows, crosses and couplings are available in a wide variety of sizes and materials to accommodate numerous fluid handling circuits.

 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number


Barb-to-Barb

Tees- Reducing

Part Number	A	B Diam.	C	D	1 Tubing ID	2 Tubing ID	3 Tubing ID
ERT60-20-60	1.313	7/16	0.321	0.617	1/4	5/64	1/4
ERT60-30-60	1.313	7/16	0.321	0.711	1/4	1/8	1/4
ERT60-40-60	1.313	7/16	0.321	0.735	1/4	.170	1/4
ERT60-60-30	1.132	7/16	0.321	0.892	1/4	1/4	1/8
ERT60-60-40	1.156	7/16	0.321	0.892	1/4	1/4	.170
ERT60-30-30	1.132	7/16	0.321	0.711	1/4	1/8	1/8
ERT60-30-20	1.038	7/16	0.321	0.711	1/4	1/8	5/64
ERT60-20-30	1.132	7/16	0.321	0.617	1/4	5/64	1/8
ERT60-30-40	1.156	7/16	0.321	0.711	1/4	1/8	.170
ERT60-40-30	1.132	7/16	0.321	0.735	1/4	.170	1/8
ERT60-80-60	1.455	5/8	0.500	1.094	1/4	3/8	1/4
ERT80-20-80	1.618	5/8	0.500	0.756	3/8	5/64	3/8
ERT80-30-80	1.618	5/8	0.500	0.850	3/8	1/8	3/8
ERT80-60-80	1.618	5/8	0.500	1.031	3/8	1/4	3/8

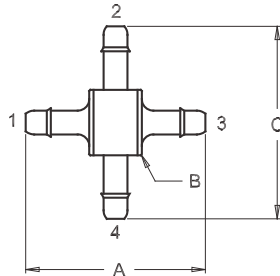


Manufacturing quality is ensured through strict process control of CNC equipment - from our "high tech" 5-axis Swiss screw machines to our basic 2-axis lathes. Employing the most sophisticated techniques available, such as 24-hour "lights out" machining, increases our ability to provide custom products and fulfill low volume orders, setting us apart in the miniature pneumatics industry.

 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Barb-to-Barb

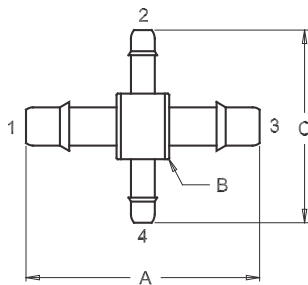
Crosses



Part Number	A	B Diam.	C	1, 2, 3, 4 Tubing ID
EX10	0.625	1/4	0.670	1/16
EX20	0.625	1/4	0.670	5/64
EX25	0.662	5/16	0.714	3/32
EX30	0.844	5/16	0.896	1/8
EX40	0.938	5/16	0.944	.170
EX50	1.000	3/8	1.052	3/16
EX60	1.313	7/16	1.346	1/4
EX80	1.618	5/8	1.562	3/8

Barb-to-Barb

Crosses- Reducing



Part Number	A	B Diam.	C	1 Tubing ID	2 Tubing ID	3 Tubing ID	4 Tubing ID
ERX30-10-10-10	0.750	5/16	0.708	1/8	1/16	1/16	1/16
ERX30-10-30-10	0.844	5/16	0.708	1/8	1/16	1/8	1/16
ERX30-20-30-20	0.844	5/16	0.708	1/8	5/64	1/8	5/64
ERX40-20-40-20	0.892	5/16	0.708	.170	5/64	.170	5/64
ERX40-40-20-40	0.820	5/16	0.944	.170	.170	5/64	.170
ERX80-40-80-40	1.618	5/8	1.122	3/8	.170	3/8	.170

When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.



All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number



Features

- Reliability of a metal-to-metal mechanical fit
- Captured O-ring for superior seal
- Precision machined barb design
- Electroless Nickel plated

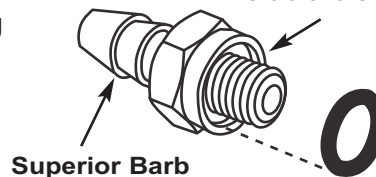
O-ring Seal Fittings

The O-ring fitting design was perfected by Pneumadyne engineers in the early 1980's. This unique fitting created a standard for industry and today numerous competitors have attempted to replicate our design. The Pneumadyne O-ring fitting was designed with the superior static sealing qualities of an O-ring plus the reliability of a metal-to-metal mechanical fit.

When properly installed the skirt around the O-ring allows the fitting to mechanically seat on the rim of the female thread and hold the fitting tight. The high quality Buna-N O-ring is captured inside the skirt of the fitting, concealing it from view and providing a clean looking connection. The result is superior sealing power- the Buna-N O-ring is not pinched but rather compressed within the fitting skirt which ensures a leakproof fit even when mated with a less than perfect sealing surface. When torqued down the mechanical fit keeps the fittings tight and retains its position even under constant vibration.

Our captured O-ring design also eases installation, there is no need to replace or reposition the seal - we have eliminated the need for replacement gaskets or washers.

"high quality Buna-N O-ring is captured inside the skirt"



Ordering Information

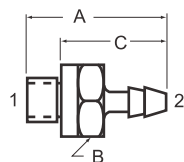
- To order standard product use part number listing.
- For 303 Stainless Steel add a -SS suffix to the part number - *lead times may apply.*
- Optional O-rings available - contact factory.
- Standard package quantities:
 - 25 pcs per bag
 - 100 pcs per box

Materials

Brass, Electroless Nickel, Stainless Steel 303, Buna-N O-Rings (standard) optional seals available -contact factory

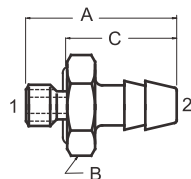
Custom designs are welcome

Straight Connector



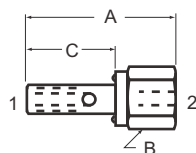
Part Number	A	B Hex	C	1	2 Tubing ID
SBF-062	.60	5/16	.44	10-32 (M)	1/16
SBF-062-LP	.49	5/16	.33	10-32 (M)	1/16
SBF-062-1/4	.59	1/4	.44	10-32 (M)	1/16
SBF-110	.58	5/16	.42	10-32 (M)	5/64
SBF-110-1/4	.58	1/4	.42	10-32 (M)	5/64
SBF-140	.66	5/16	.50	10-32 (M)	1/8
SBF-140-1/4	.66	1/4	.50	10-32 (M)	1/8
SBF-170	.72	5/16	.56	10-32 (M)	.170
SBF-170-1/4	.72	1/4	.56	10-32 (M)	.170

Straight M3



Part Number	A	B Hex	C	1	2 Tubing ID
SBF-062-1/4-M3	.45	1/4	.33	M3	1/16
SBF-110-1/4-M3	.45	1/4	.31	M3	5/64

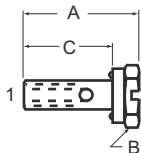
Stud Manifold



Part Number	A	B Hex	C	1	2
SFD-10	.85	5/16	.51	10-32 (M)	10-32 (F)

Stud

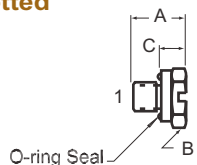
Slotted



Part Number	A	B Hex	C	1
STD-10	.67	5/16	.51	10-32 (M)

Plug

Slotted

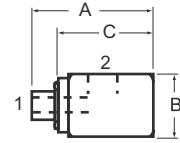


Part Number	A	B Hex	C	1
SPG-10	.31	5/16	.16	10-32 (M)
SPG-10-1/4	.31	1/4	.16	10-32 (M)

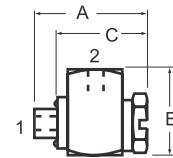


All O-ring fittings are available in 303 Stainless Steel; add a -SS suffix to the standard part number

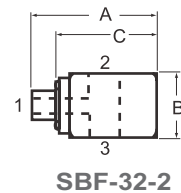
Part Number	A	B Square	C	1	2	Elbow Fixed
SBF-32-1	.61	3/8	.45	10-32 (M)	10-32 (F)	



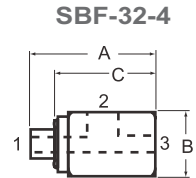
Part Number	A	B	C	1	2	Hex	Elbow Adjustable
STL-10	.67	.50	.54	10-32 (M)	10-32 (F)	5/16	
STL-10-SS	.67	.50	.54	10-32 (M)	10-32 (F)	5/16	



Part Number	A	B Square	C	1	2	3	Tee Fixed
SBF-32-2	.61	3/8 sq	.45	10-32 (M)	10-32 (F)	10-32 (F)	
SBF-32-4	.72	3/8 sq	.57	10-32 (M)	10-32 (F)	10-32(F)	

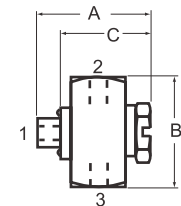


SBF-32-2

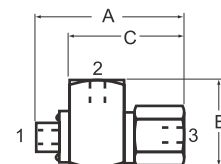



SBF-32-4

Part Number	A	B	C	1	2, 3	Hex	Tee Adjustable
STT-10	.67	.63	.54	10-32 (M)	10-32 (F)	5/16	
STT-10-SS	.67	.63	.54	10-32 (M)	10-32 (F)	5/16	

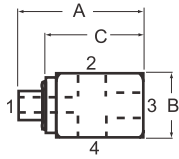


Part Number	A	B	C	1	2, 3	Hex	Run Tee Adjustable
SFL-10	.85	.50	.72	10-32 (M)	10-32 (F)	5/16	



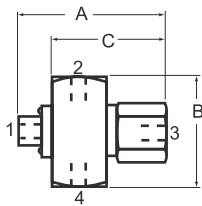
 All O-ring fittings are available in 303 Stainless Steel; add a -SS suffix to the standard part number

Cross Fixed



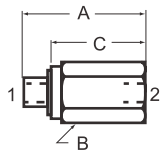
Part Number	A	B Square	C	1	2,3,4
SBF-32-3	.72	3/8	.57	10-32 (M)	10-32 (F)

Cross Adjustable



Part Number	A	B	C	1	2, 3,4	Hex
SFT-10	.85	.63	.72	10-32 (M)	10-32 (F)	5/16

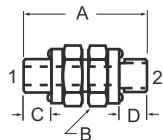
Adapter



Part Number	A	B Hex	C	1	2
SSP-10	.72	5/16	.56	10-32 (M)	10-32 (F)

Nipple

Universal Adjustable



Part Number	A	B Hex	C adjst	D fixed	1, 2
SFU-22	.72	5/16	.185	.16	10-32 (M)

C = adjustable nut tightened to fixed nut

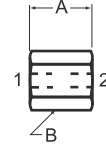
All dimensions and specifications are subject to change without notice



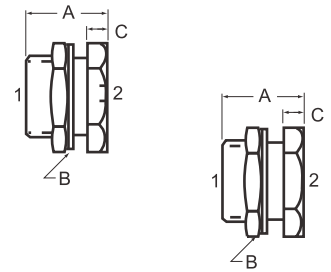
All O-ring fittings are available in 303 Stainless Steel; add a -SS suffix to the standard part number

Part Number	A	B	1, 2 thru	Coupling
*22	.38	1/4	10-32 (F)	
SF-22	.38	5/16	10-32 (F)	

*Standard product is brass, contact factory for Electroless Nickel finish

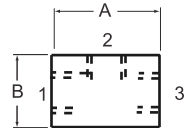


Part Number	A	B	C	1	2	Bulkhead
SBH-10	.45	9/16	.11	15/32-32 x10-32 (F)	10-32 (F)	
SBH-125	.45	9/16	.11	15/32-32 x10-32 (F)	1/8 (F)	



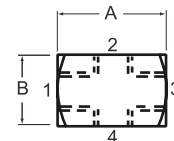
Part Number	A	B Square	1	2	3	Tee
02-3	.562	3/8	10-32 (F)	10-32 (F)	10-32(F)	Female

*Standard product is brass, contact factory for Electroless Nickel finish



Part Number	A	B Square	1	2, 3, 4	Cross
02-4	.56	3/8	10-32 (F)	10-32 (F)	Female

*Standard product is brass, contact factory for Electroless Nickel finish



All O-ring fittings are available in 303 Stainless Steel; add a -SS suffix to the standard part number

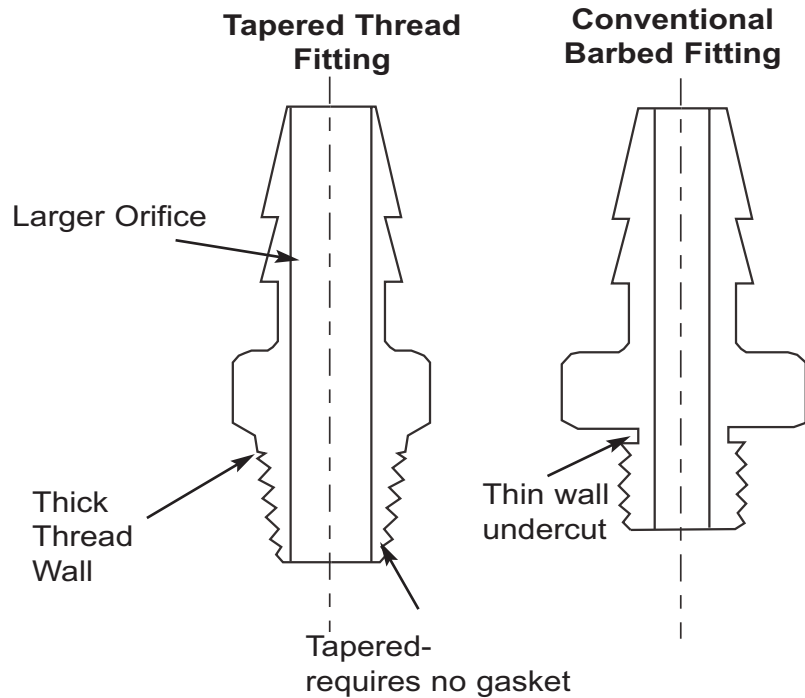
Features

- Tapered thread
No gasket required
- Larger orifice
- Thick thread wall
- Precision machined barbs
- Brass



Tapered Thread Fittings

Engineers at Pneumadyne pioneered the 10-32 tapered thread design and have incorporated it in a 10-32 fitting. This unique design eliminates the need for a soft seal undercut at the base of the fitting and produces a seal similar to pipe thread. The absence of the undercut also allows for a larger than normal hole permitting more flow. Tapered threads are sturdier than thin walled 10-32 fittings and can be used in conventional straight female threads as well.



Tape or Thread Sealant recommended

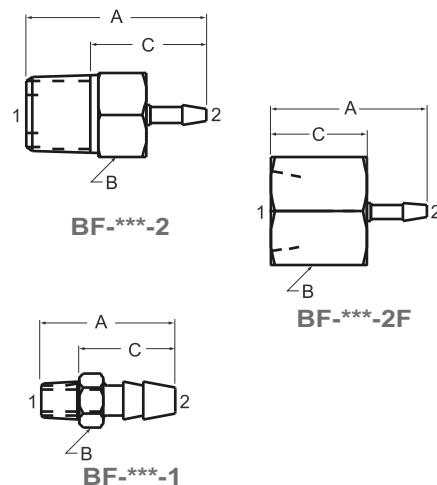
Custom Designs are Welcome

Ordering Information

- To order standard brass product use part number listing.
- All tapered thread fittings are available in brass as standard; For **Electroless Nickel** add an "N" as a last digit to the standard part number.
- Standard package quantities:
 - 25 pcs per bag
 - 100 pcs per box

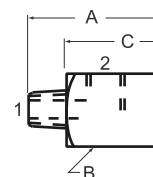
Part Number A B Hex C 1 2 Tubing ID Straight Connector

BF-062	.57	1/4	.370	10-32 (M)	1/16
BF-062-2	.94	7/16	.565	1/8 (M)	1/16
BF-062-2F	.75	1/2	.815	1/8 (F)	1/16
BF-110-2	.88	7/16	.510	1/8 (M)	5/64
BF-140	.70	1/4	.500	10-32 (M)	1/8
BF-170-1	.70	1/4	.500	10-32 (M)	.170
BF-170-2	.90	7/16	.530	1/8 (M)	.170
BF-170-2F	.88	1/2	.875	1/8 (F)	.170



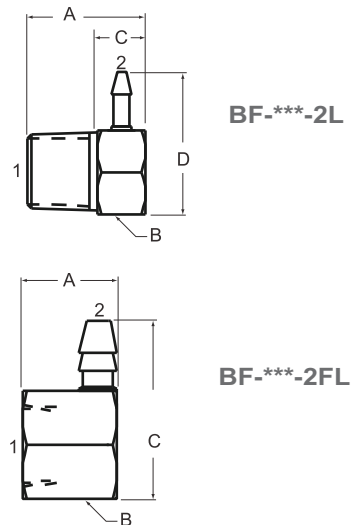
Part Number A B Square C 1 2 Elbow Fixed

32-1	.70	3/8	.50	10-32 (M)	10-32 (F)
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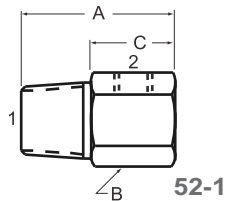
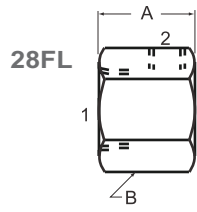
Part Number A B Hex C D 1 2 Tubing ID Elbow Tapered to Barb

BF-062-2FL	.50	9/16	.50	-	1/8 (F)	1/16
BF-062-2L	.62	7/16	.25	.752	1/8 (M)	1/16
BF-110-2L	.62	7/16	.25	.936	1/8 (M)	5/64
BF-140-2L	.625	7/16	.25	.815	1/8 (M)	1/8
BF-170-2FL	.50	9/16	.50	-	1/8 (F)	.170
BF-170-2L	.62	7/16	.25	.938	1/8 (M)	.170



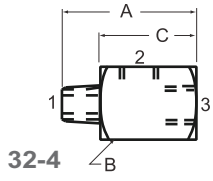
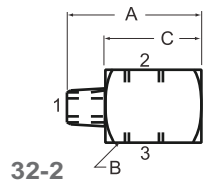
All dimensions and specifications are subject to change without notice

Elbow Reducing



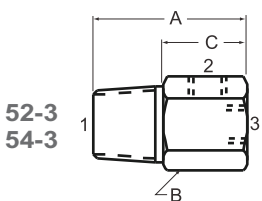
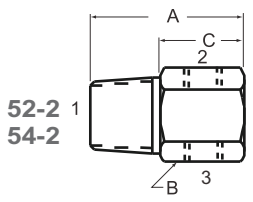
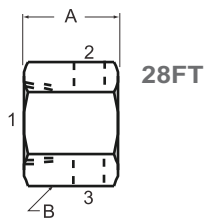
Part Number	A	B Hex	C	1	2
28FL	.50	9/16	-	1/8 (F)	10-32 (F)
29L	.85	11/16	.48	3/8 (M)	10-32 (F)
52-1	.81	7/16	.44	1/8 (M)	10-32 (F)
54-1	.87	9/16	.37	1/4 (M)	10-32 (F)

Tee



Part Number	A	B Square	C	1	2	3
32-2	.70	3/8	.50	10-32 (M)	10-32 (F)	10-32 (F)
32-4	.70	3/8	.50	10-32 (M)	10-32 (F)	10-32 (F)

Tee Reducing

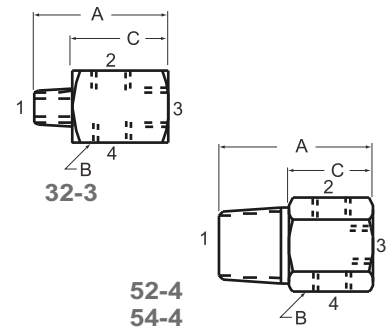


Part Number	A	B Hex	C	1	2	3
28FT	.50	9/16	-	1/8 (F)	10-32 (F)	10-32 (F)
52-2	.81	7/16	.44	1/8 (M)	10-32 (F)	10-32 (F)
52-3	.90	7/16	.53	1/8 (M)	10-32 (F)	10-32 (F)
54-2	.87	9/16	.37	1/4 (M)	10-32 (F)	10-32 (F)
54-3	.87	9/16	.37	1/4 (M)	10-32 (F)	10-32 (F)

All dimensions and specifications are subject to change without notice

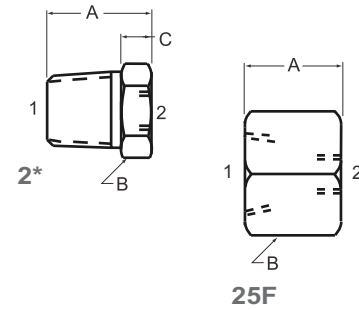
Part Number	A	B	C	1	2, 3, 4	Crosses
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32-3	.70	3/8 Square	.50	10-32 (M)	10-32 (F)
52-4	.90	7/16 Hex	.53	1/8 (M)	10-32 (F)
54-4	.87	9/16 Hex	.37	1/4 (M)	10-32 (F)



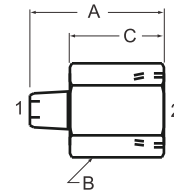
Part Number	A	B Hex	C	1	2	Reducer Bushing
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25	.53	7/16	.16	1/8 (M)	10-32 (F)
25F	.50	7/16	.50	1/8 (F)	10-32 (F)
26	.68	9/16	.18	1/4 (M)	10-32 (F)
27	.41	3/8	.14	1/16 (M)	10-32 (F)



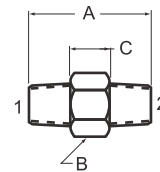
Part Number	A	B Hex	C	1	2	Adapters
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34	.70	7/16	.50	10-32 (M)	1/8 (F)
34A	.75	7/16	.50	1/16 (M)	1/8 (F)



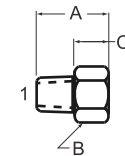
Part Number	A	B Hex	C	1, 2	Nipple
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33	.56	1/4	.16	10-32 (M)
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Part Number	A	B Hex	C	1	Plug
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30	.37	1/4	.17	10-32 (M)
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All dimensions and specifications are subject to change without notice

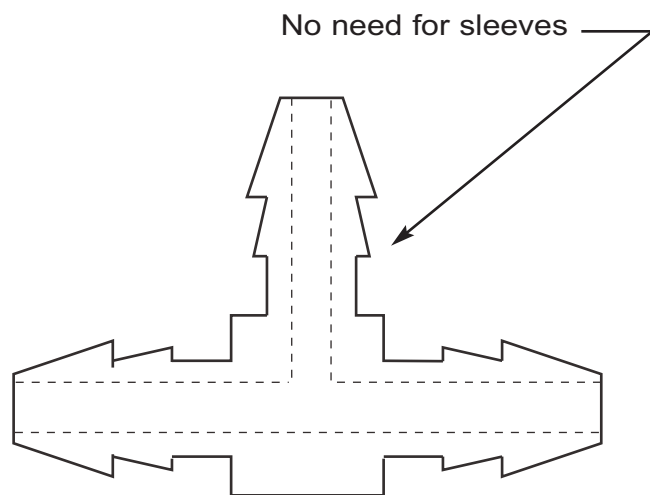
Features

- Precision machined for 1/8", 5/32", 1/4" tubing
- Eliminates the need for sleeves
- Electroless Nickel plated



Barb-to-Barb Fittings

Pneumadyne's Barb-to-Barb fittings are high quality, durable brass barbs with the sharpness required to maintain connection even in high pressure and vibration applications. The electroless nickel plated barbed fittings are offered in a variety of sizes and configurations.



Electroless Nickel plated for corrosion resistance

We design custom products to meet your application needs.

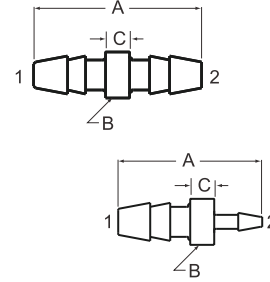
- Please refer to [Fitting Specifications and Flow Rate information](#)

Ordering Information

- To order standard product use part number listing.
- Standard package quantities:
 - 25 pcs per bag
 - 100 pcs per box

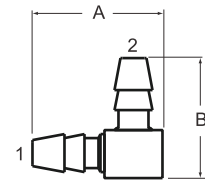
Part Number	A	B Diam.	C	1 Tubing ID	2 Tubing ID
SBF-1616	.63	.125	.125	1/16	1/16
SBF-1810	.73	.25	.125	.170	5/64
SBF-1816	.75	.25	.125	.170	1/16
SBF-1818	.88	.25	.125	.170	.170

Barb-to-Barb
Couplings



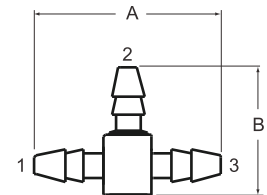
Part Number	A	B	1 Tubing ID	2 Tubing ID
SBF-18L	.78	.63	.170	.170

Barb-to-Barb
Elbow



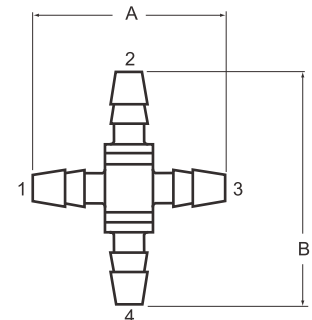
Part Number	A	B	1 Tubing ID	2 Tubing ID	3 Tubing ID
SBF-10T	.72	.78	5/64	5/64	5/64
SBF-14T	.876	.721	1/8	1/8	1/8
SBF-1410T	.87	.64	1/8	5/64	1/8
SBF-16T	.79	.47	1/16	1/16	1/16
SBF-18T	1.00	.78	.170	.170	.170
SBF-1810T	1.00	.64	.170	5/64	.170
SBF-1816T	1.00	.66	.170	1/16	.170

Barb-to-Barb
Tee



Part Number	A	B	1,3 Tubing ID	2,4 Tubing ID
SBF-18X	1.00	1.21	.170	.170

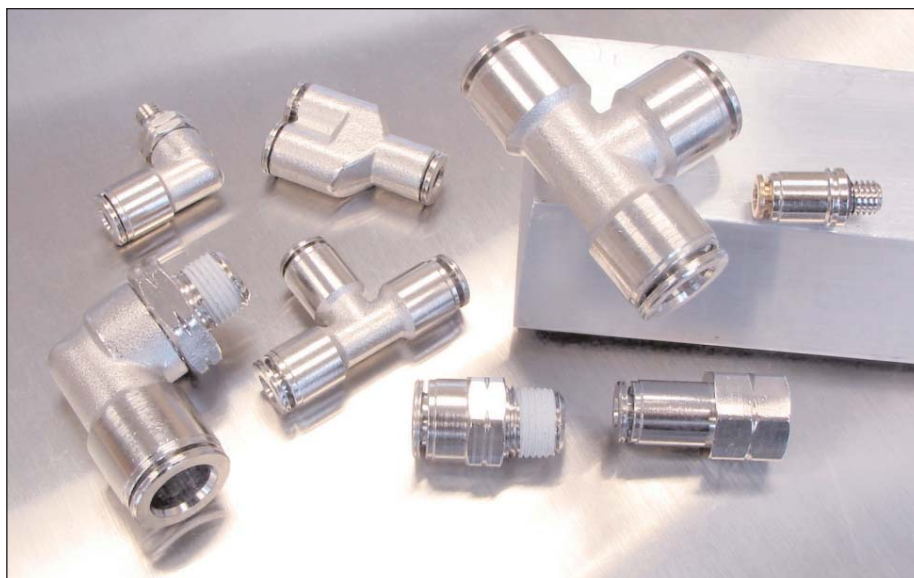
Barb-to-Barb
Cross



All dimensions and specifications are subject to change without notice

Features

- 1/8 to 3/8 tube OD
- Electroless nickel plated brass and 316 stainless steel
- Several sizes and configurations
- Swivel elbows and tees
- Metal release buttons
- O-ring seal (10-32 UNF fittings only)



Pneumadyne's Push-to-Connect Fittings

Pneumadyne's new Push-to-Connect fittings enable quick tubing connection and disconnection. A variety of male and female connectors, elbows and tees feature tube ODs ranging from 1/8 to 3/8 and 10-32, 1/8 NPT or 1/4 NPT threads. To ensure a leakproof fit, thread sealant is standard on all male pipe threads and the 10-32 UNF thread features an o-ring for a superior seal.

The 316L stainless steel fittings are suitable for applications in corrosive environments where brass and Acetal are typically prohibited. FPM seals ensure that these fittings can also withstand high temperatures (working temperature is dependent upon tubing).

Tubing connection and tightness are made possible by the presence of a stainless steel gripping collet and an O-ring inside the fitting. Once the

tube is inserted to the bottom of the fitting, the stainless steel collet grips the tube and prevents it from being released. The tubing is disconnected by simply pushing the metal release button and removing the tube from the fitting.

Materials

Brass: Electroless Nickel Plated Brass, Acetal Resin, Stainless Steel, NBR

Stainless Steel: 316L Stainless Steel, 301 Stainless Steel, FPM/FKM

Tubing Recommendation Chart

Fitting Material	Tubing Material
Brass	95A Durometer Polyurethane
Stainless Steel	PTFE, PVDF

Pneumadyne's Stainless Steel Fittings are suitable for use in industries such as:

- ***Food & Beverage***
- ***Medical & Dental***
- ***Semi-Conductor***
- ***Pharmaceutical***
- ***Agriculture***
- ***Chemical processing***

PUSH-TO-CONNECT FITTINGS



Thread sealant, standard on male pipe threads, ensures a leakproof fit. 10-32 UNF threads feature an O-ring for a superior seal.

Swivel fittings are ideal for tubing alignment.



For limited space applications, the male straight connector features an inner hex allowing for easy installation.



Multiple configurations ease fitting installation.

Product Number Diagram

Push-to-Connect Fittings

P B 1 5 6 - 1 / 8 - 3 1 6

Fitting Configuration

- PB= Male Connector
- PFB= Female Connector
- PFLS= EL Female
- PLS=EL Swivel
- PTS= Tee Swivel
- PT= Union Tee
- PY= Union Y

Tube OD

- 125= 1/8
- 156= 5/32
- 250= 1/4
- 312= 5/16
- 375= 3/8

Thread Size

- 1032= 10-32 UNF
- 1/8= 1/8 NPT
- 1/4= 1/4 NPT

Suffix

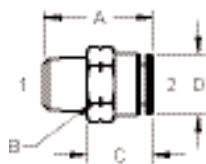
- 316= Stainless Steel

Please use Part Number Listing to verify part number- not all configurations are possible

Ordering Information

- To order standard product use part number listing.
- For 316 Stainless Steel add a -316 suffix to the part number.
- Standard package quantities:
-5 pcs per bag, Electroless Nickel Brass
-1 pc per bag, 316L SS

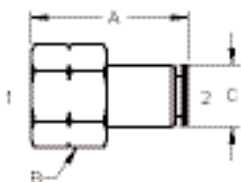
Straight Connector



Part Number	A	B Hex	C	D	1	2 Tubing OD
PB125-1032	0.649	5/16	0.453	0.275	10-32 (M)	1/8
PB125-1/8	0.728	7/16	0.394	0.275	1/8 (M)	1/8
PB156-1032	0.767	3/8	0.571	0.354	10-32 (M)	5/32
PB156-1/8	0.748	7/16	0.414	0.354	1/8 (M)	5/32
PB250-1032	0.925	3/32	.728	.472	10-32 (M)	1/4
PB250-1/8	0.846	1/2	0.512	0.472	1/8 (M)	1/4
PB375-1/8	1.082	11/16	0.748	0.629	1/8 (M)	3/8

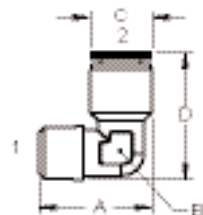
Straight Connector

Female



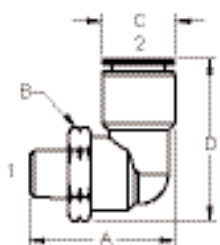
Part Number	A	B Hex	C	1	2 Tubing OD
PFB156-1/8	0.964	9/16	0.354	1/8 (F)	5/32
PFB250-1/8	1.043	9/16	0.472	1/8 (F)	1/4
PFB250-1/4	1.220	11/16	0.472	1/4 (F)	1/4

Elbow Fixed



Part Number	A	B Flats	C	D	1	2 Tubing OD
PLB156-1/8	0.787	0.314	0.354	0.877	1/8 (M)	5/32
PLB250-1/8	0.865	0.393	0.472	0.995	1/8 (M)	1/4
PLB312-1/8	0.945	0.472	0.551	1.054	1/8 (M)	5/16

Elbow Swivel



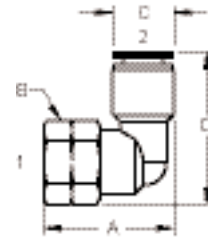
Part Number	A	B Hex	C	D	1	2 Tubing OD
PLS125-1/8	0.866	7/16	0.275	0.823	1/8 (M)	1/8
PLS156-1032	0.826	3/8	0.354	0.886	10-32 (M)	5/32
PLS156-1/8	0.905	7/16	0.354	0.922	1/8 (M)	5/32
PLS250-1/8	1.062	1/2	0.472	1.135	1/8 (M)	1/4
PLS375-1/8	1.259	11/16	0.629	1.381	1/8 (M)	3/8

When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

Part Number	A	B Hex	C	D	1	2 Tubing OD
PFLS156-1/8	0.944	9/16	0.354	1.073	1/8 (F)	5/32
PFLS250-1/8	1.003	9/16	0.472	1.171	1/8 (F)	1/4
PFLS312-1/8	1.043	9/16	0.551	1.191	1/8 (F)	5/16

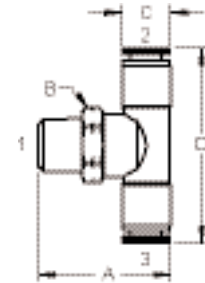
Elbow Swivel

Female



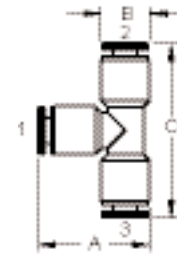
Part Number	A	B Hex	C	D	1	2,3 Tubing OD
PTS156-1/8	1.003	1/2	0.354	1.496	1/8 (M)	5/32
PTS250-1/8	1.062	1/2	0.472	1.692	1/8 (M)	1/4

Tee Swivel



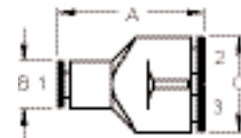
Part Number	A	B	C	1, 2, 3 Tubing OD
PT156	0.846	0.354	1.338	5/32
PT250	1.023	0.472	1.574	1/4
PT312	1.122	0.551	1.692	5/16

Tee Union



Part Number	A	B	C	1, 2, 3 Tubing OD
PY156	1.122	0.354	0.728	5/32

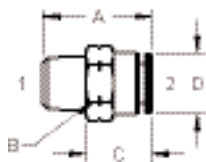
Union Y



When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

Straight Connector

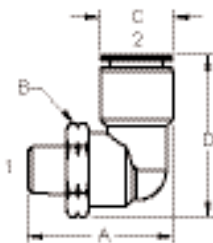
316L Stainless Steel



Part Number	A	B Hex (mm)	C	D	1	2 Tubing OD
PB156-1/8-316	0.748	11	0.414	0.354	1/8 (M)	5/32
PB250-1/8-316	0.846	13	0.512	0.472	1/8 (M)	1/4

Elbow Swivel

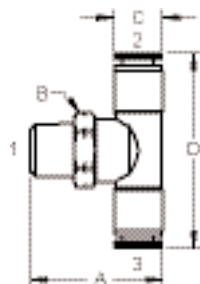
316L Stainless Steel



Part Number	A	B Hex (mm)	C	D	1	2 Tubing OD
PLS156-1/8-316	0.905	11	0.354	0.922	1/8 (M)	5/32
PLS250-1/8-316	1.062	13	0.472	1.135	1/8 (M)	1/4

Tee Swivel

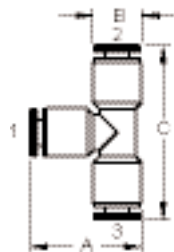
316L Stainless Steel



Part Number	A	B Hex (mm)	C	D	1	2, 3 Tubing OD
PTS156-1/8-316	1.003	11	0.354	1.496	1/8 (M)	5/32
PTS250-1/8-316	1.062	13	0.472	1.692	1/8 (M)	1/4

Tee Union

316L Stainless Steel



Part Number	A	B	C	1, 2, 3 Tubing OD
PT156-316	0.846	0.354	1.338	5/32
PT250-316	1.023	0.472	1.574	1/4
PT312-316	1.122	0.551	1.692	5/16

When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

FPM seals withstand high temperatures- SS Fittings only
(working temperature is dependent upon tubing)



Features

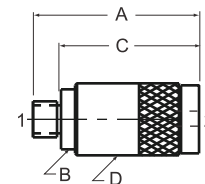
- Push-to-connect
- Precision machined
- Acetal release button
- Captured o-ring seal
- Electroless Nickel plated

Push-to-Connect style fittings ease tubing connection and disconnection without the use of tools. Recommended for use with 95A Durometer Polyurethane tubing, these precision machined fittings are Electroless nickel plated for corrosion resistance. Red Acetal release buttons are standard, contact factory for optional colors.

Push-to-Connect Straight Connector Fittings

Part Number	A	B Diam.	C	D Diam.	1	2 Tube OD
SF-125PI	.88	.32	.72	.38	10-32 (M)	1/8
SF-156PI	.88	.32	.72	.38	10-32 (M)	5/32

Push-to-Connect



Materials

Brass, Electroless Nickel Plating, Acetal, Buna-N Seals

Ordering Information

- Standard quantities
 - 25 pcs per bag
 - 100 pcs per box
- Red release button standard; contact factory for optional colors
- 95A Durometer Polyurethane recommended
- Cavity drawing available for **full** cartridge- contact factory
- **Half** cartridge is available for direct installation- contact factory



Captured O-ring



Standard Tapered
Thread sizes available

Fitting Specifications

Performance Data

Temperature Range	Operating Pressure	Media
-20° to 160° F -28° to 71° C	Vacuum to 125 psi	Fluids compatible w/ seals

Flow Rate- Typical

Standard Double Barb

Barb Size	Tube ID (PUR)	C _v	Flow Rate (scfm)	
			50 psi	125 psi
062	1/16	0.06	1.8	4.0
110	5/64 or 2.4mm	0.20	5.2	12.0
140	1/8	0.20	5.2	12.0
170 O-ring	.170	0.28	7.3	16.5
170 Tapered	.170	0.40	10.5	23.5

Pneu-Edge®

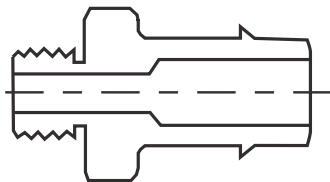
Barb Size	Tube ID (PUR)	C _v	Flow Rate (scfm)	
			50 psi	125 psi
10	1/16	0.08	2.4	5.5
20	5/64	0.09	2.8	6.8
25	3/32	0.18	5.0	12.0
30	1/8	0.24	6.0	14.5
35	5/32	0.31	7.8	19.0
40	.170	0.48	11.5	27.0
50	3/16	0.60	14.0	33.0
60	1/4	1.07	22.0	52.0
70	5/16	1.62	35.0	82.0
80	3/8	3.40	59.0	140.0

Additional Recommendation: Pneu-Edge fittings ensure permanent polyurethane tubing installation without the need for clamps. However, we recommend the use of clamps in applications over 80 psi which also involve heat or vibration.

- All Flow Rates are approximate

Flow Rate- Atypical

Pneu-Edge® fittings ease installation by offering larger barbs on miniature threads. This configuration lowers the rate of flow. Please refer to the listing below for atypical dimensions and data.



Barb ID does not necessarily determine flow rate



Ten thread sizes available



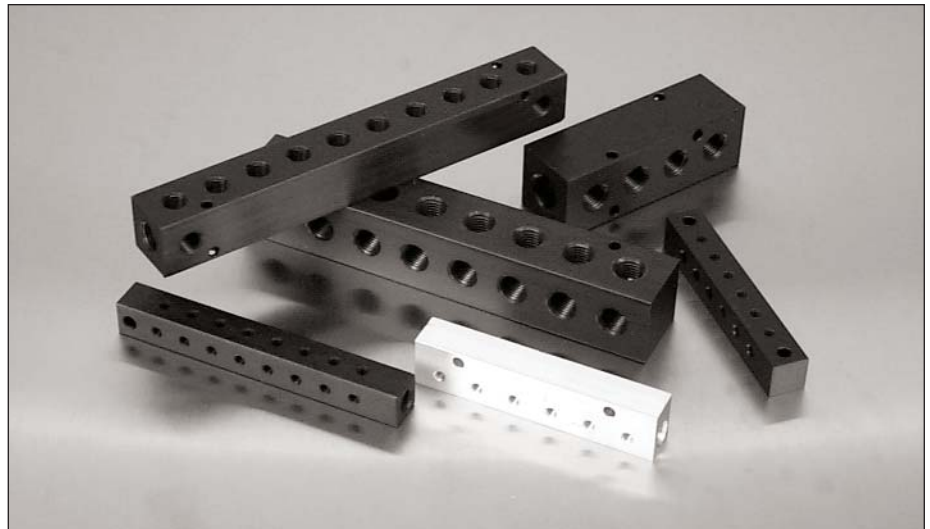
Consistently sharp barbs

Part Number	Tube ID (PUR)	Cv	Flow Rate (scfm) psi	
			50	125
EB35	5/32	.28	7.3	16.5
EB40	.170	.28	7.3	16.5
EB50	3/16	.28	7.3	16.5
EB60	1/4	.28	7.3	16.5
EB40-250	.170	.28	7.3	16.5
EB40-4-28	.170	.48	11.5	27.0
EB50-4-28	3/16	.48	11.5	27.0
EB60-4-28	1/4	.48	11.5	27.0
EB10-M3	1/16	.06	1.8	4.0
EB20-M3	5/64	.06	1.8	4.0
EB25-M3	3/32	.06	1.8	4.0
EB30-M3	1/8	.06	1.8	4.0
EB40-M3	.170	.06	1.8	4.0
EB40-M5	.170	.28	7.3	16.5
ELB35	5/32	.28	7.3	16.5
ELB40	.170	.28	7.3	16.5
ELB50-4-28	3/16	.48	11.5	27.0
ELB10-M3	1/16	.06	1.8	4.0
ELB20-M3	5/64	.06	1.8	4.0
ELB25-M3	3/32	.06	1.8	4.0
ELB30-M3	1/8	.06	1.8	4.0
ELB40-M3	.170	.06	1.8	4.0
ELB40-M5	.170	.28	7.3	16.5
ELB50-M6	3/16	.48	11.5	27.0

Part Number	Tube ID (PUR)	Cv	Flow Rate (scfm) psi	
			50	125
EA-LB40	.170	.40	10.5	23.5
EA-LB50	3/16	.40	10.5	23.5
EA-LB40-SLOT	.170	.40	10.5	23.5
EA-LB50-SLOT	3/16	.40	10.5	23.5
ETB35	5/32	.28	7.3	16.5
ETB40	.170	.28	7.3	16.5
ET50-4-28	3/16	.48	11.5	27.0
ET10-M3	1/16	.06	1.8	4.0
ET20-M3	5/64	.06	1.8	4.0
ET25-M3	3/32	.06	1.8	4.0
ET30-M3	1/8	.06	1.8	4.0
ET40-M3	.170	.06	1.8	4.0
ET40-M5	.170	.28	7.3	16.5
ET50-M6	3/16	.48	11.5	27.0
EA-T40	.170	.40	10.5	23.5
EA-T50	3/16	.40	10.5	23.5
EA-T40-SLOT	.170	.40	10.5	23.5
EA-T50-SLOT	3/16	.40	10.5	23.5

Features

- 2 to 10 stations
- Inline Manifolds, 90° Manifolds, Dual Air, Junction Blocks and Terminal Blocks
- Custom designs
- 1.5" center-to-center spacing available
- Variety of port sizes



Multiple Connection Manifolds

Manifolds provide a convenient junction point for the distribution of fluids or gases. Simply thread fittings into the ports to produce an organized method of supplying multiple lines from a single source.

Our aluminum manifolds go through a controlled oxidation process called anodizing which produces a non-conductive coating that provides corrosion and wear resistance. A black dye is added to the anodize solution to create our signature appearance however there are over thirty colors of anodic coatings available.

Performance Data

Operating Pressure

1000 psi non-shock- air, 3000 psi non-shock- hydraulic

Port Options

Definition	Options
Input	<ul style="list-style-type: none"> <li style="width: 50%;">● 1/8 NPT (F) <li style="width: 50%;">● 3/4 NPT (F) <li style="width: 50%;">● 1/4 NPT (F) <li style="width: 50%;">● 1/2 NPT (F) <li style="width: 50%;">● 3/8 NPT (F)
Output	<ul style="list-style-type: none"> <li style="width: 50%;">● 10-32 (F) <li style="width: 50%;">● 1/4 NPT (F) <li style="width: 50%;">● 1/8 NPT (F) <li style="width: 50%;">● 3/8 NPT (F)

Materials

Brass, Aluminum/ Black Anodize, 303 Stainless Steel, Polypropylene, Nylon

Product Number Diagram Manifolds

M 20 - 1 25 - 5 - 90 W

Product Line

- DA= Dual Air
- JB= Junction Block
- M= Manifold
- MS= Manifold with porting on *two* sides
- MT= Manifold with porting on *three* sides
- TB= Terminal Block

Input

- 32= 10-32 (F)
- 10= 1/4 NPT (F)
- 20= 3/8 NPT (F)
- 30= 1/2 NPT (F)
- 35= 3/4 NPT (F)

Output

- 125= 1/8 NPT (F)
- 250= 1/4 NPT (F)
- 375= 3/8 NPT (F)

Suffix

- 90= Output ports at 90°/1" standard spacing
- 90W= Output ports at 90°/1.5" spacing
- BRS= Material: Brass
- SS= Material: 303 Stainless Steel
- PPN= Material: Polypropylene Natural
- NYN= Material: Nylon Natural

Number of Stations

- (Digit indicates number of stations)
- #= Select 1-10 /1" standard spacing
- #W= Select 1-10 /1.5" output spacing eg: 5W

Please use Product Information Listings to verify part number- not all configurations are possible

Example:

Manifold with 3/8 Input and 1/8 Output Ports at 90° with 1.5" spacing



Numerous styles and configurations available- customs welcome

Pneumadyne has been an innovator in the design and manufacture of pneumatic and hydraulic manifolds since 1976

Performance Data

Material	Operating Pressure at 72°F	Temp Range	Corrosion Resistance	Chemical Resistance	Durability	For Use With
Aluminum 6061	1000 psi non-shock air, 3000 psi non-shock hydraulic	-10° to 200° F	Good	Fair	Good	Air, water, natural gas, hydraulic oils, gasoline
Brass	2000 psi	-65° to 250° F	Good	Good	Excellent	Air, water, hydraulic oils
Stainless Steel 303	3500 psi	-100° to 500° F	Excellent	Good	Excellent	Air, water, hydraulic oils
Polypropylene	150 psi	32° to 230° F	Fair	Poor	Fair	Air, water
Nylon	200 psi	-60° to 200° F	Good	Fair	Fair	Air, water

Ordering Information

- To order standard product use part number listing.
- 1/8" and 5/32" push-to-connect fittings are available for use with standard 10-32 manifolds.
- To order New Material Manifolds replace the "*" in the part number listing with the desired material abbreviation.
 SS= 303 Stainless Steel
 BRS= Brass
 NYN= Nylon
 PPN= Polypropylene



- 10-32 output ports
- 3 Porting configurations
- Convenient junction point
- Multiple branches
- One input

Inline Manifolds

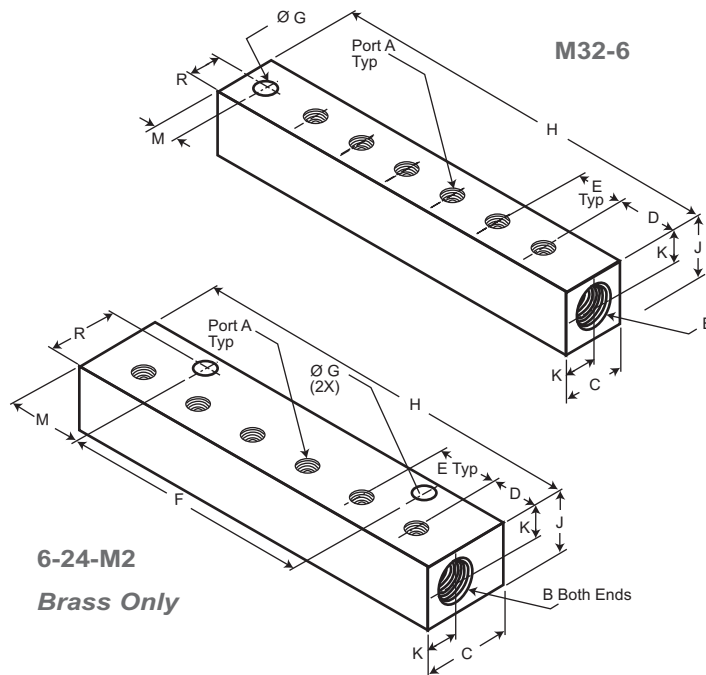
Port Options

Input

- 1/8 NPT (F)

Output

- 10-32 UNF(F)

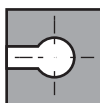


Port Configuration

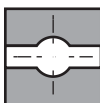
Cross Section

Part Number

M32-*



MS32-*



MT32-*



Product Information

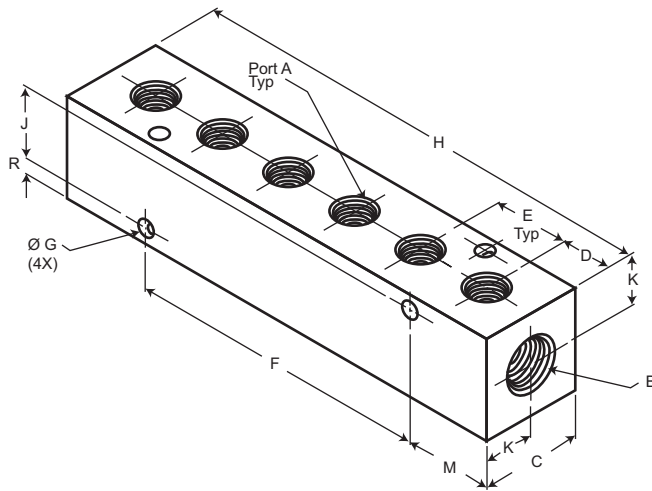
1/8 NPT (F) Input x 10-32 (F) Output

Part Number	No. of Stations	A	NPT B	C	D	E	F	G	H	J	K	M	R
6-24-M2	6	10-32	1/8	.88	.44	.63	2.50	.20	4.00	.63	.32	.75	.72
Porting on one side													
M32-4	4	10-32	1/8	.625	.75	.50	-	.22	3.00	.62	.31	.25	.31
M32-6	6	10-32	1/8	.625	.75	.50	-	.22	4.00	.62	.31	.25	.31
M32-8	8	10-32	1/8	.625	.75	.50	-	.22	5.00	.62	.31	.25	.31
M32-10	10	10-32	1/8	.625	.75	.50	-	.22	6.00	.62	.31	.25	.31
Porting on two sides													
MS32-4	8	10-32	1/8	.625	.75	.50	-	.22	3.00	.62	.31	.25	.31
MS32-6	12	10-32	1/8	.625	.75	.50	-	.22	4.00	.62	.31	.25	.31
MS32-8	16	10-32	1/8	.625	.75	.50	-	.22	5.00	.62	.31	.25	.31
MS32-10	20	10-32	1/8	.625	.75	.50	-	.22	6.00	.62	.31	.25	.31
Porting on three sides													
MT32-4	12	10-32	1/8	.625	.75	.50	-	.22	3.00	.62	.31	.25	.31
MT32-6	18	10-32	1/8	.625	.75	.50	-	.22	4.00	.62	.31	.25	.31
MT32-8	24	10-32	1/8	.625	.75	.50	-	.22	5.00	.62	.31	.25	.31
MT32-10	30	10-32	1/8	.625	.75	.50	-	.22	6.00	.62	.31	.25	.31

All measurements are given in inches unless otherwise specified.

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

Inline Manifolds



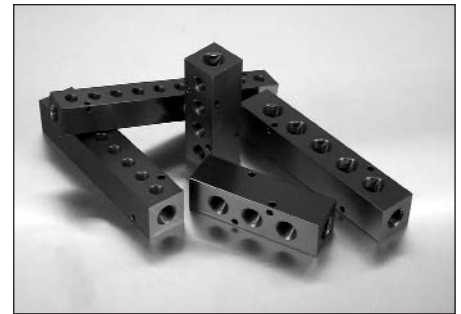
Port Options

Input

- 1/4 NPT (F)
- 3/8 NPT (F)

Output

- 1/8 NPT (F)



- Convenient junction point
- Multiple branches
- Two input ports
- Aluminum with black anodizing for corrosion resistance and appearance
- Mounting versatility

Product Information

1/4 NPT (F) Input x 1/8 NPT (F) Output

Part Number	No. of Stations	NPT A	NPT B	C	D	E	F	G	H	J	K	M	R
M10-125-2	2	1/8	1/4	1.00	.50	.75	N/A	.17	1.75	.70	.50	.88	.15
M10-125-3	3	1/8	1/4	1.00	.50	.75	.75	.17	2.50	.70	.50	.88	.15
M10-125-4	4	1/8	1/4	1.00	.50	.75	1.50	.17	3.25	.70	.50	.88	.15
M10-125-5	5	1/8	1/4	1.00	.50	.75	2.25	.17	4.00	.70	.50	.88	.15
M10-125-6	6	1/8	1/4	1.00	.50	.75	3.00	.17	4.75	.70	.50	.88	.15
M10-125-7	7	1/8	1/4	1.00	.50	.75	3.75	.17	5.50	.70	.50	.88	.15
M10-125-8	8	1/8	1/4	1.00	.50	.75	4.50	.17	6.25	.70	.50	.88	.15
M10-125-9	9	1/8	1/4	1.00	.50	.75	5.25	.17	7.00	.70	.50	.88	.15
M10-125-10	10	1/8	1/4	1.00	.50	.75	6.00	.17	7.75	.70	.50	.88	.15

3/8 NPT (F) Input x 1/8 NPT (F) Output

Part Number	No. of Stations	NPT A	NPT B	C	D	E	F	G	H	J	K	M	R
M20-125-2	2	1/8	3/8	1.25	.50	.75	3.00	.20	1.75	.89	.63	.88	.18
M20-125-3	3	1/8	3/8	1.25	.50	.75	3.00	.20	2.50	.89	.63	.88	.18
M20-125-4	4	1/8	3/8	1.25	.50	.75	1.50	.20	3.25	.89	.63	.88	.18
M20-125-5	5	1/8	3/8	1.25	.50	.75	3.00	.20	4.00	.89	.63	.88	.18
M20-125-6	6	1/8	3/8	1.25	.50	.75	3.00	.20	4.75	.89	.63	.88	.18
M20-125-7	7	1/8	3/8	1.25	.50	.75	3.00	.20	5.50	.89	.63	.88	.18
M20-125-8	8	1/8	3/8	1.25	.50	.75	4.50	.20	6.25	.89	.63	.88	.18
M20-125-9	9	1/8	3/8	1.25	.50	.75	3.00	.20	7.00	.89	.63	.88	.18
M20-125-10	10	1/8	3/8	1.25	.50	.75	6.00	.20	7.75	.89	.63	.88	.18

- Measurements in inches

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

Push-to-Connect fittings (sold separately) simplify tube installation



Pneumadyne offers a wide selection of pneumatic components ideal for use on our multiple connection manifolds

Inline Manifolds

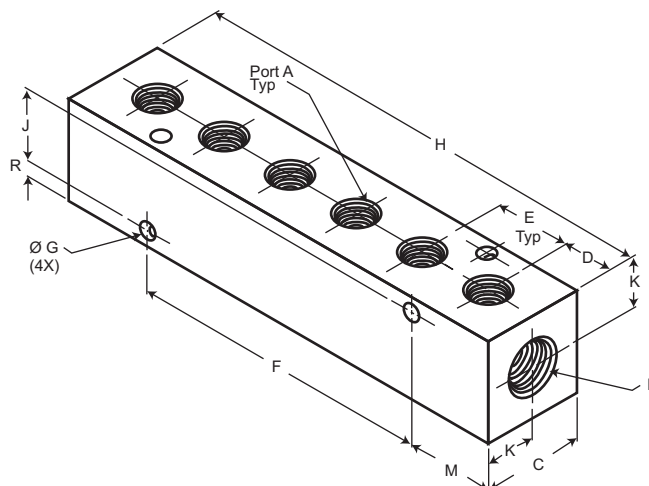
Port Options

Input

- 3/8 NPT (F)

Output

- 1/4 NPT (F)
- 3/8 NPT (F)



Product Information

3/8 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M20-250-2	2	1/4	3/8	1.25	.63	.88	N/A	.20	2.13	.89	.63	1.06	.18
M20-250-3	3	1/4	3/8	1.25	.63	.88	.88	.20	3.00	.89	.63	1.06	.18
M20-250-4	4	1/4	3/8	1.25	.63	.88	1.75	.20	3.88	.89	.63	1.06	.18
M20-250-5	5	1/4	3/8	1.25	.63	.88	2.63	.20	4.75	.89	.63	1.06	.18
M20-250-6	6	1/4	3/8	1.25	.63	.88	3.50	.20	5.63	.89	.63	1.06	.18
M20-250-7	7	1/4	3/8	1.25	.63	.88	4.38	.20	6.50	.89	.63	1.06	.18
M20-250-8	8	1/4	3/8	1.25	.63	.88	5.25	.20	7.38	.89	.63	1.06	.18
M20-250-9	9	1/4	3/8	1.25	.63	.88	6.13	.20	8.25	.89	.63	1.06	.18
M20-250-10	10	1/4	3/8	1.25	.63	.88	7.00	.20	9.13	.89	.63	1.06	.18

3/8 NPT (F) Input x 3/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M20-375-2	2	3/8	3/8	1.25	1.00	1.13	N/A	.20	3.13	.89	.63	1.56	.18
M20-375-3	3	3/8	3/8	1.25	1.00	1.13	1.13	.20	4.25	.89	.63	1.56	.18
M20-375-4	4	3/8	3/8	1.25	1.00	1.13	2.25	.20	5.38	.89	.63	1.56	.18
M20-375-5	5	3/8	3/8	1.25	1.00	1.13	3.38	.20	6.50	.89	.63	1.56	.18
M20-375-6	6	3/8	3/8	1.25	1.00	1.13	4.50	.20	7.63	.89	.63	1.56	.18
M20-375-7	7	3/8	3/8	1.25	1.00	1.13	5.63	.20	8.75	.89	.63	1.56	.18
M20-375-8	8	3/8	3/8	1.25	1.00	1.13	6.75	.20	9.88	.89	.63	1.56	.18
M20-375-9	9	3/8	3/8	1.25	1.00	1.13	7.88	.20	11.00	.89	.63	1.56	.18
M20-375-10	10	3/8	3/8	1.25	1.00	1.13	9.00	.20	12.13	.89	.63	1.56	.18



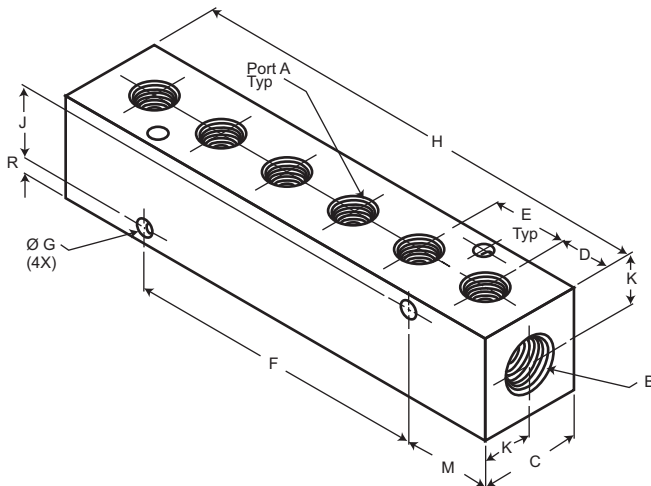
System 11 is a unique valve consolidation method using custom manifolds that house components for use only on System 11 manifolds
[\(Click for additional information\)](#)

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

* Number of stations

● Measurements in inches

Inline Manifolds



Port Options

Input

- 1/2 NPT (F)

Output

- 1/4 NPT (F)
- 3/8 NPT (F)

Product Information

1/2 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M30-250-2	2	1/4	1/2	1.50	.88	1.00	N/A	.20	2.75	1.12	.75	1.38	.19
M30-250-3	3	1/4	1/2	1.50	.88	1.00	1.00	.20	3.75	1.12	.75	1.38	.19
M30-250-4	4	1/4	1/2	1.50	.88	1.00	2.00	.20	4.75	1.12	.75	1.38	.19
M30-250-5	5	1/4	1/2	1.50	.88	1.00	3.00	.20	5.75	1.12	.75	1.38	.19
M30-250-6	6	1/4	1/2	1.50	.88	1.00	4.00	.20	6.75	1.12	.75	1.38	.19
M30-250-7	7	1/4	1/2	1.50	.88	1.00	5.00	.20	7.75	1.12	.75	1.38	.19
M30-250-8	8	1/4	1/2	1.50	.88	1.00	6.00	.20	8.75	1.12	.75	1.38	.19
M30-250-9	9	1/4	1/2	1.50	.88	1.00	7.00	.20	9.75	1.12	.75	1.38	.19
M30-250-10	10	1/4	1/2	1.50	.88	1.00	8.00	.20	10.75	1.12	.75	1.38	.19

1/2 NPT (F) Input x 3/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M30-375-2	2	3/8	1/2	1.50	.88	1.00	N/A	.20	2.75	1.12	.75	1.38	.19
M30-375-3	3	3/8	1/2	1.50	.88	1.00	1.00	.20	3.75	1.12	.75	1.38	.19
M30-375-4	4	3/8	1/2	1.50	.88	1.00	2.00	.20	4.75	1.12	.75	1.38	.19
M30-375-5	5	3/8	1/2	1.50	.88	1.00	3.00	.20	5.75	1.12	.75	1.38	.19
M30-375-6	6	3/8	1/2	1.50	.88	1.00	4.00	.20	6.75	1.12	.75	1.38	.19
M30-375-7	7	3/8	1/2	1.50	.88	1.00	5.00	.20	7.75	1.12	.75	1.38	.19
M30-375-8	8	3/8	1/2	1.50	.88	1.00	6.00	.20	8.75	1.12	.75	1.38	.19
M30-375-9	9	3/8	1/2	1.50	.88	1.00	7.00	.20	9.75	1.12	.75	1.38	.19
M30-375-10	10	3/8	1/2	1.50	.88	1.00	8.00	.20	10.75	1.12	.75	1.38	.19

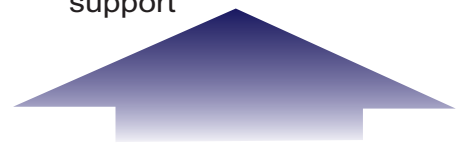
* Number of stations

- Measurements in inches

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- Review industry related solutions
- Request technical support



Pneumadyne has been an innovator in the design and manufacture of manifolds since 1976

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



Stainless steel manifolds are ideal for use in highly corrosive environments

Inline Manifolds

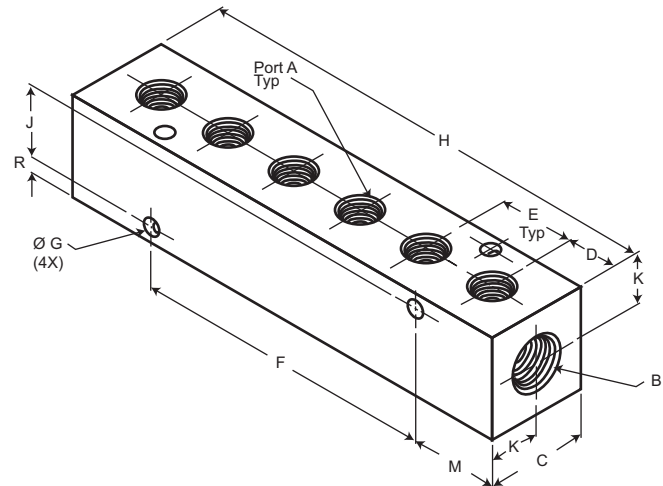
Port Options

Input

- 3/4 NPT (F)

Output

- 1/4 NPT (F)
- 3/8 NPT (F)



Product Information

3/4 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M35-250-2	2	1/4	3/4	1.50	1.75	0.88	1.88	.20	4.38	1.14	.75	1.25	.18
M35-250-3	3	1/4	3/4	1.50	1.75	0.88	2.75	.20	5.25	1.14	.75	1.25	.18
M35-250-4	4	1/4	3/4	1.50	1.75	0.88	3.63	.20	6.13	1.14	.75	1.25	.18
M35-250-5	5	1/4	3/4	1.50	1.75	0.88	4.50	.20	7.00	1.14	.75	1.25	.18
M35-250-6	6	1/4	3/4	1.50	1.75	0.88	5.38	.20	7.88	1.14	.75	1.25	.18
M35-250-7	7	1/4	3/4	1.50	1.75	0.88	6.25	.20	8.75	1.14	.75	1.25	.18
M35-250-8	8	1/4	3/4	1.50	1.75	0.88	7.13	.20	9.63	1.14	.75	1.25	.18
M35-250-9	9	1/4	3/4	1.50	1.75	0.88	8.00	.20	10.50	1.14	.75	1.25	.18
M35-250-10	10	1/4	3/4	1.50	1.75	0.88	8.88	.20	11.38	1.14	.75	1.25	.18

3/4 NPT (F) Input x 3/8 NPT (F) Output

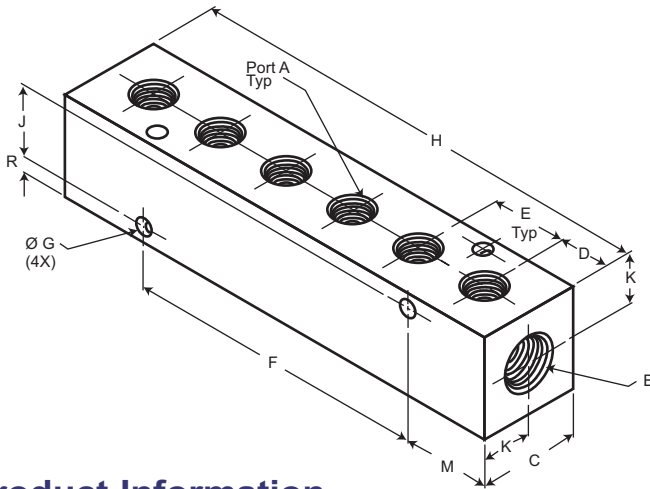
Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M35-375-2	2	3/8	3/4	1.50	1.75	1.13	2.13	.20	4.63	1.14	.75	1.25	.18
M35-375-3	3	3/8	3/4	1.50	1.75	1.13	3.25	.20	5.75	1.14	.75	1.25	.18
M35-375-4	4	3/8	3/4	1.50	1.75	1.13	4.38	.20	6.88	1.14	.75	1.25	.18
M35-375-5	5	3/8	3/4	1.50	1.75	1.13	5.50	.20	8.00	1.14	.75	1.25	.18
M35-375-6	6	3/8	3/4	1.50	1.75	1.13	6.63	.20	9.13	1.14	.75	1.25	.18
M35-375-7	7	3/8	3/4	1.50	1.75	1.13	7.75	.20	10.25	1.14	.75	1.25	.18
M35-375-8	8	3/8	3/4	1.50	1.75	1.13	8.88	.20	11.38	1.14	.75	1.25	.18
M35-375-9	9	3/8	3/4	1.50	1.75	1.13	10.00	.20	12.50	1.14	.75	1.25	.18
M35-375-10	10	3/8	3/4	1.50	1.75	0.88	11.13	.20	13.63	1.14	.75	1.25	.18

* Number of stations

● Measurements in inches

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

Inline Manifolds-New Materials



Port Options

Input

- 1/4 NPT (F)
- 3/8 NPT (F)

Output

- 1/8 NPT (F)
- 1/4 NPT (F)



- 2 to 10 stations
- Two input ports
- Convenient junction point
- Variety of port sizes

Product Information

1/4 NPT (F) Input x 1/8 NPT (F) Output

Part Number	No. of Stations	A	NPT B	C	D	E	F	G	H	J	K	M	R
M10-125-2*	2	1/8	1/4	1.00	.50	.75	N/A	.17	1.75	.70	.50	.88	.15
M10-125-3*	3	1/8	1/4	1.00	.50	.75	.75	.17	2.50	.70	.50	.88	.15
M10-125-4*	4	1/8	1/4	1.00	.50	.75	1.50	.17	3.25	.70	.50	.88	.15
M10-125-5*	5	1/8	1/4	1.00	.50	.75	2.25	.17	4.00	.70	.50	.88	.15
M10-125-6*	6	1/8	1/4	1.00	.50	.75	3.00	.17	4.75	.70	.50	.88	.15
M10-125-7*	7	1/8	1/4	1.00	.50	.75	3.75	.17	5.50	.70	.50	.88	.15
M10-125-8*	8	1/8	1/4	1.00	.50	.75	4.50	.17	6.25	.70	.50	.88	.15
M10-125-9*	9	1/8	1/4	1.00	.50	.75	5.25	.17	7.00	.70	.50	.88	.15
M10-125-10*	10	1/8	1/4	1.00	.50	.75	6.00	.17	7.75	.70	.50	.88	.15

3/8 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	A	NPT B	C	D	E	F	G	H	J	K	M	R
M20-250-2*	2	1/4	3/8	1.25	.63	.88	N/A	.20	2.13	.89	.63	1.06	.18
M20-250-3*	3	1/4	3/8	1.25	.63	.88	.88	.20	3.00	.89	.63	1.06	.18
M20-250-4*	4	1/4	3/8	1.25	.63	.88	1.75	.20	3.88	.89	.63	1.06	.18
M20-250-5*	5	1/4	3/8	1.25	.63	.88	2.63	.20	4.75	.89	.63	1.06	.18
M20-250-6*	6	1/4	3/8	1.25	.63	.88	3.50	.20	5.63	.89	.63	1.06	.18
M20-250-7*	7	1/4	3/8	1.25	.63	.88	4.38	.20	6.50	.89	.63	1.06	.18
M20-250-8*	8	1/4	3/8	1.25	.63	.88	5.25	.20	7.38	.89	.63	1.06	.18
M20-250-9*	9	1/4	3/8	1.25	.63	.88	6.13	.20	8.25	.89	.63	1.06	.18
M20-250-10*	10	1/4	3/8	1.25	.63	.88	7.00	.20	9.13	.89	.63	1.06	.18

* Number of stations

● Measurements in inches

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

New Manifold Material

Pneumadyne's Inline Manifolds are now available in 303 Stainless Steel, Brass, Polypropylene and Nylon. The Brass and Stainless Steel manifolds are extremely durable and offered for use with air, water and hydraulic oils. Stainless Steel is also ideal for highly corrosive environments. Choose Polypropylene or Nylon when using air, water or other compatible media in lower pressure applications.

Two to 10 station manifolds are available with 1/4 or 3/8 NPT (F) input ports and 1/8 or 1/4 NPT (F) output ports. Simply thread fittings into the ports to produce an organized method of supplying multiple lines from a single source.

Ordering Information

- To order New Material Manifolds replace the "*" in the Product Information listing with the desired material abbreviation.

SS= 303 Stainless Steel

BRS= Brass

NYN= Nylon

PPN= Polypropylene

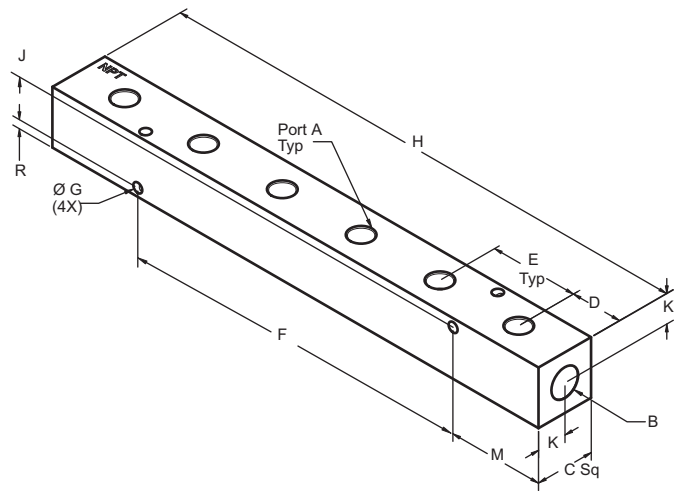


- Output port spacing is 1.5" center-to-center
- 2 to 10 stations
- Mounting versatility

Inline Manifolds- 1.5" Spacing

Port Options

- Input**
- 1/4 NPT (F)
 - 3/8 NPT (F)
 - 1/2 NPT (F)
- Output**
- 1/8 NPT (F)
 - 1/4 NPT (F)
 - 3/8 NPT (F)



Product Information

1/4 NPT (F) Input x 1/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M10-125-2W	2	1/8	1/4	1.00	.88	1.50	N/A	.17	3.25	.70	.50	1.63	.15
M10-125-3W	3	1/8	1/4	1.00	.88	1.50	1.50	.17	4.75	.70	.50	1.63	.15
M10-125-4W	4	1/8	1/4	1.00	.88	1.50	3.00	.17	6.25	.70	.50	1.63	.15
M10-125-5W	5	1/8	1/4	1.00	.88	1.50	4.50	.17	7.75	.70	.50	1.63	.15
M10-125-6W	6	1/8	1/4	1.00	.88	1.50	6.00	.17	9.25	.70	.50	1.63	.15
M10-125-7W	7	1/8	1/4	1.00	.88	1.50	7.50	.17	10.75	.70	.50	1.63	.15
M10-125-8W	8	1/8	1/4	1.00	.88	1.50	9.00	.17	12.25	.70	.50	1.63	.15
M10-125-9W	9	1/8	1/4	1.00	.88	1.50	1.50	.17	13.75	.70	.50	1.63	.15
M10-125-10W	10	1/8	1/4	1.00	.88	1.50	12.00	.17	15.25	.70	.50	1.63	.15

3/8 NPT (F) Input x 1/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M20-125-2W	2	1/8	3/8	1.25	.88	1.50	N/A	.20	3.25	.89	.63	1.63	.18
M20-125-3W	3	1/8	3/8	1.25	.88	1.50	1.50	.20	4.75	.89	.63	1.63	.18
M20-125-4W	4	1/8	3/8	1.25	.88	1.50	3.00	.20	6.25	.89	.63	1.63	.18
M20-125-5W	5	1/8	3/8	1.25	.88	1.50	4.50	.20	7.75	.89	.63	1.63	.18
M20-125-6W	6	1/8	3/8	1.25	.88	1.50	6.00	.20	9.25	.89	.63	1.63	.18
M20-125-7W	7	1/8	3/8	1.25	.88	1.50	7.50	.20	10.75	.89	.63	1.63	.18
M20-125-8W	8	1/8	3/8	1.25	.88	1.50	9.00	.20	12.25	.89	.63	1.63	.18
M20-125-9W	9	1/8	3/8	1.25	.88	1.50	1.50	.20	13.75	.89	.63	1.63	.18
M20-125-10W	10	1/8	3/8	1.25	.88	1.50	12.00	.20	15.25	.89	.63	1.63	.18

* Number of stations

- Measurements in inches

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

ISO 9001:2008 certification demonstrates Pneumadyne's commitment to quality -Received in 2004-

Product Information *Inline Manifolds-1.5" Spacing*

3/8 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M20-250-2W	2	1/4	3/8	1.25	.88	1.50	N/A	.20	3.25	.89	.63	1.63	.18
M20-250-3W	3	1/4	3/8	1.25	.88	1.50	1.50	.20	4.75	.89	.63	1.63	.18
M20-250-4W	4	1/4	3/8	1.25	.88	1.50	3.00	.20	6.25	.89	.63	1.63	.18
M20-250-5W	5	1/4	3/8	1.25	.88	1.50	4.50	.20	7.75	.89	.63	1.63	.18
M20-250-6W	6	1/4	3/8	1.25	.88	1.50	6.00	.20	9.25	.89	.63	1.63	.18
M20-250-7W	7	1/4	3/8	1.25	.88	1.50	7.50	.20	10.75	.89	.63	1.63	.18
M20-250-8W	8	1/4	3/8	1.25	.88	1.50	9.00	.20	12.25	.89	.63	1.63	.18
M20-250-9W	9	1/4	3/8	1.25	.88	1.50	1.50	.20	13.75	.89	.63	1.63	.18
M20-250-10W	10	1/4	3/8	1.25	.88	1.50	12.00	.20	15.25	.89	.63	1.63	.18

1/2 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M30-250-2W	2	1/4	1/2	1.50	.88	1.50	N/A	.20	3.25	1.12	.75	1.63	.19
M30-250-3W	3	1/4	1/2	1.50	.88	1.50	1.50	.20	4.75	1.12	.75	1.63	.19
M30-250-4W	4	1/4	1/2	1.50	.88	1.50	3.00	.20	6.25	1.12	.75	1.63	.19
M30-250-5W	5	1/4	1/2	1.50	.88	1.50	4.50	.20	7.75	1.12	.75	1.63	.19
M30-250-6W	6	1/4	1/2	1.50	.88	1.50	6.00	.20	9.25	1.12	.75	1.63	.19
M30-250-7W	7	1/4	1/2	1.50	.88	1.50	7.50	.20	10.75	1.12	.75	1.63	.19
M30-250-8W	8	1/4	1/2	1.50	.88	1.50	9.00	.20	12.25	1.12	.75	1.63	.19
M30-250-9W	9	1/4	1/2	1.50	.88	1.50	1.50	.20	13.75	1.12	.75	1.63	.19
M30-250-10W	10	1/4	1/2	1.50	.88	1.50	12.00	.20	15.25	1.12	.75	1.63	.19

1/2 NPT (F) Input x 3/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M30-375-2W	2	3/8	1/2	1.50	.88	1.50	N/A	.20	3.25	1.12	.75	1.63	.19
M30-375-3W	3	3/8	1/2	1.50	.88	1.50	1.50	.20	4.75	1.12	.75	1.63	.19
M30-375-4W	4	3/8	1/2	1.50	.88	1.50	3.00	.20	6.25	1.12	.75	1.63	.19
M30-375-5W	5	3/8	1/2	1.50	.88	1.50	4.50	.20	7.75	1.12	.75	1.63	.19
M30-375-6W	6	3/8	1/2	1.50	.88	1.50	6.00	.20	9.25	1.12	.75	1.63	.19
M30-375-7W	7	3/8	1/2	1.50	.88	1.50	7.50	.20	10.75	1.12	.75	1.63	.19
M30-375-8W	8	3/8	1/2	1.50	.88	1.50	9.00	.20	12.25	1.12	.75	1.63	.19
M30-375-9W	9	3/8	1/2	1.50	.88	1.50	1.50	.20	13.75	1.12	.75	1.63	.19
M30-375-10W	10	3/8	1/2	1.50	.88	1.50	12.00	.20	15.25	1.12	.75	1.63	.19

* Number of stations
 ● Measurements in inches



1/2 NPT (F) input porting available to allow for greater flow

Over 30 colors of anodic coatings are available



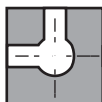
- Output ports at 90° for plumbing convenience
- 2 to 10 Stations
- Two input ports
- Aluminum with black anodize for corrosion and wear resistance

Port Configuration

Cross Section

Inline Manifold

90° Manifold



90° Manifolds

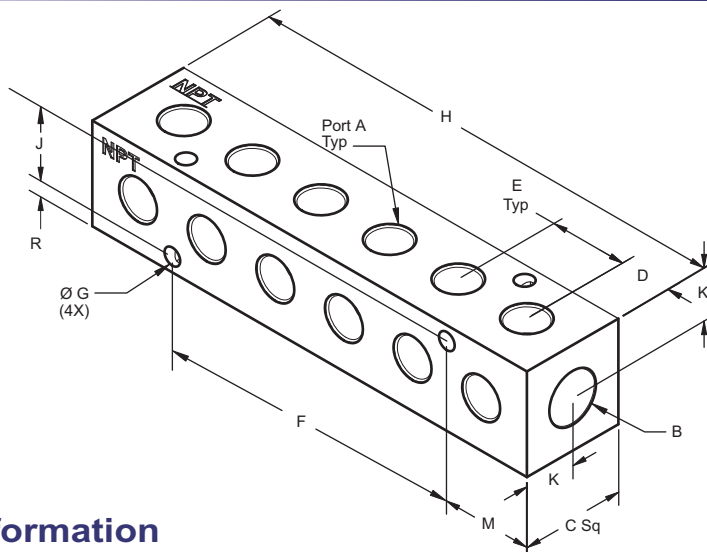
Port Options

Input

- 1/4 NPT (F)
- 3/8 NPT (F)
- 1/2 NPT (F)

Output

- 1/8 NPT (F)
- 1/4 NPT (F)
- 3/8 NPT (F)



Product Information

1/4 NPT (F) Input x 1/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M10-125-2-90	2	1/8	1/4	1.00	.50	.75	N/A	.17	1.75	.70	.50	0.88	.15
M10-125-3-90	3	1/8	1/4	1.00	.50	.75	.75	.17	2.50	.70	.50	0.88	.15
M10-125-4-90	4	1/8	1/4	1.00	.50	.75	1.50	.17	3.25	.70	.50	0.88	.15
M10-125-5-90	5	1/8	1/4	1.00	.50	.75	2.25	.17	4.00	.70	.50	0.88	.15
M10-125-6-90	6	1/8	1/4	1.00	.50	.75	3.00	.17	4.75	.70	.50	0.88	.15
M10-125-7-90	7	1/8	1/4	1.00	.50	.75	3.75	.17	5.50	.70	.50	0.88	.15
M10-125-8-90	8	1/8	1/4	1.00	.50	.75	4.50	.17	6.25	.70	.50	0.88	.15
M10-125-9-90	9	1/8	1/4	1.00	.50	.75	5.25	.17	7.00	.70	.50	0.88	.15
M10-125-10-90	10	1/8	1/4	1.00	.50	.75	6.00	.17	7.75	.70	.50	0.88	.15

3/8 NPT (F) Input x 1/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M20-125-2-90	2	1/8	3/8	1.25	.50	.75	N/A	.20	1.75	.89	.63	0.88	.18
M20-125-3-90	3	1/8	3/8	1.25	.50	.75	.75	.20	2.50	.89	.63	0.88	.18
M20-125-4-90	4	1/8	3/8	1.25	.50	.75	1.50	.20	3.25	.89	.63	0.88	.18
M20-125-5-90	5	1/8	3/8	1.25	.50	.75	2.25	.20	4.00	.89	.63	0.88	.18
M20-125-6-90	6	1/8	3/8	1.25	.50	.75	3.00	.20	4.75	.89	.63	0.88	.18
M20-125-7-90	7	1/8	3/8	1.25	.50	.75	3.75	.20	5.50	.89	.63	0.88	.18
M20-125-8-90	8	1/8	3/8	1.25	.50	.75	4.50	.20	6.25	.89	.63	0.88	.18
M20-125-9-90	9	1/8	3/8	1.25	.50	.75	5.25	.20	7.00	.89	.63	0.88	.18
M20-125-10-90	10	1/8	3/8	1.25	.50	.75	6.00	.20	7.75	.89	.63	0.88	.18

* Number of stations

● Measurements in inches

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

Product Information- 90° Manifolds

3/8 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M20-250-2-90	2	1/4	3/8	1.25	.63	.88	N/A	.20	2.13	.89	.63	1.06	.18
M20-250-3-90	3	1/4	3/8	1.25	.63	.88	.87	.20	3.00	.89	.63	1.06	.18
M20-250-4-90	4	1/4	3/8	1.25	.63	.88	1.75	.20	3.88	.89	.63	1.06	.18
M20-250-5-90	5	1/4	3/8	1.25	.63	.88	2.62	.20	4.75	.89	.63	1.06	.18
M20-250-6-90	6	1/4	3/8	1.25	.63	.88	3.50	.20	5.63	.89	.63	1.06	.18
M20-250-7-90	7	1/4	3/8	1.25	.63	.88	4.37	.20	6.50	.89	.63	1.06	.18
M20-250-8-90	8	1/4	3/8	1.25	.63	.88	5.25	.20	7.38	.89	.63	1.06	.18
M20-250-9-90	9	1/4	3/8	1.25	.63	.88	6.12	.20	8.25	.89	.63	1.06	.18
M20-250-10-90	10	1/4	3/8	1.25	.63	.88	7.00	.20	9.13	.89	.63	1.06	.18

1/2 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M30-250-2-90	2	1/4	1/2	1.50	.88	1.00	N/A	.20	2.75	1.12	.75	1.38	.19
M30-250-3-90	3	1/4	1/2	1.50	.88	1.00	1.00	.20	3.75	1.12	.75	1.38	.19
M30-250-4-90	4	1/4	1/2	1.50	.88	1.00	2.00	.20	4.75	1.12	.75	1.38	.19
M30-250-5-90	5	1/4	1/2	1.50	.88	1.00	3.00	.20	5.75	1.12	.75	1.38	.19
M30-250-6-90	6	1/4	1/2	1.50	.88	1.00	4.00	.20	6.75	1.12	.75	1.38	.19
M30-250-7-90	7	1/4	1/2	1.50	.88	1.00	5.00	.20	7.75	1.12	.75	1.38	.19
M30-250-8-90	8	1/4	1/2	1.50	.88	1.00	6.00	.20	8.75	1.12	.75	1.38	.19
M30-250-9-90	9	1/4	1/2	1.50	.88	1.00	7.00	.20	9.75	1.12	.75	1.38	.19
M30-250-10-90	10	1/4	1/2	1.50	.88	1.00	8.00	.20	10.75	1.12	.75	1.38	.19

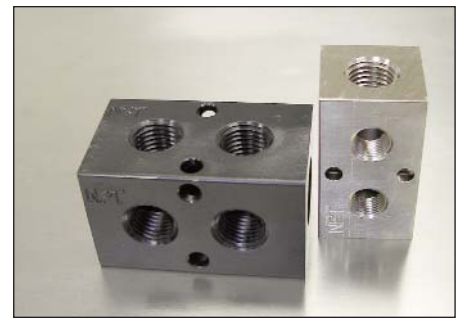
1/2 NPT (F) Input x 3/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M30-375-2-90	2	3/8	1/2	1.50	.88	1.00	N/A	.20	2.75	1.12	.75	1.38	.19
M30-375-3-90	3	3/8	1/2	1.50	.88	1.00	1.00	.20	3.75	1.12	.75	1.38	.19
M30-375-4-90	4	3/8	1/2	1.50	.88	1.00	2.00	.20	4.75	1.12	.75	1.38	.19
M30-375-5-90	5	3/8	1/2	1.50	.88	1.00	3.00	.20	5.75	1.12	.75	1.38	.19
M30-375-6-90	6	3/8	1/2	1.50	.88	1.00	4.00	.20	6.75	1.12	.75	1.38	.19
M30-375-7-90	7	3/8	1/2	1.50	.88	1.00	5.00	.20	7.75	1.12	.75	1.38	.19
M30-375-8-90	8	3/8	1/2	1.50	.88	1.00	6.00	.20	8.75	1.12	.75	1.38	.19
M30-375-9-90	9	3/8	1/2	1.50	.88	1.00	7.00	.20	9.75	1.12	.75	1.38	.19
M30-375-10-90	10	3/8	1/2	1.50	.88	1.00	8.00	.20	10.75	1.12	.75	1.38	.19

* Number of stations

● Measurements in inches

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



Contact factory for more information on custom plating or finishes

Several patents have been issued for our robust and unique designs



- Output port spacing is 1.5" center-to-center
- 2 to 10 stations
- 1/8, 1/4, 3/8, and 1/2 NPT (F) porting options

***Pneumadyne-
recognized around the
world for designing and
manufacturing high
quality products***

90° Manifolds- 1.5" Spacing

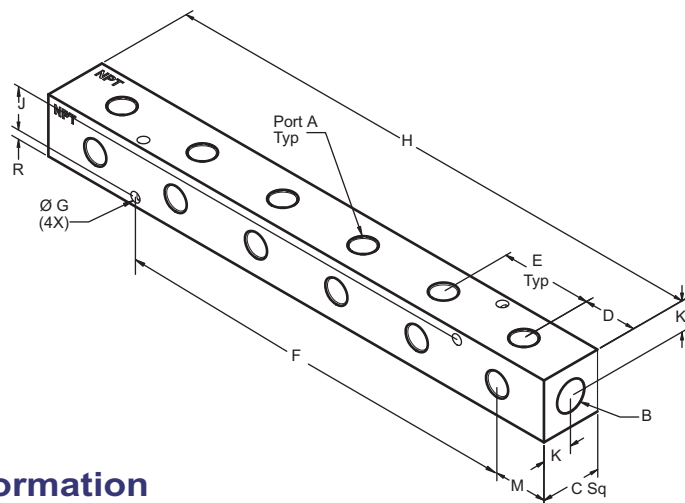
Port Options

Input

- 1/4 NPT (F)
- 3/8 NPT (F)
- 1/2 NPT (F)

Output

- 1/8 NPT (F)
- 1/4 NPT (F)
- 3/8 NPT (F)



Product Information

1/4 NPT (F) Input x 1/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M10-125-2-90W	2	1/8	1/4	1.00	.88	1.50	N/A	.17	3.25	0.70	.50	1.63	.15
M10-125-3-90W	3	1/8	1/4	1.00	.88	1.50	1.50	.17	4.75	0.70	.50	1.63	.15
M10-125-4-90W	4	1/8	1/4	1.00	.88	1.50	3.00	.17	6.25	0.70	.50	1.63	.15
M10-125-5-90W	5	1/8	1/4	1.00	.88	1.50	4.50	.17	7.75	0.70	.50	1.63	.15
M10-125-6-90W	6	1/8	1/4	1.00	.88	1.50	6.00	.17	9.25	0.70	.50	1.63	.15
M10-125-7-90W	7	1/8	1/4	1.00	.88	1.50	7.50	.17	10.75	0.70	.50	1.63	.15
M10-125-8-90W	8	1/8	1/4	1.00	.88	1.50	9.00	.17	12.25	0.70	.50	1.63	.15
M10-125-9-90W	9	1/8	1/4	1.00	.88	1.50	1.50	.17	13.75	0.70	.50	1.63	.15
M10-125-10-90W	10	1/8	1/4	1.00	.88	1.50	12.00	.17	15.25	0.70	.50	1.63	.15

3/8 NPT (F) Input x 1/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M20-125-2-90W	2	1/8	3/8	1.25	.88	1.50	N/A	.20	3.25	0.89	.63	1.63	.18
M20-125-3-90W	3	1/8	3/8	1.25	.88	1.50	1.50	.20	4.75	0.89	.63	1.63	.18
M20-125-4-90W	4	1/8	3/8	1.25	.88	1.50	3.00	.20	6.25	0.89	.63	1.63	.18
M20-125-5-90W	5	1/8	3/8	1.25	.88	1.50	4.50	.20	7.75	0.89	.63	1.63	.18
M20-125-6-90W	6	1/8	3/8	1.25	.88	1.50	6.00	.20	9.25	0.89	.63	1.63	.18
M20-125-7-90W	7	1/8	3/8	1.25	.88	1.50	7.50	.20	10.75	0.89	.63	1.63	.18
M20-125-8-90W	8	1/8	3/8	1.25	.88	1.50	9.00	.20	12.25	0.89	.63	1.63	.18
M20-125-9-90W	9	1/8	3/8	1.25	.88	1.50	1.50	.20	13.75	0.89	.63	1.63	.18
M20-125-10-90W	10	1/8	3/8	1.25	.88	1.50	12.00	.20	15.25	0.89	.63	1.63	.18

* Number of stations

● Measurements in inches

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

Product Information- 90° Manifolds- 1.5" Spacing

3/8 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M20-250-2-90W	2	1/4	3/8	1.25	.88	1.50	N/A	.20	3.25	0.89	.63	1.63	.18
M20-250-3-90W	3	1/4	3/8	1.25	.88	1.50	1.50	.20	4.75	0.89	.63	1.63	.18
M20-250-4-90W	4	1/4	3/8	1.25	.88	1.50	3.00	.20	6.25	0.89	.63	1.63	.18
M20-250-5-90W	5	1/4	3/8	1.25	.88	1.50	4.50	.20	7.75	0.89	.63	1.63	.18
M20-250-6-90W	6	1/4	3/8	1.25	.88	1.50	6.00	.20	9.25	0.89	.63	1.63	.18
M20-250-7-90W	7	1/4	3/8	1.25	.88	1.50	7.50	.20	10.75	0.89	.63	1.63	.18
M20-250-8-90W	8	1/4	3/8	1.25	.88	1.50	9.00	.20	12.25	0.89	.63	1.63	.18
M20-250-9-90W	9	1/4	3/8	1.25	.88	1.50	1.50	.20	13.75	0.89	.63	1.63	.18
M20-250-10-90W	10	1/4	3/8	1.25	.88	1.50	12.00	.20	15.25	0.89	.63	1.63	.18

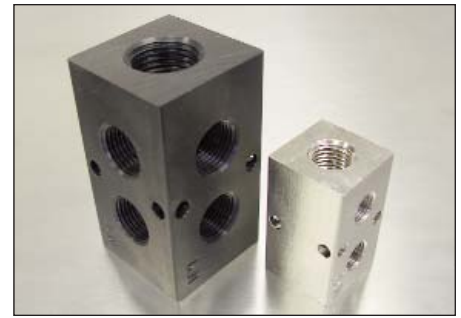
1/2 NPT (F) Input x 1/4 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M30-250-2-90W	2	1/4	1/2	1.50	.88	1.50	N/A	.20	3.25	1.12	.75	1.63	.19
M30-250-3-90W	3	1/4	1/2	1.50	.88	1.50	1.50	.20	4.75	1.12	.75	1.63	.19
M30-250-4-90W	4	1/4	1/2	1.50	.88	1.50	3.00	.20	6.25	1.12	.75	1.63	.19
M30-250-5-90W	5	1/4	1/2	1.50	.88	1.50	4.50	.20	7.75	1.12	.75	1.63	.19
M30-250-6-90W	6	1/4	1/2	1.50	.88	1.50	6.00	.20	9.25	1.12	.75	1.63	.19
M30-250-7-90W	7	1/4	1/2	1.50	.88	1.50	7.50	.20	10.75	1.12	.75	1.63	.19
M30-250-8-90W	8	1/4	1/2	1.50	.88	1.50	9.00	.20	12.25	1.12	.75	1.63	.19
M30-250-9-90W	9	1/4	1/2	1.50	.88	1.50	1.50	.20	13.75	1.12	.75	1.63	.19
M30-250-10-90W	10	1/4	1/2	1.50	.88	1.50	12.00	.20	15.25	1.12	.75	1.63	.19

1/2 NPT (F) Input x 3/8 NPT (F) Output

Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M30-375-2-90W	2	3/8	1/2	1.50	.88	1.50	N/A	.20	2.75	1.12	.75	1.63	.19
M30-375-3-90W	3	3/8	1/2	1.50	.88	1.50	1.50	.20	4.75	1.12	.75	1.63	.19
M30-375-4-90W	4	3/8	1/2	1.50	.88	1.50	3.00	.20	6.25	1.12	.75	1.63	.19
M30-375-5-90W	5	3/8	1/2	1.50	.88	1.50	4.50	.20	7.75	1.12	.75	1.63	.19
M30-375-6-90W	6	3/8	1/2	1.50	.88	1.50	6.00	.20	9.25	1.12	.75	1.63	.19
M30-375-7-90W	7	3/8	1/2	1.50	.88	1.50	7.50	.20	10.75	1.12	.75	1.63	.19
M30-375-8-90W	8	3/8	1/2	1.50	.88	1.50	9.00	.20	12.25	1.12	.75	1.63	.19
M30-375-9-90W	9	3/8	1/2	1.50	.88	1.50	1.50	.20	13.75	1.12	.75	1.63	.19
M30-375-10-90W	10	3/8	1/2	1.50	.88	1.50	12.00	.20	15.25	1.12	.75	1.63	.19

- * Number of stations
- Measurements in inches



90° manifolds with 1.5" spacing provide plumbing convenience and allow for larger control valve installation

Solenoid manifold information can be found in the Solenoid Valves & Accessories section

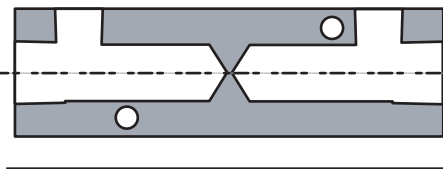
- When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.



- Two separate manifolds in one block
- Two independent flow paths (ie: pressure one side vacuum on the other)
- Aluminum with black anodizing for corrosion resistance and appearance
- Mounting versatility

Port Configuration

Cross Section
Part Number
DA*-*



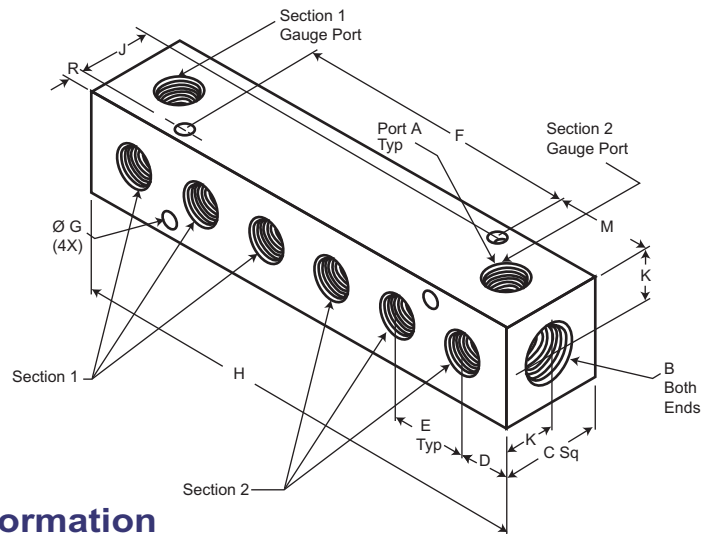
A variety of custom manifolds have been designed by Pneumadyne. Features include:

- 1 Large mounting hole for shaft mounting by set screw
- 2 Junction for eighteen output ports
- 3 Push-to-connect fittings
- 4 Designed to accommodate customer's solenoid valves
- 5 Eliminates the need for *thirty tee fittings*
- 6 Brass manifold
- 7 Accommodates a fifth output port

Dual Air

Port Options

- Input**
- 1/4 NPT (F)
 - 3/8 NPT (F)
- Output**
- 1/8 NPT (F)
 - 1/4 NPT (F)



Product Information

1/4 NPT (F) Input x 1/8 NPT (F) Output

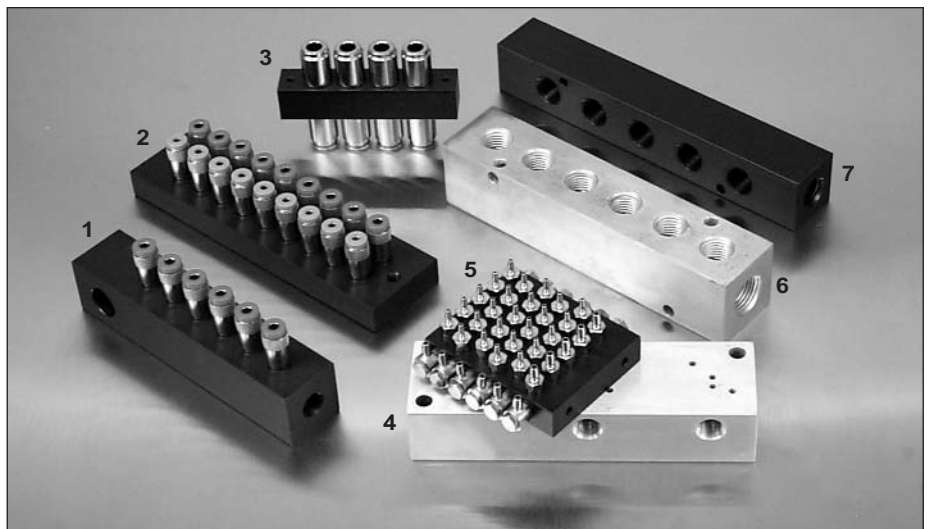
Part Number	Ports per Section	A	B	C	D	E	F	G	H	J	K	M	R
DA10-125-22	2	1/8	1/4	1.00	.50	.75	1.50	.17	3.25	.70	.50	.87	.15
DA10-125-33	3	1/8	1/4	1.00	.50	.75	3.00	.17	4.75	.70	.50	.87	.15
DA10-125-44	4	1/8	1/4	1.00	.50	.75	4.50	.17	6.25	.70	.50	.87	.15
DA10-125-55	5	1/8	1/4	1.00	.50	.75	6.00	.17	7.75	.70	.50	.87	.15

3/8 NPT (F) Input x 1/4 NPT (F) Output

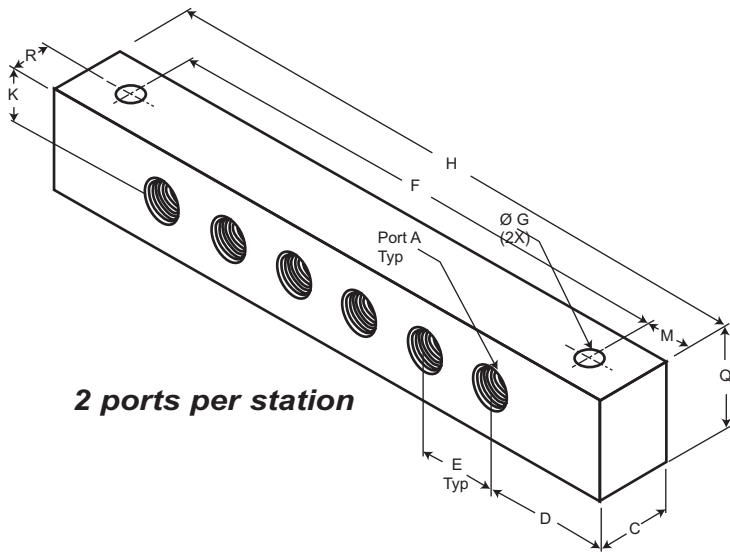
DA20-250-22	2	1/4	3/8	1.25	.62	.87	1.75	.20	3.87	.89	.62	1.06	.18
DA20-250-33	3	1/4	3/8	1.25	.62	.87	3.50	.20	5.62	.89	.62	1.06	.18
DA20-250-44	4	1/4	3/8	1.25	.62	.87	5.25	.20	7.37	.89	.62	1.06	.18
DA20-250-55	5	1/4	3/8	1.25	.62	.87	7.00	.20	9.12	.89	.62	1.06	.18

- Measurements in inches

Custom Products

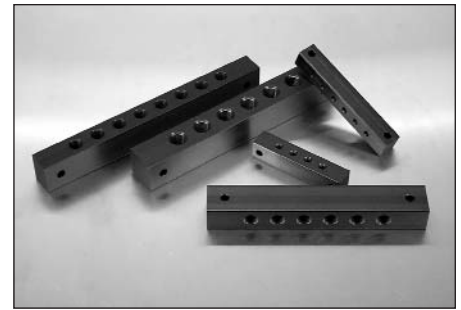


Junction Blocks



Port Options

- 10-32 UNF(F)
- 1/8 NPT (F)
- 1/4 NPT (F)



- Union configuration
- Three available port options 10-32, 1/8 NPT (F), 1/4 NPT (F)
- 4 to 10 stations
- Aluminum with black anodizing for corrosion resistance and appearance

Product Information

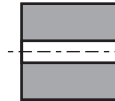
Part Number	No. of Stations	A	C	D	E	F	G	H	K	M	R	Q
JB32-4	4	10-32	.62	.75	.50	2.50	.22	3.00	.31	.25	.31	.62
JB32-6	6	10-32	.62	.75	.50	3.50	.22	4.00	.31	.25	.31	.62
JB32-8	8	10-32	.62	.75	.50	4.50	.22	5.00	.31	.25	.31	.62
JB32-10	10	10-32	.62	.75	.50	5.50	.22	6.00	.31	.25	.31	.62
NPT												
JB125-4	4	1/8	1.00	1.25	.75	3.75	.25	4.75	.37	.50	.50	.75
JB125-6	6	1/8	1.00	1.25	.75	5.25	.25	6.25	.37	.50	.50	.75
JB125-8	8	1/8	1.00	1.25	.75	6.75	.25	7.75	.37	.50	.50	.75
JB125-10	10	1/8	1.00	1.25	.75	8.25	.25	9.25	.37	.50	.50	.75
JB250-4	4	1/4	1.00	1.37	.87	4.37	.25	5.37	.50	.50	.50	1.00
JB250-6	6	1/4	1.00	1.37	.87	6.12	.25	7.12	.50	.50	.50	1.00
JB250-8	8	1/4	1.00	1.37	.87	7.87	.25	8.87	.50	.50	.50	1.00
JB250-10	10	1/4	1.00	1.37	.87	9.62	.25	10.62	.50	.50	.50	1.00

● Measurements in inches

Port Configuration

Cross Section

Part Number
JB*-*



We design custom products to meet your application needs

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

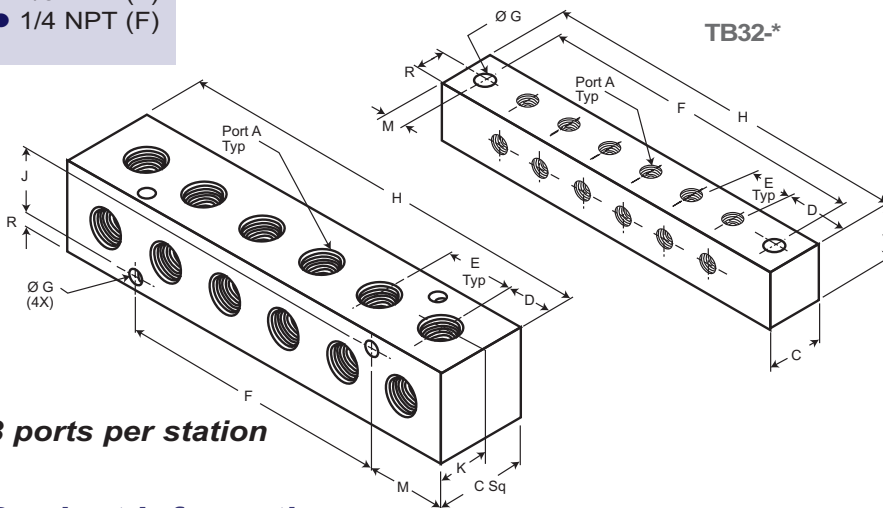


- Tee configuration
- Three available port options 10-32 (F), 1/8 NPT (F), 1/4 NPT (F)
- 2 to 10 stations
- Mounting versatility
- Aluminum with black anodizing for corrosion resistance and appearance

Terminal Blocks

Port Options

- 10-32 UNF(F)
- 1/8 NPT (F)
- 1/4 NPT (F)



Product Information

Part Number	No. Stations	A	C	D	E	F	G	H	J	K	M	R
10-32 UNF												
TB32-4	4	10-32	.62	.75	.50	2.50	.22	3.00	.62	-	.25	.31
TB32-6	6	10-32	.62	.75	.50	3.50	.22	4.00	.62	-	.25	.31
TB32-8	8	10-32	.62	.75	.50	4.50	.22	5.00	.62	-	.25	.31
TB32-10	10	10-32	.62	.75	.50	5.50	.22	6.00	.62	-	.25	.31
1/8 NPT												
TB10-125-2	2	1/8	1.00	.50	.75	-	.17	1.75	.70	.50	.87	.15
TB10-125-4	4	1/8	1.00	.50	.75	1.50	.17	3.25	.70	.50	.87	.15
TB10-125-6	6	1/8	1.00	.50	.75	3.00	.17	4.75	.70	.50	.87	.15
TB10-125-8	8	1/8	1.00	.50	.75	4.50	.17	6.25	.70	.50	.87	.15
TB10-125-10	10	1/8	1.00	.50	.75	6.00	.17	7.75	.70	.50	.87	.15
1/4 NPT												
TB20-250-2	2	1/4	1.25	.62	.87	-	.20	2.12	.89	.62	1.06	.18
TB20-250-4	4	1/4	1.25	.62	.87	1.75	.20	3.87	.89	.62	1.06	.18
TB20-250-6	6	1/4	1.25	.62	.87	3.50	.20	5.62	.89	.62	1.06	.18
TB20-250-8	8	1/4	1.25	.62	.87	5.25	.20	7.37	.89	.62	1.06	.18
TB20-250-10	10	1/4	1.25	.62	.87	7.00	.20	9.12	.89	.62	1.06	.18

● Measurements in inches

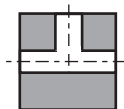
● When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Port Configuration

Cross Section

Part Number

TB*-*



Bookmark
pneumadyne.com
 for standard and new
 product information and
 useful links



Features

- Single and multiple tube
- Variety of colors
- Coil tubing available
- Several sizes to accommodate Pneumadyne fittings

Performance Data

Temperature Range	Vacuum	Media	Diameter Tolerances
-40° to 160° F -28° to 71° C	to 28" Hg	Fluids Compatible w/ Materials	±.005

Polyurethane Tubing

Single Tubing

Pneumadyne offers Ether based Polyurethane (PU) Tubing. Material characteristics include minimal water absorption, high flexibility and opaque color pigments. The extrusion process and exclusive formulation produces a high quality tubing and eliminates surface stickiness.

Product Group	OD/ID	Package	*Duro	Working Pressure psi @ 75°F	**Standard Colors
PU-125-*	1/8 x 1/16	250' box	85A	135	
PU-125-*-R	1/8 x 1/16	500' reel	85A	135	0, 2, 3, 4, 5, 6,
PU-125-*-LR	1/8 x 1/16	1000' reel	85A	135	7, 8, 9, 11
PU-125-*-XR	1/8 x 1/16	2500' reel	85A	135	
PU-125F-*	1/8 x 1/16	250' box	95A	255	0, 2, 3, 4, 5, 6, 7
PU-156-*	5/32 x 5/64	100' box	85A	155	0, 2, 3, 4,
PU-156-*-R	5/32 x 5/64	500' reel	85A	155	5, 6, 7
PU-156-*-LR	5/32 x 5/64	1000' reel	85A	155	
PU-156F-*	5/32 x 3/32	100' box	95A	210	0, 2, 3, 4, 5, 6, 7
PU-250R-*	1/4 x 1/8	100' bag	70A	60	0, 2, 14, 25, 26
PU-250-*	1/4 x 1/8	100' box	85A	145	0, 2, 3, 4, 5,
PU-250-*-R	1/4 x 1/8	500' reel	85A	145	6, 7, 8, 9
PU-250-*-LR	1/4 x 1/8	1000' reel	85A	145	
PU-250PB-*	1/4 x .170	100' bag	90A	115	0, 2, 3, 4, 6, 27
PU-250F-*	1/4 x 1/8	100' box	95A	265	0, 2, 3, 4, 5, 6, 7, 27
PU-312-*	5/16 x 3/16	100' bag	85A	110	0, 2, 4
PU-312-*-R	5/16 x 3/16	500' reel	85A	110	
PU-375R-*	3/8 x 1/4	100' bag	70A	50	3, 4
PU-375-*	3/8 x 1/4	100' bag	85A	100	0
PU-375-*-R	3/8 x 1/4	500' reel	85A	100	
PU-375PB-*	3/8 x .245	100' bag	90A	125	0, 2, 3, 4, 5, 6, 7, 8, 9, 14, 25, 26, 27, 28
PU-375F-*	3/8 x .245	100' bag	95A	170	0, 2, 3, 4, 5, 6, 8, 9, 27, 28
PU-468F-*	15/32 x 5/16	50' bag	95A	155	0, 2, 3, 4, 6, 9, 27
PU-562F-*	9/16 x 3/8	50' bag	95A	155	0, 2, 3, 4, 6, 9, 27, 28
PU-750F-*	3/4 x .467	150' reel	95A	175	0, 3, 4, 6, 27

** See **Product Number Diagram** for Color Code information

All dimensions and specifications are subject to change without notice

*Duro= Durometer
Working Pressure: 3 to 1 Safety Factor [defined](#)

Multi-Bore Tubing

Extruded Polyurethane

Multi-bore tubing is two or more tubes that are extruded as a single piece. The tubes are joined with a tough connecting web. This tubing is ideal for applications that encounter severe or constant flexing which might separate the bond on MCR tubing assemblies. A small rib runs the length of one of the tubes for easy identification. All Multi-Bore tubing is mono-colored and is recommended for use with barbed fittings. Push-to-connect fittings are not recommended, the slightly flat surface resulting from stripping may affect the fittings sealing abilities.

Product Group	OD/ID	Package	Durometer	Working Pressure psi@ 75°F	Standard Colors*
	○○				
PU2-125*-C	1/8 X 1/16	100' box	90A	190	0,2
PU2-250*-C	1/4 X 1/8	100' box	85A	150	
	○○○				
PU3-125*-C	1/8 X 1/16	100' box	85A	125	0,2
PU3-250*-L	1/4 X 1/8	50' box	85A	150	
	○○○○				
PU4-125*-C	1/8 X 1/16	100' box	85A	125	0
PU4-250*-L	1/4 X 1/8	50' box	85A	150	0,2

* See **Product Number Diagram** for Color Code information
Working Pressure: 3 to 1 Safety Factor [defined](#)

Multi-Color Ribbon

(MCR)

85A Durometer
Bonded Polyurethane

Multiple Color Ribbon (MCR) color codes your tubing lines. Great for identification, tracing or trouble shooting, this tubing will withstand the rigors of flexing and rough handling. A unique heat bonding process allows you to easily hand separate the tubing for routing.

Product Group	OD/ID	Pkg	Working Pressure psi @ 75° F	Standard Colors*
	○○○○			
PUMC4-125-M	1/8 X 1/16	100' box		26, 28, 29, 25
PUMC4-125-2	1/8 X 1/16	100' box	135	2, 2, 2, 2
PUMC4-125-8		100' box		8, 8, 8, 8
PUMC4-125-0		100' box		0, 0, 0, 0
	○○○○○○			
PUMC6-125-M	1/8 X 1/16	100' box		5, 4, 3, 6, 7, 11
PUMC6-125-2	1/8 X 1/16	100' box	135	2, 2, 2, 2, 2, 2
PUMC6-125-0		100' box		0, 0, 0, 0, 0, 0
	○○○○○○○○			
PUMC8-125-M	1/8 X 1/16	100' box		9, 8, 32, 27, 26, 28, 29, 25
PUMC8-125-2	1/8 X 1/16	100' box	135	2, 2, 2, 2
PUMC8-125-0		100' box		0, 0, 0, 0
	○○○○			
PUMC4-250-M	1/4 X 1/8	100' box		26, 28, 29, 25
PUMC4-250-2	1/4 X 1/8	100' box	145	2, 2, 2, 2
PUMC4-250-0		100' box		0, 0, 0, 0
	○○○○○○			
PUMC6-250-M	1/4 X 1/8	100' box		5, 4, 3, 6, 7, 11
PUMC6-250-2	1/4 X 1/8	100' box	145	2, 2, 2, 2, 2, 2
PUMC6-250-0		100' box		0, 0, 0, 0, 0, 0
	○○○○○○○○			
PUMC8-250-M	1/4 X 1/8	100' box	145	9, 8, 32, 27, 26, 28, 29, 25

● See **Product Number Diagram** for Color Code information

* See **Product Number Diagram** for Color Code information
Working Pressure: 3 to 1 Safety Factor [defined](#)

Product Group	OD/ID/Material Length	Package	Durometer	Working Pressure psi @ 75°F	Standard Colors*
PUC-125-*	1/8 X 1/16 x 10'	1	85A	115	0, 2, 4, 27
PUC-250-*	1/4 X 1/8 X 10'	1	85A	125	0, 2, 4, 5, 6, 8
○○					
PUC2-125-*	1/8 X 1/16 x 7'	1	90A	160	2
PUC2-250-*	1/4 X 1/8 X 10'	1	85A	130	0, 2

* See **Product Number Diagram** below for Color Code information
 Working Pressure: 3 to 1 Safety Factor [defined](#)

Polyurethane Coils

Polyurethane has outstanding memory and flexibility which make it the ideal material for processing into self-storing coiled tubing. These coils are extraordinarily tough and resistant to abrasion, overstretching and kink damage. Pneumadyne offers coils in every size and configuration of polyurethane in single, multi-tube and even jacketed bundles (contact factory for styles not listed).



Polyurethane coils are extraordinarily tough and resistant to abrasion, overstretching and kink damage



Multiple Color Ribbon (MCR) is great for identification, tracing or trouble shooting

Product Number Diagram Tubing

PU 6- 250- 8- L

Tubing Material

- PU= Single Polyurethane
- PU#= Multi-Bore Polyurethane
- PUMC= Multi-Color Polyurethane
- PUC= Polyurethane Recoil

Package Size

- C= 100 Ft
- L= 50 Ft
- R= 500 Ft
- LR= 1000 Ft
- XR= 2500 Ft

Color Code Opaque

- M= Multi-Color
- 0= Natural
- 2= Black
- 3= Red
- 4= Blue
- 5= Green
- 6= Yellow
- 7= Orange
- 8= Gray
- 9= White
- 11= Purple
- 14= Light Gray

Configuration

- 2= two channels
- 4= four channels
- 6= six channels
- 8= eight channels

Tube Size (85A)

- | | |
|------------------|-------------------|
| 125= 1/8 x 1/16 | 375= 3/8 x 1/4 |
| 156= 5/32 x 5/64 | 468= 15/32 x 5/16 |
| 250= 1/4 x 1/8 | 562= 9/16 x 3/8 |
| 312= 5/16 x 3/16 | 750= 3/4 x .467 |

85A durometer tubing is not indicated in the part number- however the following letters are used immediately after the tube size to indicate alternative tubing durometers. Tube ID will vary- refer to part number listing for tubing dimensions.

Transparent

- 25= Red
- 26= Green
- 27= Blue
- 28= Yellow
- 29= Orange
- 32= Purple

- F= 95A PB= 90A R= 70A

● Please use **Product Diagram** to interpret part numbers - (do not attempt to build part numbers) see product information for part number listing.

Features

- Compact and convenient
- Valved coupling
- Brass construction
- Durable
- Available in 303 Stainless Steel



Quick Disconnect Coupling

Available from Pneumadyne, one of the smallest automatic quick disconnect couplings with a shut-off valve on the market. Select from three (3) plug connector styles and four (4) socket connector styles that offer an easy method of connecting and disconnecting single tube lines. Connection of the plug and socket shifts the internal valve forward allowing free flow in both directions. The single shut-off socket connector closes the valve when disconnected. Quick disconnects are exceptionally small and suited for use in applications such as medical, dental, robotics and testing fixtures.

Performance Data

Temperature Range	Operating Pressure	Media	C _v	Flow Rate (scfm)	
				@ 50 psi	@ 125 psi
-40° to 250° F	0 to 230 psi	Fluids Compatible w/ Materials	.18	6.5	14

Porting Options

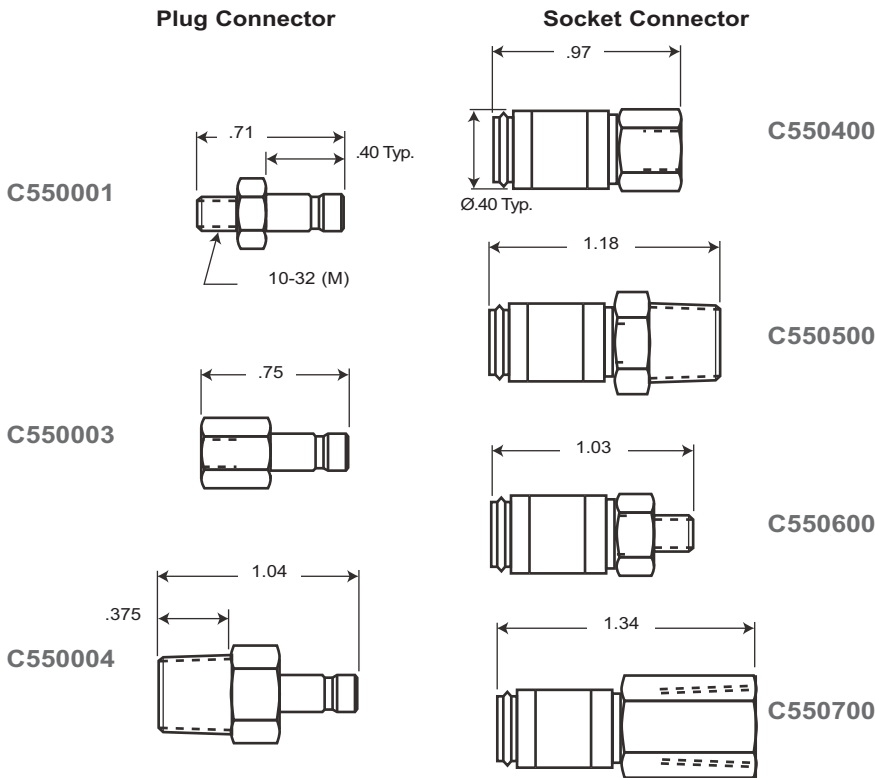
Plug Connectors	Socket Connectors
10-32 (M)	10-32 (M)
10-32 (F)	10-32 (F)
1/8 NPT (M)	1/8 NPT (F)
	1/8 NPT (M)

Materials

Brass, Stainless Steel, Buna-N Seals

Quick Disconnect

Product Information



Part Number	Description
C550400	Socket 10-32 (F)
C550500	Socket 1/8 NPT
C550600	Socket 10-32 (M)
C550700	Socket 1/8 NPT (F)
C550001	Plug 10-32 (M)
C550003	Plug 10-32 (F)
C550004	Plug 1/8 NPT

All styles available in 303 SS. See Ordering Information below

Ordering Information

- Use Product Information listing to select product.
- Optional Seals available upon request- contact factory.
- For 303 Stainless Steel add -303 suffix to the part number.

All dimensions and specifications are subject to change without notice

Quick disconnects are exceptionally small and suited for use in applications such as medical, dental, robotics and testing fixtures

Features

- Mounting versatility- inline connection or panel mount
- Time saving- allows disconnection while system is pressurized
- Optional dress plate for finished look
- Ideal for medical and dental applications



Micro Coupler

Micro couplers are used in systems where rapid and repeated connecting and disconnecting of fluid conductors is required. They are ideal for use on test equipment, patch systems, quick set-ups of machines, jigs and fixtures. Micro couplers offer an easy solution, without the use of tools, for the connection and disconnection of single tubing.

The **plug connector** has a specially designed electroless nickel plated brass body with a Buna-N O-ring retained opposite the barb. This quality O-ring ensures a leakproof seal when connected to a socket component. The plug connector body is secured within the plug connector nut by a c-clip enabling the barb to float and rotate thus accommodating the natural twist of the tubing and providing for easier installation.

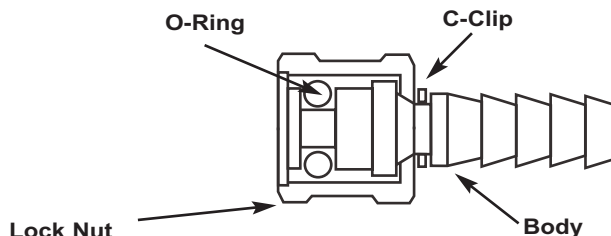
The compact **straight-thru socket connector** is used on systems where unrestricted flow is required. When coupled with the plug connector the overall length is only 5/8"- ideal for limited space applications.

Performance Data

Product	Temperature Range	Operating Pressure	Media	Cv	Flow Rate (scfm)	
					50 psi	125 psi
Straight-thru	-20° to 160° F -28° to 71° C	0 to 125 psi	Fluids Compatible w/ Materials	.15	4.8	10
Valved					4.2	9

The unique design of the **in-line socket connector with shut-off valve** ensures maximum flow and a reliable seal. When connected, flow is directed into a side port on the stem and out the output port. When disconnected a spring slides the stem forward thereby sealing the valve seat and stopping the flow. A Buna-N O-ring retained near the end of the valve stem ensures a reliable, leakproof seal.

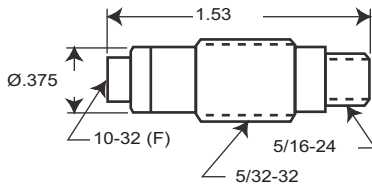
The **bulkhead socket connector** with shut-off valve provides the durability and convenience often required for use on test equipment. This miniature coupler (1.53 OAL) can be mounted on a control panel via the 15/32-32 thread, two (2) jam nuts and a lock washer are provided to secure the component in place.



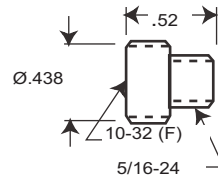
Protects O-ring from damage and contamination while disconnected.

Micro Coupler

Socket Connectors

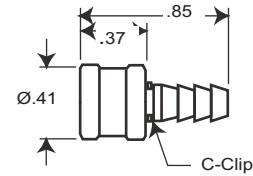


PMCBH-*
Valved Bulkhead Socket

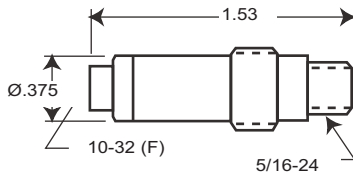


PMCM-*
Straight-thru Socket

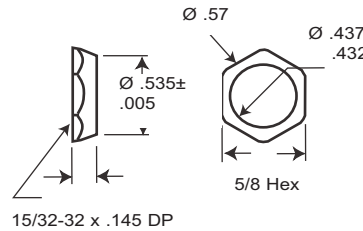
Plug Connectors



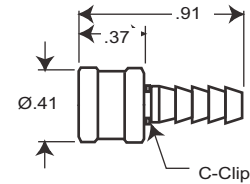
PMC-110



PMCIL-*
Valved Inline Socket



DP-22
DP-11



PMC-170

Product Information

Part Number	Description	Part Number	Description
Bulkhead Socket, valved		Inline Socket, straight-thru	
PMCBH-10/32	10-32 (F)	PMCM-10/32	10-32 (F)
PMCBH-062	062 barb valve assembly	PMCM-062	062 barb assembly
PMCBH-110	110 barb valve assembly	PMCM-110	110 barb assembly
PMCBH-170	170 barb valve assembly	PMCM-170	170 barb assembly
Inline Socket, valved		Plug Connector	
PMCIL-10/32	10-32 (F)	PMC-110	Plug: 110 barb
PMCIL-062	062 barb valve assembly	PMC-170	Plug: 170 barb
PMCIL-110	110 barb valve assembly		
PMCIL-170	170 barb valve assembly		
		Panel Mount Dress Plate	
		DP-11	Black Anodized
		DP-22	Electroless Nickel

Ordering Information

The micro coupler socket and plug connectors are sold separately and sockets are available with standard fitting options.

The electroless nickel plated brass barbed ends are assembled into the 10-32 (F) port of the micro coupler socket.

Materials

Plug Connector: Brass, Electroless Nickel Plated, Zinc Dichromate

O-rings: Buna-N; other materials available- contact factory

Socket Connector: Brass, Electroless Nickel Plated

Dress Plate: Aluminum, Electroless Nickel Plating, Black Anodized

Features

- One-piece design
- 1/4" & 5/32" push-in connectors
- Three body styles
- 4 to 12 stations (ports)
- Black anodized for corrosion resistance
- Threaded option for use with barb fittings



Static Bulkhead Connectors

Pneumadyne's new Bulkhead Connectors are a fast, convenient method of connecting multiple tubing lines in a control panel or on a machine. The one-piece design features 1/4 and 5/32 push-in connectors or 1/4-28 UNF threads and

Three body styles are offered to fit application requirements

accommodates four to 12 tubing lines. Port numbers are etched into both sides of the Bulkhead Connector to ease line installation and identification.

Three body styles are offered to fit application requirements. Choose from: Push-in, Push-in to Threaded and Threaded bodies. The 1/4 and 5/32 push-in ports feature acetal collets with metal grippers to ensure a lasting tubing connection. 1/4-28 UNF threads accommodate Pneumadyne's Pneu-Edge® Straight Connector barb fittings. These precision machined fittings feature a consistently sharp single-barb design for more permanent polyurethane tubing installation without the need for clamps. Several barb sizes are available to fit tubing requirements.

The Bulkhead Connectors are black anodized for corrosion and wear resistance.

Materials

Aluminum / Black Anodize, Buna-N, Brass, Acetal



A Buna-N o-ring provides a seal when mounted against a control panel or a machine



Our captured o-ring design provides a superior seal ensuring a leak resistant fitting

Product Information *Static Bulkhead Connector*

Push-in x Push-in

<i>Item</i>	<i>Stations</i>	<i>Connections</i>	
1-1/2" Body			
SB115-250-4	4	1/4 Push-in	1/4 Push-in
SB115-156-4	4	5/32 Push-in	5/32 Push-in
2" Body			
SB120-250-7	7	1/4 Push-in	1/4 Push-in
SB120-156-7	7	5/32 Push-in	5/32 Push-in
2-1/2" Body			
SB125-250-9	9	1/4 Push-in	1/4 Push-in
SB125-156-9	9	5/32 Push-in	5/32 Push-in
SB125-250-12	12	1/4 Push-in	1/4 Push-in
SB125-156-12	12	5/32 Push-in	5/32 Push-in

Push-in x Threaded

<i>Item</i>	<i>Stations</i>	<i>Connections</i>	
1-1/2" Body			
SB215-250-4	4	1/4 Push-in	1/4-28 UNF
SB215-156-4	4	5/32 Push-in	1/4-28 UNF
2" Body			
SB220-250-7	7	1/4 Push-in	1/4-28 UNF
SB220-156-7	7	5/32 Push-in	1/4-28 UNF
2-1/2" Body			
SB225-250-9	9	1/4 Push-in	1/4-28 UNF
SB225-156-9	9	5/32 Push-in	1/4-28 UNF
SB225-250-12	12	1/4 Push-in	1/4-28 UNF
SB225-156-12	12	5/32 Push-in	1/4-28 UNF

Threaded x Threaded

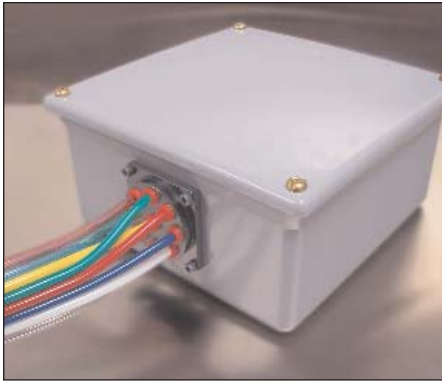
<i>Item</i>	<i>Stations</i>	<i>Connections</i>	
1-1/2" Body			
SB315-4	4	1/4-28 UNF	1/4-28 UNF
2" Body			
SB320-7	7	1/4-28 UNF	1/4-28 UNF
2-1/2" Body			
SB325-9	9	1/4-28 UNF	1/4-28 UNF
SB325-12	12	1/4-28 UNF	1/4-28 UNF

1/4-28 Fittings for use with Static Bulkhead Connectors

<i>Item</i>	<i>Thread</i>	<i>Tube ID</i>
SB10	1/4-28 UNF	1/16
SB20	1/4-28 UNF	5/64
SB25	1/4-28 UNF	3/32
SB30	1/4-28 UNF	1/8
SB40	1/4-28 UNF	0.170
SB50	1/4-28 UNF	3/16
SB60	1/4-28 UNF	1/4



Pneumadyne offers a wide selection of Polyurethane tubing for use with the Bulkhead Connectors. A variety of sizes and colors are available to meet system requirements and for line identification purposes.

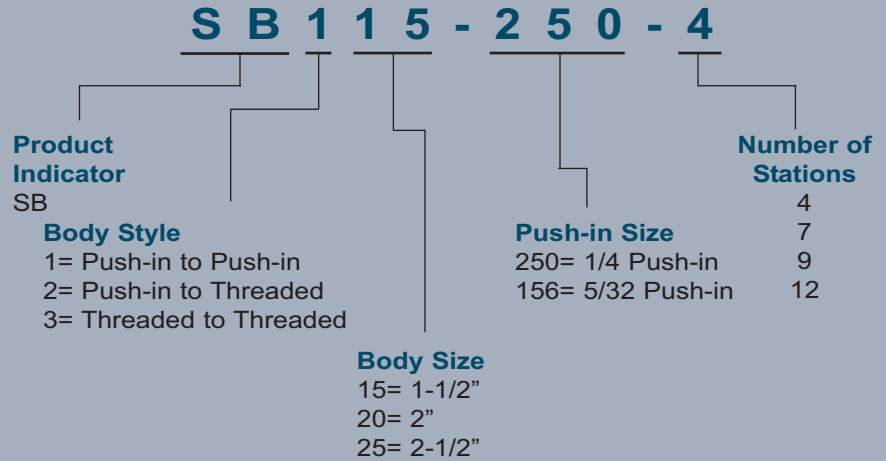


Bulkhead Connectors are a fast, convenient method of connecting multiple tubing lines in a control box.



The 1/4-28 threaded fittings available for use on the Threaded Body accept eight (ID) sizes of polyurethane tubing.

Product Number Diagram Static Bulkhead Connector



Example:

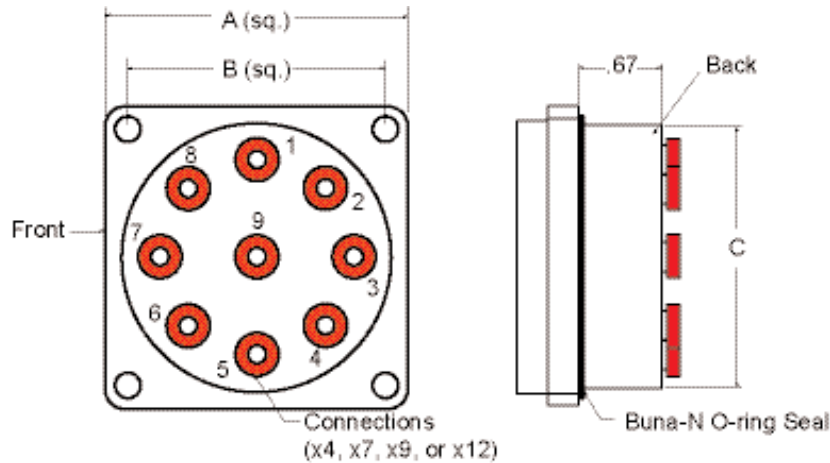
Static Bulkhead Connector with four stations a 1-1/2" Body and 1/4 Push-in Fittings

Ordering Information

- To order standard product refer to Product Information listing.
- 1/4-28 Fittings available for use with Bulkhead Connectors sold separately.
- Polyurethane tubing sold separately.
- Contact factory for custom configurations.

A Buna-N o-ring on the back side of the Bulkhead Connector provides a seal when mounted against a control panel or a machine

Static Bulkhead Connectors



Part Number	Front Connections	Back Connections	Number Stations	A OAL (sq)	B Mounting	C Panel Hole Diameter	Mounting Screws (4 req. not included)
SB115-156-4	5/32 Push-in	5/32 Push-in	4	1-1/2"	1.190"	1-5/16"	8-32 SHCS
SB120-156-7	5/32 Push-in	5/32 Push-in	7	2"	1.625"	1-11/16"	10-32 SHCS
SB125-156-9	5/32 Push-in	5/32 Push-in	9	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB125-156-12	5/32 Push-in	5/32 Push-in	12	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB215-156-4	5/32 Push-in	1/4-28 UNF	4	1-1/2"	1.190"	1-5/16"	8-32 SHCS
SB220-156-7	5/32 Push-in	1/4-28 UNF	7	2"	1.625"	1-11/16"	10-32 SHCS
SB225-156-9	5/32 Push-in	1/4-28 UNF	9	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB225-156-12	5/32 Push-in	1/4-28 UNF	12	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB115-250-4	1/4 Push-in	1/4 Push-in	4	1-1/2"	1.190"	1-5/16"	8-32 SHCS
SB120-250-7	1/4 Push-in	1/4 Push-in	7	2"	1.625"	1-11/16"	10-32 SHCS
SB125-250-9	1/4 Push-in	1/4 Push-in	9	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB125-250-12	1/4 Push-in	1/4 Push-in	12	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB215-250-4	1/4 Push-in	1/4-28 UNF	4	1-1/2"	1.190"	1-5/16"	8-32 SHCS
SB220-250-7	1/4 Push-in	1/4-28 UNF	7	2"	1.625"	1-11/16"	10-32 SHCS
SB225-250-9	1/4 Push-in	1/4-28 UNF	9	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB225-250-12	1/4 Push-in	1/4-28 UNF	12	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB315-4	1/4-28 UNF	1/4-28 UNF	4	1-1/2"	1.190"	1-5/16"	8-32 SHCS
SB320-7	1/4-28 UNF	1/4-28 UNF	7	2"	1.625"	1-11/16"	10-32 SHCS
SB325-9	1/4-28 UNF	1/4-28 UNF	9	2-1/2"	2.125"	2-1/4"	10-32 SHCS
SB325-12	1/4-28 UNF	1/4-28 UNF	12	2-1/2"	2.125"	2-1/4"	10-32 SHCS

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

Features

- Plug/socket assemblies *float and rotate*
- Captive screws expedite *connection and disconnection*
- Mounting versatility



The Ribbon Tube Connector

The Ribbon Tube Connector easily connects and disconnects sections of a system, ensuring fast installation of multiple tube lines. This feature is especially important when replacing test equipment fixtures, installing new equipment, or repairing machines.

The combination of the Pneumadyne Ribbon Tube Connector with multi-bore or multi-color ribbon tubing provides a cost effective method of routing multi-tubing and eliminates the need for spiral wrap or jacketing.

The Ribbon Tube Connector consists of two black anodized aluminum retaining bars each containing four (4) channels for the barb connectors. The plug/socket barb assemblies float and rotate within their respective retaining bars to accommodate the natural twist (lay) of single tubing. To prevent misconnection, one channel connection is off-set.

Performance Data

Temperature Range	Operating Pressure	Mounting
-20° to 160° F -28° to 71° C	125 psi max.	Panel or Surface

- Please refer to [flow rate information](#)

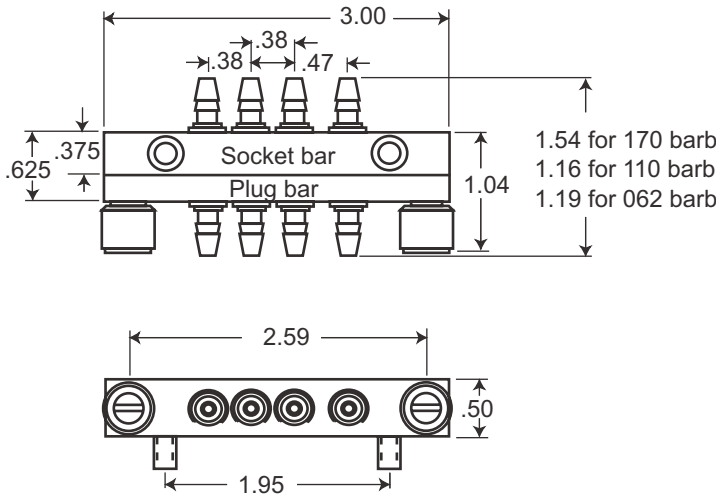
When additional lines are required, more connectors can be stacked to accommodate the additional tubing lines.

Two (2) spring loaded captive screws connect the two (2) retaining bars. These screws can be hand tightened, or tightened with a flat-blade screw driver if necessary. The snap-in style spring loaded captive screw expedites assembly and disassembly.

The Ribbon Tube Connector can be panel mounted with two (2) 6-32 screws (not included) or surface mounted with the 10-32 threaded mounting screws. The mounting screws are electroless nickel plated cold rolled steel with a 10-32 female thread tapped in the head of the screw. This permits the vertical stacking of several Ribbon Tube Connectors. The screws completely recess into the socket retaining bar and allow retaining bar assemblies to fit securely together. A 10-32 nut (not supplied) holds multiple assemblies together when not used as a surface mount. The result is a convenient junction point where numerous tube lines can be connected and disconnected easily.

(Continued on next page)

Ribbon Tube Connector



Ordering Information

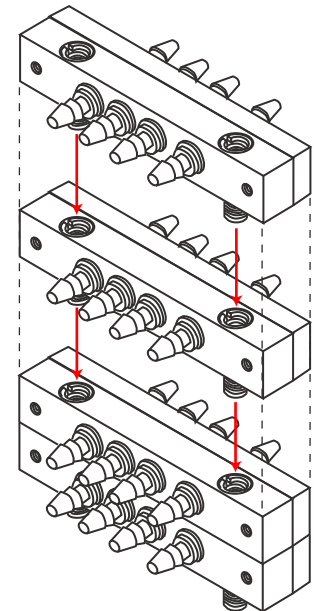
The plug barb assembly and socket assembly are sold separately and are available with all barbs of one size. Separate components of the Ribbon Tube Connector are also available for applications requiring assorted barb sizes.

Product Information

Part Number	Description	Part Number	Description
RTCP-062	Ribbon Tube Plug - 062 barb	RTCS-062	Ribbon Tube Socket - 062 barb
RTCP-110	Ribbon Tube Plug - 110 barb	RTCS-110	Ribbon Tube Socket - 110 barb
RTCP-170	Ribbon Tube Plug - 170 barb	RTCS-170	Ribbon Tube Socket - 170 barb
RTCPB	Ribbon Tube Plug Bar ONLY (with Captive Screws)	RTCSB	Ribbon Tube Socket Bar ONLY (with Mounting Screws)
RTPB-062	Ribbon Tube Plug Bar with 062 barb	RTSB-062	Ribbon Tube Socket Bar with 062 barb
RTPB-110	Ribbon Tube Plug Bar with 110 barb	RTSB-110	Ribbon Tube Socket Bar with 110 barb
RTPB-170	Ribbon Tube Plug Bar with 170 barb	RTSB-170	Ribbon Tube Socket Bar with 170 barb

(Continued)

Retained in a recessed area near the end of the plug is a Buna N O-ring. Often a face seal requires placement and realignment after each connection and disconnection, this design keeps the O-ring in place. This high quality seal ensures a leakproof fit between the plug and the socket.



Materials

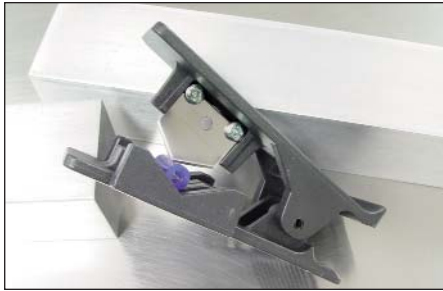
Retaining Bars: Black Anodized Aluminum

Plug/Socket assemblies: Brass, Electroless Nickel Plating

Mounting Screws: Cold Rolled Steel, Electroless Nickel Plating

O-rings: Buna-N - other materials available- contact factory

Tube Cutter



Product Number	Description
TC-1000	Tube Cutter
TCR	Blade Replacement

Precision cutter makes quick, clean and square cuts on all plastic tubing materials.

All dimensions and specifications are subject to change without notice



Polyurethane tubing characteristics include minimal water absorption, high flexibility and opaque color pigments

Durometer Defined Working Pressure Information

70A Durometer tubing is a softer compound that has a very lively, rubbery characteristic. It is extremely flexible, has good memory, resists kinking. This supple tubing installs easily onto barbed fittings but is recommended only for low pressure applications.

85A Durometer tubing is flexible enough to make tight bends without kinking and is designed to work with mini-barb fittings. The materials outstanding memory provides a tight grip requiring no clamping up to 100 psi.

90A Durometer hardness gives additional burst pressure strength needed for larger diameter sizes of PUR tubing. The 1/4 x .170 and 1/4 x 3/16 sizes are designed for optimal flow characteristics, but should only be used with barbed type fittings. Careful attention should be paid to the lower working pressure capabilities of these thinner wall tubings.

95A Durometer tubing is a slightly harder compound that increases wall rigidity to enable it to work with most brands of push-to-connect pneumatic fittings. It offers outstanding toughness and significantly higher working pressures, yet sacrifices very little flexibility.

Temperature consideration

Thermoplastic tubing is affected by temperature. Careful consideration must be given to the reduced pressure capabilities of tubing as temperatures are increased.

The Pressure rating of polyurethane tubing is determined by testing the short term bursting pressure at 75°F. The working pressure is calculated as a ratio of the burst pressure by dividing the burst pressure by an appropriate safety factor. Three-to-one, or four-to-one safety factors are commonly used depending upon the severity of the application. If required, reinforced tubing can offer significantly higher pressure ratings.

Example: If tubing burst pressure is 450 psi @ 75°F, the working pressure with a 3 to 1 safety factor is 150 psi, or with a 4 to 1 safety factor the working pressure would be 112 psi. Safety factors of less than 3 to 1 are not recommended.

Formula:

$$\frac{\text{Burst pressure}}{\text{Safety factor}} = \text{Working pressure}$$

Example:

$$\frac{450 \text{ psi @ } 75^{\circ}\text{F}}{3 \text{ to } 1 \text{ safety factor}} = \frac{150 \text{ psi}}{\text{Working pressure}}$$

Glossary

Acetal plastic tough, stable engineering thermoplastic with a high modulus of elasticity, high strength, good rigidity, dimensional stability, resistance to moisture, solvents, and other chemicals.

Active device A device that has an input(s) which controls a power supply to the device.

Actuator An integral part of a device that transmits force causing the device to act in the intended manner.

Air motor A device which converts pneumatic fluid power into mechanical torque and motion. It usually provides rotary mechanical motion.

Air, compressed (pressure) Air at any pressure greater than atmospheric.

Air, dried Air with moisture content lower than the maximum allowable for a given applications.

Air, free Air at ambient temperature, pressure, relative humidity, and density.

Air, saturated Air at 100% relative humidity, with a dew point equal to temperature.

Air standard Air at a temperature of 68.8° F, a pressure of 14.70 pounds per square inch absolute, and a relative humidity of 36% (0.0750 pounds per cubic foot). In gas industries the temperature of "standard air" is usually given as 60.8° F.

Air (*see fluid*) A gas mixture consisting of nitrogen, oxygen, argon, carbon dioxide, hydrogen, and small quantities of neon, helium and other gases.

AND Device A control device which has its output in the logical 1 state if and only if all the control signals assume the logical 1 state.

Boyle's Law The absolute pressure of a fixed mass of gas varies inversely as the volume, provided the temperature remains constant.

Break-out Force necessary to inaugurate sliding. Expressed in same terms as friction. An excessive break-out valve indicates the development of adhesion.

Charles' Law The volume of a fixed mass of gas varies directly with absolute temperature, provided the pressure remains constant.

Circuit, metered-in A speed control circuit in which the control is achieved by regulating the supply flow to the actuator.

Circuit, metered-out A speed control circuit in which the control is achieved by regulating the exhaust flow from the actuator.

Circuit, sequence A circuit which established the order in which two or more phases of a circuit occur.

Compression set The amount by which a rubber specimen fails to return to original shape after release of the compressive load.

Compressor A device which converts mechanical force and motion into pneumatic fluid power.

Condensation The process of changing a vapor into a liquid condensate by the extraction of heat.

Conductor A component whose primary function is to contain and direct fluid.

Contaminant Any material of substance which is unwanted or adversely affects the fluid power system or components, or both.

Creep The progressive relaxation of a given rubber material while it is under stress. This relaxation eventually results in permanent deformation or "set".

Cushion A device which provides controlled resistance to motion.

Cv Flow coefficient or pneumatic conductance expresses the flow capability of any fixed orifice pneumatic device for a given fluid.

Cylinder cap A cylinder end closure which completely covers the bore area.

Cylinder capacity, extending Volume required for one full extension of a cylinder.

Cylinder, double acting A cylinder in which fluid force can be applied to the moveable element in either direction.

Cylinder, single acting A cylinder in which the fluid force can be applied to the moveable element in only one direction.

Cylinder A device which converts fluid power into linear mechanical force and motion. It usually consists of a movable element such as a piston and a piston rod, plunger or ram, operating within a cylindrical bore.

Detented (maintained) The design intention of a device to maintain the state of its last actuation after the operator force is removed.

Diverter (Valve) A device whose power source at one input port is diverted to one of two or more output ports.

Durometer 1. An instrument for measuring the hardness of rubber. Measures the resistance to the penetration of an indenter point into the surface of rubber. 2. Numerical scale of rubber hardness.

Filter 1. A device whose primary function is the removal by porous media of insoluble contaminants from a liquid or a gas. 2. Chemically inert, finely divided material added to the elastomer to aid in process and improve physical properties.

Fitting a connector or closure for fluid power lines and passages.

Flip flop A digital component or circuit with two stable states and sufficient hysteresis so that it has "memory". Its state is changed with a control pulse; a continuous control signal is not necessary for it to remain in a given state.

Flow rate The volume, mass or weight of a fluid passing through any conductor per unit of time.

Fluid A substance which tends to conform to the outline of its container and capable of flowing as a liquid or a gas.

Fluid logic A branch of fluid power associated with digital signal sensing and information processing, using components with or without moving parts.

Fluid power Energy transmitted and controlled through use of a pressurized fluid.

Fluid, pneumatic A fluid suitable for use in a pneumatic system, usually air.

Gauge damper (snubber) A device employing a fixed or variable restrictor inserted in the pipeline to a pressure gauge to prevent damage to the gauge mechanism caused by rapid fluctuations of fluid pressure.

Gauge, pressure A gauge which indicates the pressure in the system to which it is connected.

Inhibitor Any substance which, when present in very small proportions, slows, prevents or modifies chemical reactions such as corrosion or oxidation.

Lubricator A device which adds controlled or metered amounts of lubricants into a fluid power system.

Manifold A conductor which provides multiple connection ports.

Maximum inlet pressure The maximum rated gauge pressure applied to the inlet port of the regulator.

Memory Tendency of a material to return to original shape after deformation.

Momentary The design intention of a device to return to the normal unactuated state after the operator force is removed.

Muffler A device for reducing gas flow noise. Noise is decreased by back pressure control of gas expansion.

Non-threaded A term applied to exhaust ports without internal threads to prevent connection.

NOR device A control device which has its output in the logical 1 state if and only if all the control signals assume the logical 0 state.

Normally closed (electrical) The state of the output or switch is ON (passing current) with no external influence.

Normally open (electrical) The state of the output or switch is OFF (not passing current) with no external influence.

Normally closed (fluid power) - often referred to as *normally not passing* The state of the output or valve is OFF with no external influence.

Normally open (fluid power) - often referred to as *normally passing* The state of the output or valve is ON with no external influence.

NOT device A control device which has its output in the logical 1 state if and only if the control signal assume the logical 0 state. The NOT device is a single input NOR device.

OR device A control device which has its output in the logical 0 state if and only if all the control signals assume the logical 0 state.

Operator A device that attaches to another assembly and applies force to the actuator of that assembly allowing it to act in the intended manner.

Packing A sealing device consisting of bulk deformable material of one or more mating deformable elements, reshaped by manually adjustable compression to obtain and maintain effectiveness. It usually uses axial compression to obtain radial sealing.

Pascal's Law A pressure applied to a confined fluid at rest is transmitted with equal intensity throughout the fluid.

Passive Device A device that does not have a dedicated supply source and operates solely on the input(s) alone.

Permanent set The deformation remaining after a specimen has been stressed in tension for a definite period and released for a defined period.

Pneumatics Engineering science pertaining to gaseous pressure and flow.

Poppet A component of a valve that seals or opens an internal passage across its full area to allow or prevent flow.

Port A terminus of a passage in a component to which conductors can be connected.

Pressure Force per unit area, usually expressed in pounds per square inch (bar).

Pressure, absolute The pressure above zero, i.e., the sum of atmospheric and gauge pressure. In vacuum related work it is usually expressed in millimeters of mercury (mm-Hg).

Pressure, atmospheric Pressure exerted by the atmosphere at any specific location. (Sea level pressure is approximately 14.7 pounds per square inch absolute. 1 bar=14.7 psi)

Pressure, back The pressure encountered on the return side of a system.

Pressure, breakloose (breakout) The minimum pressure which initiates movement.

Pressure, burst The pressure which causes failure of and consequential loss of fluid through the product envelope.

Pressure, cracking The pressure at which a pressure-operated valve begins to pass fluid.

Pressure, differential (pressure drop) The difference in pressure between any two points of a system or a component

Pressure, proof The non-destructive test pressure, in excess of the maximum rated operating pressure, which causes non permanent deformation, excessive external leakage, or other resulting malfunction.

Pressure, rated The qualified operating pressure which is recommended for a component or system by the manufacturer.

Quick disconnect coupling A component which can quickly join or separate a fluid line without the use of tools or special devices.

Ring,O A ring which has a round cross-section.

Seal, cup A sealing device with a radial base integral with an axial cylindrical projection at its out diameter.

Seal, dynamic A sealing device used between parts that have relative motion.

Seal, elastomer A material having rubber-like properties; i.e., having the capacity for large deformation and rapid, substantially complete, recovery on release from the deforming force.

Selector (Valve) A device which selects from separate power sources at two input ports and directs the selected source to a single output port.

Silencer A device for reducing gas flow noise. Noise is decreased by tuned resonant control of gas expansion.

Squeeze Cross section diametral compression of O-ring between surface of the groove bottom and surface of the other mating metal part in the gland assembly.

Stroke Ratio Each push-button valve selected has a given actuation stroke and force. The Thumb and Cam Operators will provide an increased stroke and decreased force in the ratios noted while providing a correct ergonomic or machine interface for various system applications.

Vacuum Pressure less than ambient atmospheric pressure measured in inches of mercury (Hg").

Valve A device which controls fluid flow direction, pressure or flow rate.

Valve, air A valve for controlling air.

Valve, directional control A valve whose primary function is to direct or prevent flow through selected passages.

Valve, directional control, 3-way A directional control valve whose primary function is to pressurize and exhaust a port.

Valve, directional control, 4-way A directional control valve whose primary function is to pressurize and exhaust two ports.

Valve, flow control (flow metering) A valve whose primary function is to control flow rate.

Valve, needle A flow control valve in which the adjustable control element is a tapered needle. Its usual purpose is the bidirectional control of flow.

Valve, pilot operate (indirect) A valve in which a relatively small flow through an integral flowpath (pilot) controls the movement of the main elements.

Valve, Pilot A valve applied to operate another valve.

Chemical Resistance Information (Tubing Information)

	N	PUR	PE	PVC		N	PUR	PE	PVC		N	PUR	PE	PVC
Acetic Acid, Glacial	-	4	1	4	Ethylene Trichloride	-	4	-	-	Propane	1	3	3	1
Acetic Acid, 30%	-	4	1	4	Ferric Chloride (aq)	-	1	1	1	Propyl Alcohol	-	4	-	-
Acetone	-	4	2	4	Ferric Nitrate (aq)	-	1	2	1	Propylene	-	4	-	-
Acetylene	-	4	1	1	Ferric Sulfate (aq)	-	1	1	1	Propylene Oxide	-	4	-	-
Alkazene	-	4	-	-	Fluorine (Liquid)	4	4	3	4	Pydraul, 10E, 29 ELT	-	4	-	-
Aluminum Chloride (aq)	-	3	2	1	Formaldehyde (RT)	-	4	2	1	Pydraul, 30E, 50E, 65 E	-	4	-	-
Aluminum Nitrate (aq)	-	3	-	-	Formic Acid	3	3	2	1	Pydraul, 115E	-	4	-	-
Ammonia Anhydrous	-	4	2	1	Freon 11	-	4	3	1	Pydraul, 230E, 312C, 540C	-	4	-	-
Ammonia Gas (cold)	-	3	-	-	Freon 12	1	1	3	1	Rapeseed Oil	-	2	-	-
Ammonia Gas (hot)	-	4	-	-	Freon 22	1	4	-	2	Red Oil (MIL-H-5606)	-	1	-	-
Ammonia Chloride (aq)	-	1	1	1	Fuel Oil	-	2	3	1	RJ-1 (MIL-F-23338 B)	-	1	-	-
Ammonium Sulfate (aq)	-	1	1	1	Futural Glucose	-	4	1	1	RP-1 (MIL-F-25576 C)	-	1	-	-
Amyl Alcohol	-	4	2	1	Glue	-	1	1	3	Salt Water	1	2	1	1
Amyl Naphthalene	-	4	-	-	Glycerin	1	1	1	1	Sewage	-	4	-	-
Animal Fats	-	1	-	-	Glycols	1	4	-	-	Silicate Esters	-	1	-	-
Aqua Regia	-	4	2	3	Green Sulfate Liquor	-	1	-	-	Silicone Oils	-	1	1	1
Arsenic Acid	-	3	2	1	Hexane	-	2	3	2	Silver Nitrate	-	1	2	1
Asphalt	-	2	1	1	Hydraulic Oil	-	1	1	1	Skydrol 500	-	4	-	-
ASTM Fuel A	-	2	-	-	Hydrochloric Acid (cold) 37%	-	4	2	2	Skydrol 700	-	4	-	-
ASTM Fuel B	-	3	-	-	Hydrochloric Acid (hot) 37%	-	4	-	-	Soap Solutions	1	3	3	1
ASTM Fuel C	-	3	1	1	Hydrofluoric Acid (Conc.) Cold	-	3	-	-	Sodium Chloride (aq)	1	1	1	1
Barium Chloride (aq)	-	1	1	1	Hydrochloric Acid (Conc.) Hot	-	4	-	-	Sodium Hydroxide (aq)	2	4	2	1
Beer	1	2	1	1	Hydrogen Gas	1	1	1	1	Sodium Peroxide (aq)	-	4	1	2
Beet Sugar Liquors	-	4	1	1	Isobutyl Alcohol	-	4	-	-	Sodium Phosphate (aq)	-	1	-	-
Benzene	1	3	3	3	Isocotane	-	2	-	-	Sodium Sulfate (aq)	-	1	1	1
Benzine	-	2	-	-	Isopropyl Acetate	-	4	2	4	Soy Bean Oil	-	2	1	1
Blast Furnace Gas	-	4	-	-	Isopropyl Alcohol	1	3	-	-	Steam Under 300°F	4	4	-	-
Bleach Solutions	-	4	-	1	Isopropyl Ether	-	2	1	2	Steam Over 300°F	4	4	-	-
Borax	-	1	1	2	Kerosene	1	1	3	4	Stoddard Solvent	-	1	3	3
Boric Acid	-	1	1	1	Lacquers	-	4	2	3	Styrene	-	3	-	4
Brake Fluid	-	4	-	-	Lacquer Solvents	-	4	2	3	Sucrose Solution	-	4	-	-
Brine	-	2	4	3	Lard	-	1	2	1	Sulfuric Acid (Dilute)	-	3	1	1
Bromine Water	4	4	-	-	Lavender Oil	-	4	-	-	Sulfuric Acid (Conc.)	-	4	3	4
Bunker Oil	-	2	-	-	Lead Acetate (aq)	-	4	1	1	Sulfuric Acid (20% Oleum)	-	4	-	-
Butane	1	1	3	3	Linseed Oil	1	2	3	1	Sulfurous Acid	-	3	2	1
Butter	-	1	-	-	Liquid Petroleum Gas	-	-	-	-	Tannic Acid	-	1	2	1
Butyl Alcohol	3	4	1	2	Lubricating Oils	-	2	4	2	Tetrochloroethylene	-	4	2	4
Butylene	-	4	1	1	Lye	-	4	-	1	Toluene	1	4	3	4
Calcium Chloride (aq)	1	1	2	1	Magnesium Chloride (aq)	1	1	1	1	Transformer Oil	-	1	-	-
Calcium Hydroxide (aq)	-	1	2	1	Magnesium Hydroxide (aq)	-	4	1	1	Transmission Fluid Type A	-	1	-	-
Calcium Nitrate (aq)	1	1	-	-	Mercury	1	1	1	2	Trichloroethane	3	4	-	3
Calcium Sulfide (aq)	-	1	-	-	Methane	1	3	-	-	Trichloroethylene	3	4	3	4
Cane Sugar Liquors	-	4	-	1	Methyl Acetate	1	4	2	4	Turbine Oil	-	1	3	1
Carbolic Acid	-	3	2	3	Methyl Acrylate	-	4	-	-	Turpentine	1	4	3	2
Carbon Dioxide	-	1	3	1	Methyl Alcohol	1	4	1	1	Varnish	-	3	3	4
Carbon Acid	-	1	2	1	Methyl Butyl Ketone	-	4	-	1	Vinegar	1	4	2	1
Carbon Monoxide	-	1	2	1	Methyl Chloride	3	4	3	4	Vinyl Chloride	-	4	-	-
Carbon Tetrachloride	3	4	2	2	Methylene Chloride	-	4	3	4	Water	1	1	1	1
Castor Oil	-	1	-	1	Methyl Ethyl Ketone	1	4	2	4	Whiskey, Wines	1	2	3	1
Chlorine (dry)	4	4	2	1	Methyl Isobutyl Ketone	1	4	-	-	White Oil	-	1	-	-
Chlorine (wet)	4	4	-	-	Milk	1	4	1	1	Wood Oil	-	3	-	-
Chloroform	3	4	3	4	Mineral Oil	1	1	2	1	Xylene	2	4	3	4
Chlorox	-	4	-	-	Naphtha	1	2	1	3	Zinc Acetate (aq)	-	4	-	-
Chromic Acid	4	4	1	1	Naphthalene	1	2	1	4	Zinc Chloride (aq)	1	1	1	1
Citric Acid	1	1	1	2	Natural Gas	-	2	-	-					
Coal Tar	-	3	-	-	Neatsfoot Oil	-	1	-	-					
Coconut Oil	-	2	-	1	Nitric Acid (Conc.)	4	4	3	4					
Cod Liver Oil	-	1	-	1	Nitric Acid (Delute.)	4	3	-	4					
Coke Oven Gas	-	4	-	-	Nitroethane	-	4	-	-					
Copper Chloride (aq)	-	1	2	1	Nitrogen	-	1	-	-					
Copper Cyanide (aq)	-	1	2	1	N-Octane	-	4	-	-					
Corn Oil	-	1	3	2	Oleic Acid	1	2	3	3					
Cotton Seed Oil	-	1	2	2	Oleum Spirits	-	3	4	4					
Creosol	4	4	3	4	Olive Oil	-	1	1	3					
Cychlohexane	1	1	2	4	Oxygen-Cold	1	1	-	-					
Denatured Alcohol	-	4	-	-	Oxygen (200-400°F)	-	4	-	-					
Detergent Solution	-	4	1	1	Paint Thinner, Duco	-	4	-	-					
Diesel Oil	-	3	3	1	Perchloric Acid	-	4	-	-					
Dioxane	-	4	-	-	Perchloroethylene	3	4	4	3					
Dowtherm Oil	-	3	-	-	Petroleum- Below 250°F	-	2	-	-					
Dry Cleaning Fluids	-	4	-	-	Petroleum- Above 250°F	4	4	-	-					
Ethane	-	3	-	4	Phenol	4	3	2	3					
Ethyl Acrylate	-	4	-	-	Phenyl Ethyl Ether	-	4	-	-					
Ethyl Alcohol	3	4	-	-	Phosphoric Acid 45%	2	1	2	2					
Ethyl Benzine	-	4	-	-	Pickling Solution	-	4	-	-					
Ethyl Cellulose	-	2	-	-	Picric Acid	3	2	-	4					
Ethyl Chloride	-	2	-	-	Potassium Acetate (aq)	-	4	-	-					
Ethyl Ether	-	3	-	-	Potassium Chloride (aq)	-	1	1	1					
Ethylene Chloride	-	4	3	4	Potassium Cyanide (aq)	-	1	1	1					
Ethylene Glycol	2	4	1	1	Potassium Hydroxide (aq)	3	4	1	1					
Ethylene Oxide	1	4	3	3	Producer Gas	-	1	1	1					

Note: the ratings provided are very general guidelines to be referred to only for initial screening purposes. Specific tubing compounds can be positively or negatively affected by varying temperatures, chemical mixtures and/or static vs. dynamic applications. *Careful testing under actual conditions is essential.*

Accuracy for these ratings is not given or implied.

N= Nylon PUR= Polyurethane
PE= Polyethylene
PVC= Polyvinyl Chloride

Ratings:

- 1= Little or no impact
- 2= Minor effect
- 3= Moderate effect
- 4= Severe effect

Warranty & Warnings

Warranty

Pneumadyne guarantees each product against defects in material and workmanship for one year from date of shipment. Because of a policy of constant improvement, Pneumadyne reserves the right to make design changes and improvements in our products at any time without notice or assuming any obligations to incorporate changes and improvements in products previously sold, nor to replace previously sold products with these changes and improvements.

Warrantied Returns

Any warranty is void if returned product is disassembled or if the configuration has been altered in any way.

Disclaimer

We make no other warranty, expressed or implied.

Remedies

If product fails to perform as warrantied, Pneumadyne will repair or replace, at our option. We will not assume any liability for consequential damages, labor delays or any other charges.

Warnings

Design & Specification

All published information is based on usual manufacturing standards and product applications and is for general reference purposes. Supplied information is in no way a representation of a warranty for product.

Applications

Pneumadyne, Inc. components are designed for specific applications in pneumatic systems. They are tested with filtered and lubricated air under specified limits of temperature and pressure. For special uses with media other than air, for nonindustrial application or for life support systems, contact Pneumadyne, Inc. for more information. Complying with our specifications will ensure safe and proper installation and operation.

Regulators are for use in industrial compressed air applications only and are not to be used where pressure or temperature can exceed rated operating conditions. See Performance Data.

Pressure indicating and feedback devices such as gauges and transducers must be regularly checked and calibrated to insure accuracy. Calibration should be done prior to installation and at regular intervals. Refer to ANSIB40.11974 for standards relating to gauge performance and use. Consult Pneumadyne before using this product with media other than air or in nonindustrial, life support applications.

Suitability for Application

It is the responsibility of the specifying and purchasing organization to determine suitability of any Pneumadyne product for a particular application. The customer assumes all risk in the testing and investigating of a product to be used in a specific application.

Materials Compatibility

Occasionally lubricants or contaminants found in compressed air systems can attack material used in the manufacture of these components, resulting in product failure. The installer should ensure component materials are compatible with the system.

High Pressure Level

Compressed air systems are under a high level of pressure. Any attempt to connect, disconnect or repair these components under these circumstances could result in serious personal injury. Disconnect and vent all pressure sources prior to removal.

Code Compliance

Pneumadyne strongly advises that all installation and repair of components be performed by FPS certified personnel. The installer is cautioned to observe all electrical, mechanical and other codes applicable to the installation and operation of these products.

Repair & Conversion

Components are required to be checked for leakage and proper function prior to installation and operation if they have been disassembled for repair or if their configuration has been altered.

Mixed Wastes

In order for Pneumadyne, Inc. to stay compliant with 40 CFR part 266: Storage, Treatment, Transportation and disposal of Mixed Wastes, and 40 CFR parts 261 and 268 Hazardous Waste Identification Rule (HWIR); Revisions to mixture and Derived from rules, any parts sent back for return to Pneumadyne, Inc. must be cleaned and free from any Media or Chemical upon arrival at our facility.

Catalog Terms & Conditions

This catalog constitutes an offer of sale by Pneumadyne Inc., ("Pneumadyne") of its products. Acceptance of this offer by ordering is subject to the terms and conditions of this offer. Any additional terms and conditions contained in any written or verbal purchase order are objected to and shall not be binding on Pneumadyne unless agreed to in writing. The terms herein shall govern and any conflicting, varying or supplemental provisions shall be null and void.

1. Contract. Acceptance of Pneumadyne's offer occurs and a contract exists upon the submission of a written or verbal purchase order subject to the terms and conditions set forth herein. Such terms and conditions constitute the entire agreement between the parties. No change in such terms and conditions shall be valid unless agreed to in writing by an authorized officer of Pneumadyne.

2. Price. Shall be the price in effect on the date of delivery. Pneumadyne may sell to its other customers at prices that are equal to, greater than, or less than the prices listed in the catalog.

3. Payment. Payment net thirty (30) days after the rendering of Pneumadyne's invoice or credit card or COD upon rendering of invoice dependent upon account type or status. All amounts past due are subject to a late charge of the lesser of one and one-half percent (1 1/2%) per month (being eighteen percent (18%) per annum) or the highest lawful rate. Until payment in full under this agreement, Pneumadyne retains and buyer hereby grants a purchase money security interest pursuant to Minnesota Statute 336.9-201, or the applicable state U.C.C. enactment in the items purchased hereunder. The security interest will cover all accessions and proceeds of the property. Title in the products shall not pass until full payment has been received by Pneumadyne.

4. Tax. Any tax imposed by federal, state or other governmental authority on

the sale of product under this agreement shall be paid by the buyer in addition to the quoted purchase price.

5. Delivery. Delivery term is FOB, Pneumadyne's facility Plymouth, MN. Dates of delivery are estimates of approximate dates of delivery, not a guaranty of a particular day of delivery. Pneumadyne shall not be liable for failure or delay in shipping for any cause of any kind whatsoever beyond the control of Pneumadyne. Pneumadyne may ship +/-5% from accepted quantity due to the yield from the production process. Exceptions must be negotiated to assess the effect on pricing.

6. Inspection. Buyer shall inspect the products at delivery and shall notify Pneumadyne of any defects or discrepancies within three (3) days of receipt of the products. Failure to provide any such notice within such time shall be deemed an acceptance in full of any such delivery. Please verify all information, tolerances, dimensions, compounds and materials. Except in the particulars specified by Buyer and expressly agreed to in writing by Pneumadyne, all material shall be produced in accordance with Pneumadyne's standard practices. All material, including that produced to meet an exact specification, shall be subject to tolerances and variations consistent with usages of the trade and regular mill practices concerning: dimension, weight, straightness, section, composition and mechanical properties; normal variations in surface, internal conditions and quality; and deviations from tolerances and variations consistent with practical testing and inspection methods.

7. Limited Warranty. **Pneumadyne warrants that the products will be free from defects in materials and workmanship for one year from the date of shipment. During the warranty period, Pneumadyne will, at its option: (1) provide replacement parts**

necessary to repair the products, (2) replace the products with a comparable product, or (3) refund the amount paid by Buyer for the products upon return. Custom orders CANNOT be returned for credit. The warranties provided for herein shall be governed by Pneumadyne's warranty policies in effect on the date of shipment. Pneumadyne shall have no obligation to Buyer with respect to providing any warranty on any products for which Pneumadyne has not received full payment from Buyer and Pneumadyne's warranties do not extend beyond the original Buyer and may not be assigned or passed through by Buyer. This warranty is void if product has been disassembled or used or if the configuration has been altered in any way.

PNEUMADYNE DOES NOT AUTHORIZE ANY OTHER PERSON TO ACT ON ITS BEHALF, TO MODIFY OR CHANGE THIS WARRANTY, NOR TO ASSUME ANY OTHER WARRANTY OR LIABILITY CONCERNING THE PRODUCTS.

8. Disclaimer of Warranty/Limitation of Liability. Pneumadyne undertakes no responsibility that the products will be fit for any particular purpose for which Buyer may be buying the products, except as otherwise provided in this Agreement, and Pneumadyne disclaims all other warranties and conditions, express or implied. The right to return defective products, as described in Section 7 above, shall constitute Pneumadyne's sole liability and Buyer's exclusive remedy in connection with any claim of any kind relating to the quality, condition or performance of any Products, whether such claim is based upon principles of contract, warranty, negligence or other tort, breach of any statutory duty, principles of indemnity or contribution, or otherwise.

PNEUMADYNE (INCLUDING ITS SUBSIDIARIES, AFFILIATES, OFFICERS,

Catalog Terms & Conditions

DIRECTORS, EMPLOYEES, AGENTS OR SUBCONTRACTORS, ALL OF WHICH ARE REFERRED TO HEREIN COLLECTIVELY AS THE "PNEUMADYNE AFFILIATES") SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCE TO BUYER OR ANY OTHER PARTY FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL OR EXEMPLARY DAMAGES ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PRODUCTS OR OTHERWISE, INCLUDING BUT NOT LIMITED TO DAMAGES FOR LOST PROFITS, LOSS OF THE PRODUCTS OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF SUBSTITUTE OR REPLACEMENT EQUIPMENT, FACILITIES OR SERVICES, DOWN TIME, BUYER'S TIME, LOST DATA, INJURY TO PROPERTY OR ANY DAMAGES OR SUMS PAID BY BUYER TO THIRD PARTIES, EVEN IF PNEUMADYNE OR ANY OF THE PNEUMADYNE AFFILIATES HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE FOREGOING LIMITATION OF LIABILITY SHALL APPLY WHETHER ANY CLAIM IS BASED UPON PRINCIPLES OF CONTRACT, WARRANTY, NEGLIGENCE, OR OTHER TORT, BREACH OF ANY STATUTORY DUTY, PRINCIPLES OF INDEMNITY OR CONTRIBUTION, THE FAILURE OF ANY LIMITED OR EXCLUSIVE REMEDY TO ACHIEVE ITS ESSENTIAL PURPOSE, OR OTHERWISE.

IN NO EVENT SHALL PNEUMADYNE OR ANY PNEUMADYNE AFFILIATE BE LIABLE TO BUYER OR ANY OTHER PARTY FOR LOSS, DAMAGE, OR INJURY OF ANY KIND OR NATURE ARISING OUT OF OR IN CONNECTION WITH THESE TERMS AND CONDITIONS IN EXCESS OF THE NET PURCHASE PRICE OF THE PRODUCTS ACTUALLY DELIVERED TO AND PAID FOR BY BUYER HEREUNDER. PNEUMADYNE DISCLAIMS ANY WARRANTIES OF NON-INFRINGEMENT

MENT WITH RESPECT TO THE PRODUCTS AND NONE OF PNEUMADYNE OR ANY PNEUMADYNE AFFILIATE SHALL HAVE ANY DUTY TO DEFEND, INDEMNIFY, OR HOLD HARMLESS BUYER FROM AND AGAINST ANY OR ALL DAMAGES OR COSTS INCURRED BY BUYER ARISING FROM THE INFRINGEMENT OF PATENTS OR TRADEMARKS OR VIOLATION OF COPYRIGHTS BY ANY OF THE PRODUCTS.

9. Patent and Copyright. Buyer shall with respect to product manufactured by Pneumadyne in accordance with designs, processes or formulas supplied, determined or requested by buyer, defend Pneumadyne at buyer's expense and pay all costs and damages awarded in any suit brought against Pneumadyne for infringement of any patent by reason of the use of such designs, processes or formulas, provided Pneumadyne notifies buyer in writing of any claim or suit for infringement and tenders defense to Buyer.

10. Custom Products. Pneumadyne reserves the right to use content and/or images of all products manufactured by Pneumadyne, Inc. in printed advertising materials, internet web pages, trade show booth exhibits, broadcast media and marketing materials to promote custom design & manufacturing capabilities. To request that images and content manufactured for a specific application not be used, please submit your request to the Marketing Department at sales@pneumadyne.com upon receipt of our quotation.

11. Force Majeure. Pneumadyne shall not be held responsible for any failure of performance to make timely delivery of all or any part of the products in the event such failure was due, in whole or in part, to federal or municipal action, statute, ordinance or regulation, strike or other labor trouble, fire or other damage to or destruction of, in whole or in part, the products or the manufacturing facility

for the products, the lack of or inability to obtain raw materials, labor, fuel, electrical power, water or supplies, or any other cause, act of God, contingency or circumstances not subject to the reasonable control of Pneumadyne, which causes delays or hinders the manufacture or delivery of products. Pneumadyne shall determine in good faith the extent to which it can reasonably control a cause, contingency, or circumstance that affects the performance of its obligations.

12. Remedies. The remedies provided to Pneumadyne shall be cumulative and in addition to any other remedies provided in law or equity. If Pneumadyne retains an attorney to collect any amount due under this contract Buyer shall pay Pneumadyne its costs and expenses including but not limited to attorney fees. A waiver of a breach of any provision hereunder shall not constitute a waiver of any other breach. The invalidity in the whole or in part of any provision hereof shall not affect the validity of any other provision.

13. Applicable Law. The contract resulting from the acceptance of Pneumadyne's offer shall be governed by and construed according to the laws of the state of Minnesota. Buyer consents to the personal jurisdiction of the state and federal courts located in the State of Minnesota in connection with any controversy related in any way to this contract or any transaction or matter relating to this contract, waives any argument that venue in such forums is not convenient, and agrees that any litigation initiated by the buyer against Pneumadyne relating in any way to this transaction shall be venued in either the District Court of Hennepin County, Minnesota, or the United States District Court, District of Minnesota, Fourth Division.

02-3	A0-31-2	A11-31-47	AP-1	C021701
02-4	A0-31-3	A11-31-64	AP-2	C021703
22	A0-31-4	A11-31-66	AP45-1/8-DP	C021705
25	A0-31-5	A11-31-67	AP45-1/8-SR	C021707
25F	A0-31-6	A11-31-74	AP45-100-DP	C021721
26	A0-31-7	A11-31-76	AP45-100-SR	C021723
27	A11-20-14	A11-31-77	APLP-1	C021725
28FL	A11-20-16	A3-30-1	BA-1	C021727
28FT	A11-20-17	A3-30-2	BF-062	C030101
29L	A11-20-41	A3-30-3	BF-062-2	C030103
30	A11-20-44	A3-30-4	BF-062-2F	C030105
32-1	A11-20-46	A3-30-5	BF-062-2FL	C030107
32-2	A11-20-47	A3-30-6	BF-062-2L	C030109
32-3	A11-20-64	A3-30-7	BF-110-2	C030121
32-4	A11-20-66	A4C-1/8-DP	BF-110-2L	C030123
33	A11-20-67	A4C-1/8-PK	BF-140	C030125
34	A11-20-74	A4C-1/8-SR	BF-170-1	C030127
34A	A11-20-76	A4C-100-DP	BF-170-2	C030201
52-1	A11-20-77	A4C-100-PK	BF-170-2F	C030203
52-2	A11-21-14	A4C-100-SR	BF-170-2FL	C030205
52-3	A11-21-16	A4C-125-DP	BF-170-2L	C030207
52-4	A11-21-17	A4C-125-PK	BFC-32	C030209
54-1	A11-21-44	A4C-125-SR	BFC-32P	C030210
54-2	A11-21-46	A4C-156-DP	BFCR-32	C030221
54-3	A11-21-47	A4C-156-PK	BFCR-32P	C030223
54-4	A11-21-64	A4C-156-SR	C021401	C030225
6-24-M2	A11-21-66	A4C-250-DP	C021403	C030227
A0-20-1	A11-21-67	A4C-250-PK	C021405	C030301
A0-20-2	A11-21-74	A4C-250-SR	C021407	C030303
A0-20-3	A11-21-76	A4N-100-DP	C021421	C030305
A0-20-4	A11-21-77	A4N-100-PK	C021423	C030307
A0-20-5	A11-30-14	A4N-100-SR	C021425	C030321
A0-20-6	A11-30-16	AJB-1	C021427	C030323
A0-20-7	A11-30-17	AJB-1.5	C021501	C030325
A0-21-1	A11-30-41	AJB-2	C021503	C030327
A0-21-2	A11-30-44	AJH	C021505	C030401
A0-21-3	A11-30-46	AJK-AN	C021507	C030403
A0-21-4	A11-30-47	AJK-HAN	C021521	C030405
A0-21-5	A11-30-64	AM45-1/8-SR	C021523	C030407
A0-21-6	A11-30-66	AM45-100-SR	C021525	C030421
A0-21-7	A11-30-67	AMM-20-1616	C021527	C030423
A0-30-1	A11-30-74	AMM-30-1616	C021601	C030425
A0-30-2	A11-30-76	AN-1	C021603	C030427
A0-30-3	A11-30-77	AN-2	C021605	C030501
A0-30-4	A11-31-14	AN-3	C021607	C030503
A0-30-5	A11-31-16	AN-4	C021621	C030505
A0-30-6	A11-31-17	AN-5	C021623	C030507
A0-30-7	A11-31-44	AN-6	C021625	C030509
A0-31-1	A11-31-46	AOT	C021627	C030510

C030521	C032123	C040425	C042403	C500
C030523	C032125	C040427	C042501	C520101
C030525	C032127	C040501	C042501-HD	C520102
C030527	C032201	C040503	C042502	C550001
C030601	C032203	C040505	C042502-HD	C550002
C030603	C032205	C040507	C042503	C550003
C030605	C032207	C040521	C042503-HD	C550004
C030607	C032221	C040523	C042601	C550005
C030621	C032223	C040525	C042601-HD	C550400
C030623	C032225	C040527	C042602	C550500
C030625	C032227	C040601	C042602-HD	C550600
C030627	C032301	C040603	C042603	C550700
C030701	C032303	C040605	C042603-HD	C570501
C030703	C032305	C040621	C042801	CA-1
C030705	C032307	C040623	C042802	CA-2
C030707	C032321	C040625	C042803	CA-4
C030721	C032323	C040627	C042901	CCV-44-4
C030723	C032325	C040701	C042903	CCV-F1-1
C030725	C032327	C040703	C050101	CCV-F1-2
C030727	C032401	C040705	C050102	CCV-F1-3
C030901	C032403	C040721	C050104	CCV-F1-4
C030903	C032405	C040723	C050201	DA10-125-22
C030905	C032407	C040725	C050202	DA10-125-33
C030907	C032421	C040901	C050204	DA10-125-44
C030921	C032423	C040903	C050205	DA10-125-55
C030923	C032425	C040905	C050206	DA20-250-22
C030925	C032427	C040907	C050210	DA20-250-33
C030927	C040101	C040921	C050301	DA20-250-44
C031001	C040103	C040923	C050302	DA20-250-55
C031003	C040105	C040925	C050401	DP-11
C031005	C040107	C040927	C050401-SS	DP-22
C031007	C040121	C041001	C050501	E1/8-1/4
C031021	C040123	C041003	C050501-SS	E10-1/8
C031023	C040125	C041005	C050502	EA-LB10
C031025	C040127	C041007	C050503	EA-LB10-SLOT
C031027	C040201	C041021	C050504	EA-LB20
C032001	C040203	C041023	C050601	EA-LB20-SLOT
C032003	C040205	C041025	C050602	EA-LB25
C032005	C040207	C041027	C050603	EA-LB25-SLOT
C032007	C040221	C042201	C050604	EA-LB30
C032021	C040223	C042201-HD	C050605	EA-LB30-SLOT
C032023	C040225	C042203	C070301	EA-LB40
C032025	C040227	C042203-HD	C070303	EA-LB40-SLOT
C032027	C040401	C042301	C070501	EA-LB50
C032101	C040403	C042301-HD	C070503	EA-LB50-SLOT
C032103	C040405	C042303	C070505	EA-T10
C032105	C040407	C042303-HD	C070601	EA-T10-SLOT
C032107	C040421	C042401	C070603	EA-T20
C032121	C040423	C042402	C250	EA-T20-SLOT

EA-T25	EB40	EFB10-1/8	EFT50-1/8	ELB35-4-28
EA-T25-SLOT	EB40-1/16	EFB20	EFT60-1/4	ELB35-M6
EA-T30	EB40-1/4	EFB20-1/4	EFT60-1/8	ELB40
EA-T30-SLOT	EB40-1/8	EFB20-1/8	EFT80-1/4	ELB40-1/16
EA-T40	EB40-250	EFB25-1/8	EL10	ELB40-1/4
EA-T40-SLOT	EB40-3/8	EFB30	EL20	ELB40-1/4-S
EA-T50	EB40-4-28	EFB30-1/4	EL25	ELB40-1/8
EA-T50-SLOT	EB40-M3	EFB30-1/8	EL30	ELB40-3/8
EB10	EB40-M5	EFB35-1/8	EL40	ELB40-4-28
EB10-1/16	EB40-M6	EFB40	EL60	ELB40-M3
EB10-1/4	EB50	EFB40-1/4	EL80	ELB40-M5
EB10-1/8	EB50-1/16	EFB40-1/8	ELB10	ELB40-M6
EB10-250	EB50-1/4	EFB50-1/4	ELB10-1/16	ELB50-1/16
EB10-4-28	EB50-1/8	EFB50-1/8	ELB10-1/4	ELB50-1/4
EB10-M3	EB50-4-28	EFB60-1/4	ELB10-1/8	ELB50-1/8
EB10-M5	EB60	EFB60-1/8	ELB10-4-28	ELB50-3/8
EB10-M6	EB60-1/16	EFB80-1/4	ELB10-M3	ELB50-4-28
EB20	EB60-1/4	EFB80-1/8	ELB10-M5	ELB50-M6
EB20-1/16	EB60-1/8	EFLB10	ELB10-M6	ELB60-1/16
EB20-1/4	EB60-3/8	EFLB10-1/4	ELB20	ELB60-1/4
EB20-1/8	EB60-4-28	EFLB10-1/8	ELB20-1/16	ELB60-1/8
EB20-250	EB70-1/4	EFLB10-S	ELB20-1/4	ELB60-3/8
EB20-3/8	EB70-1/8	EFLB20	ELB20-1/8	ELB80-1/4
EB20-4-28	EB80-1/4	EFLB20-1/4	ELB20-4-28	ELB80-1/8
EB20-M3	EB80-1/8	EFLB20-1/8	ELB20-M3	ELB80-3/8
EB20-M5	EB80-3/8	EFLB20-S	ELB20-M5	EM3-10
EB20-M6	EBK-10	EFLB25-1/4	ELB20-M6	EM3-M6
EB25	EBK-20	EFLB25-1/8	ELB25	EM5-1/8
EB25-1/16	EBK-25	EFLB30-1/4	ELB25-1/16	EM5-10
EB25-1/4	EBK-30	EFLB30-1/8	ELB25-1/4	EM6-1/8
EB25-1/8	EBK-30-4-28	EFLB35-1/4	ELB25-1/8	EM6-M6
EB25-250	EBK-40-20	EFLB35-1/8	ELB25-4-28	ERB1/4-1/16
EB25-3/8	EBK-40-25	EFLB40-1/4	ELB25-M3	ERB1/4-1/8
EB25-4-28	EBK-40-5/16	EFLB40-1/8	ELB25-M5	ERB1/4-10
EB25-M3	EBK-60-1/8	EFLB50-1/4	ELB25-M6	ERB1/8-1/16
EB25-M5	EBK-60-3/8	EFLB50-1/8	ELB30	ERB4-28-10
EB25-M6	EC10	EFLB60-1/4	ELB30-1/16	ERC20-10
EB30	EC20	EFLB60-1/8	ELB30-1/4	ERC30-10
EB30-1/16	EC20-SL	EFLB80-1/4	ELB30-1/4-S	ERC30-20
EB30-1/4	EC25	EFT10-1/4	ELB30-1/8	ERC30-25
EB30-1/8	EC30	EFT10-1/8	ELB30-3/8	ERC40-10
EB30-250	EC35	EFT20-1/4	ELB30-4-28	ERC40-20
EB30-3/8	EC40	EFT20-1/8	ELB30-M3	ERC40-25
EB30-4-28	EC50	EFT25-1/4	ELB30-M3F	ERC40-30
EB30-M3	EC60	EFT30-1/4	ELB30-M5	ERC50-30
EB30-M5	EC70	EFT30-1/8	ELB30-M6	ERC50-35
EB30-M6	EC80	EFT40-1/4	ELB35	ERC60-20
EB35	EFB10	EFT40-1/8	ELB35-1/4	ERC60-30
EB35-1/4	EFB10-1/4	EFT50-1/4	ELB35-1/8	ERC60-40

ERC80-60	ET20-1/8	ET80-3/8	F11-20-64	F4C-1/8-SR
ERT10-30-10	ET20-4-28	ETB10	F11-20-66	F4C-100-SR
ERT20-10-20	ET20-M3	ETB20	F11-20-67	F4C-125-SR
ERT30-10-10	ET20-M5	ETB25	F11-20-74	F4C-156-SR
ERT30-10-30	ET20-M6	ETB30	F11-20-76	F4C-250-SR
ERT30-20-20	ET25	ETB35	F11-20-77	F4N-100-SR
ERT30-20-30	ET25-1/16	ETB40	F11-21-14	FC-32
ERT30-25-30	ET25-1/4	EX10	F11-21-16	FC-52
ERT30-30-10	ET25-1/8	EX20	F11-21-17	FP45-1/8-SR
ERT30-40-30	ET25-4-28	EX25	F11-21-44	FP45-100-SR
ERT40-10-40	ET25-M3	EX30	F11-21-46	FPA
ERT40-20-40	ET25-M5	EX40	F11-21-47	FPB-30*
ERT40-30-30	ET25-M6	EX50	F11-21-64	H0-20-1
ERT40-30-40	ET30	EX60	F11-21-66	H0-20-2
ERT40-40-20	ET30-1/16	EX80	F11-21-67	H0-20-3
ERT40-40-30	ET30-1/4	F0-20-1	F11-21-74	H0-20-4
ERT50-20-50	ET30-1/8	F0-20-2	F11-21-76	H0-20-5
ERT50-30-50	ET30-3/8	F0-20-3	F11-21-77	H0-20-6
ERT60-20-30	ET30-4-28	F0-20-4	F11-30-14	H0-20-7
ERT60-20-60	ET30-M3	F0-20-5	F11-30-16	H0-21-1
ERT60-30-20	ET30-M5	F0-20-6	F11-30-17	H0-21-2
ERT60-30-30	ET30-M6	F0-20-7	F11-30-44	H0-21-3
ERT60-30-40	ET35	F0-21-1	F11-30-46	H0-21-4
ERT60-30-60	ET35-M6	F0-21-2	F11-30-47	H0-21-5
ERT60-40-30	ET40	F0-21-3	F11-30-64	H0-21-6
ERT60-40-60	ET40-1/16	F0-21-4	F11-30-66	H0-21-7
ERT60-60-30	ET40-1/4	F0-21-5	F11-30-67	H0-30-1
ERT60-60-40	ET40-1/8	F0-21-6	F11-30-74	H0-30-2
ERT60-80-60	ET40-1/8-90	F0-21-7	F11-30-76	H0-30-3
ERT80-20-80	ET40-3/8	F0-30-1	F11-30-77	H0-30-4
ERT80-30-80	ET40-4-28	F0-30-2	F11-31-14	H0-30-5
ERT80-60-80	ET40-M3	F0-30-3	F11-31-16	H0-30-6
ERX30-10-10-10	ET40-M5	F0-30-4	F11-31-17	H0-30-7
ERX30-10-30-10	ET40-M6	F0-30-5	F11-31-44	H0-31-1
ERX30-20-30-20	ET50	F0-30-6	F11-31-46	H0-31-2
ERX40-20-40-20	ET50-1/16	F0-30-7	F11-31-47	H0-31-3
ERX40-40-20-40	ET50-1/4	F0-31-1	F11-31-64	H0-31-4
ERX80-40-80-40	ET50-1/8	F0-31-2	F11-31-66	H0-31-5
ET10	ET50-3/8	F0-31-3	F11-31-67	H0-31-6
ET10-1/16	ET50-4-28	F0-31-4	F11-31-74	H0-31-7
ET10-1/4	ET50-M6	F0-31-5	F11-31-76	H11-20-14
ET10-1/8	ET60	F0-31-6	F11-31-77	H11-20-16
ET10-4-28	ET60-1/4	F0-31-7	F3-30-1	H11-20-17
ET10-M3	ET60-1/8	F11-20-14	F3-30-2	H11-20-44
ET10-M5	ET60-3/8	F11-20-16	F3-30-3	H11-20-46
ET10-M6	ET70	F11-20-17	F3-30-4	H11-20-47
ET20	ET80	F11-20-44	F3-30-5	H11-20-64
ET20-1/16	ET80-1/4	F11-20-46	F3-30-6	H11-20-66
ET20-1/4	ET80-1/8	F11-20-47	F3-30-7	H11-20-67

H11-20-74	H4C-1/8-DT	M10-125-3	M10-125-9-90	M20-250-10-PPN
H11-20-76	H4C-100-DT	M10-125-3-90	M10-125-9-90W	M20-250-10-SS
H11-20-77	H4C-125-DT	M10-125-3-90W	M10-125-9-BRS	M20-250-10W
H11-21-14	H4C-156-DT	M10-125-3-BRS	M10-125-9-NYN	M20-250-2
H11-21-16	H4C-250-DT	M10-125-3-NYN	M10-125-9-PPN	M20-250-2-90
H11-21-17	H4N-100-DT	M10-125-3-PPN	M10-125-9-SS	M20-250-2-90W
H11-21-41	HAN-1	M10-125-3-SS	M10-125-9W	M20-250-2-BRS
H11-21-44	HAN-2	M10-125-3W	M10-250-2	M20-250-2-NYN
H11-21-46	HAN-3	M10-125-4	M20-125-10	M20-250-2-PPN
H11-21-47	HAN-4	M10-125-4-90	M20-125-10-90	M20-250-2-SS
H11-21-64	HAN-5	M10-125-4-90W	M20-125-10-90W	M20-250-2W
H11-21-66	HAN-6	M10-125-4-BRS	M20-125-10W	M20-250-3
H11-21-67	HDO	M10-125-4-NYN	M20-125-2	M20-250-3-90
H11-21-74	HDOL	M10-125-4-PPN	M20-125-2-90	M20-250-3-90W
H11-21-76	HM45-1/8-DT	M10-125-4-SS	M20-125-2-90W	M20-250-3-BRS
H11-21-77	HM45-100-DT	M10-125-4W	M20-125-2W	M20-250-3-NYN
H11-30-14	HMM-20-1616	M10-125-5	M20-125-3	M20-250-3-PPN
H11-30-16	HMM-30-1616	M10-125-5-90	M20-125-3-90	M20-250-3-SS
H11-30-17	HP45-1/8-DT	M10-125-5-90W	M20-125-3-90W	M20-250-3W
H11-30-44	HP45-100-DT	M10-125-5-BRS	M20-125-3W	M20-250-4
H11-30-46	JB125-10	M10-125-5-NYN	M20-125-4	M20-250-4-90
H11-30-47	JB125-4	M10-125-5-PPN	M20-125-4-90	M20-250-4-90W
H11-30-61	JB125-6	M10-125-5-SS	M20-125-4-90W	M20-250-4-BRS
H11-30-64	JB125-8	M10-125-5W	M20-125-4W	M20-250-4-NYN
H11-30-66	JB250-10	M10-125-6	M20-125-5	M20-250-4-PPN
H11-30-67	JB250-4	M10-125-6-90	M20-125-5-90	M20-250-4-SS
H11-30-71	JB250-6	M10-125-6-90W	M20-125-5-90W	M20-250-4W
H11-30-74	JB250-8	M10-125-6-BRS	M20-125-5W	M20-250-5
H11-30-76	JB32-10	M10-125-6-NYN	M20-125-6	M20-250-5-90
H11-30-77	JB32-4	M10-125-6-PPN	M20-125-6-90	M20-250-5-90W
H11-31-14	JB32-6	M10-125-6-SS	M20-125-6-90W	M20-250-5-BRS
H11-31-16	JB32-8	M10-125-6W	M20-125-6W	M20-250-5-NYN
H11-31-17	KEY-30	M10-125-7	M20-125-7	M20-250-5-PPN
H11-31-44	M10-125-10	M10-125-7-90	M20-125-7-90	M20-250-5-SS
H11-31-46	M10-125-10-90	M10-125-7-90W	M20-125-7-90W	M20-250-5W
H11-31-47	M10-125-10-90W	M10-125-7-BRS	M20-125-7W	M20-250-6
H11-31-64	M10-125-10-BRS	M10-125-7-NYN	M20-125-8	M20-250-6-90
H11-31-66	M10-125-10-NYN	M10-125-7-PPN	M20-125-8-90	M20-250-6-90W
H11-31-67	M10-125-10-PPN	M10-125-7-SS	M20-125-8-90W	M20-250-6-BRS
H11-31-74	M10-125-10-SS	M10-125-7W	M20-125-8W	M20-250-6-NYN
H11-31-76	M10-125-10W	M10-125-8	M20-125-9	M20-250-6-PPN
H11-31-77	M10-125-2	M10-125-8-90	M20-125-9-90	M20-250-6-SS
H3-30-1	M10-125-2-90	M10-125-8-90W	M20-125-9-90W	M20-250-6W
H3-30-2	M10-125-2-90W	M10-125-8-BRS	M20-125-9W	M20-250-7
H3-30-3	M10-125-2-BRS	M10-125-8-NYN	M20-250-10	M20-250-7-90
H3-30-4	M10-125-2-NYN	M10-125-8-PPN	M20-250-10-90	M20-250-7-90W
H3-30-5	M10-125-2-PPN	M10-125-8-SS	M20-250-10-90W	M20-250-7-BRS
H3-30-6	M10-125-2-SS	M10-125-8W	M20-250-10-BRS	M20-250-7-NYN
H3-30-7	M10-125-2W	M10-125-9	M20-250-10-NYN	M20-250-7-PPN

M20-250-7-SS	M30-250-6-90W	M30-375-9W	MSV10-8-M5	PB250-1/8
M20-250-7W	M30-250-6W	M32-10	MSV10-CP	PB250-1/8-316
M20-250-8	M30-250-7	M32-4	MSV15-1	PB250-1032
M20-250-8-90	M30-250-7-90	M32-5	MSV15-10	PB375-1/8
M20-250-8-90W	M30-250-7-90W	M32-6	MSV15-10-M5	PBF-*
M20-250-8-BRS	M30-250-7W	M32-8	MSV15-1-156	PBR-*
M20-250-8-NYN	M30-250-8	M35-250-10	MSV15-12	PBV-10/32
M20-250-8-PPN	M30-250-8-90	M35-250-2	MSV15-12-M5	PBV-2
M20-250-8-SS	M30-250-8-90W	M35-250-3	MSV15-1-M5	PBV-4
M20-250-8W	M30-250-8W	M35-250-4	MSV15-1-M5P	PFB156-1/8
M20-250-9	M30-250-9	M35-250-5	MSV15-1P	PFB250-1/4
M20-250-9-90	M30-250-9-90	M35-250-6	MSV15-2	PFB250-1/8
M20-250-9-90W	M30-250-9-90W	M35-250-7	MSV15-2-M5	PFC0-1
M20-250-9-BRS	M30-250-9W	M35-250-8	MSV15-4	PFC0-2
M20-250-9-NYN	M30-375-10	M35-250-9	MSV15-4-M5	PFC0-3
M20-250-9-PPN	M30-375-10-90	M35-375-10	MSV15-6	PFC0-4
M20-250-9-SS	M30-375-10-90W	M35-375-2	MSV15-6-M5	PFC0-5
M20-250-9W	M30-375-10W	M35-375-3	MSV15-8	PFC0-6
M20-375-10	M30-375-2	M35-375-4	MSV15-8-M5	PFC0-7
M20-375-2	M30-375-2-90	M35-375-5	MSV15-CP	PFC11-14
M20-375-3	M30-375-2-90W	M35-375-6	MSV6-1	PFC11-16
M20-375-4	M30-375-2W	M35-375-7	MSV6-2	PFC11-17
M20-375-5	M30-375-3	M35-375-8	MSV6-3	PFC11-41
M20-375-6	M30-375-3-90	M35-375-9	MSV6-4	PFC11-44
M20-375-7	M30-375-3-90W	MB-1	MSV6-5	PFC11-46
M20-375-8	M30-375-3W	MB-1F	MSV8-1	PFC11-47
M20-375-9	M30-375-4	MPB-30-*	MSV8-10	PFC11-64
M30-250-10	M30-375-4-90	MPS-6-100	MSV8-2	PFC11-66
M30-250-10-90	M30-375-4-90W	MPS-6-100-S	MSV8-3	PFC11-67
M30-250-10-90W	M30-375-4W	MS32-10	MSV8-4	PFC11-74
M30-250-10W	M30-375-5	MS32-4	MSV8-5	PFC11-76
M30-250-2	M30-375-5-90	MS32-6	MSV8-6	PFC11-77
M30-250-2-90	M30-375-5-90W	MS32-8	MSV8-7	PFC11R-14
M30-250-2-90W	M30-375-5W	MSV10-1	MSV8-8	PFC11R-16
M30-250-2W	M30-375-6	MSV10-10	MSV8-9	PFC11R-17
M30-250-3	M30-375-6-90	MSV10-10-M5	MT32-10	PFC11R-44
M30-250-3-90	M30-375-6-90W	MSV10-1-156	MT32-4	PFC11R-46
M30-250-3-90W	M30-375-6W	MSV10-12	MT32-6	PFC11R-47
M30-250-3W	M30-375-7	MSV10-12-M5	MT32-8	PFC11R-64
M30-250-4	M30-375-7-90	MSV10-1-M5	N2-2	PFC11R-66
M30-250-4-90	M30-375-7-90W	MSV10-1-M5P	NV-32	PFC11R-67
M30-250-4-90W	M30-375-7W	MSV10-1P	NV-52	PFC11R-74
M30-250-4W	M30-375-8	MSV10-2	PAV-10	PFC11R-76
M30-250-5	M30-375-8-90	MSV10-2-M5	PB125-1/8	PFC11R-77
M30-250-5-90	M30-375-8-90W	MSV10-4	PB125-1032	PFLS156-1/8
M30-250-5-90W	M30-375-8W	MSV10-4-M5	PB156-1/8	PFLS250-1/8
M30-250-5W	M30-375-9	MSV10-6	PB156-1/8-316	PFLS312-1/8
M30-250-6	M30-375-9-90	MSV10-6-M5	PB156-1032	PLB156-1/8
M30-250-6-90	M30-375-9-90W	MSV10-8	PB250-1/4	PLB250-1/8

PLB312-1/8	PPC11-11	PU3-125-*C	QE11-P-18	R0-NP-4
PLS125-1/8	PPC11-14	PU3-250-*L	QE11-P-41	R0-NP-5
PLS156-1/8	PPC11-16	PU-375*	QE11-P-44	R0-NP-6
PLS156-1/8-316	PPC11-17	PU-375-*R	QE11-P-46	R0-NP-7
PLS156-1032	PPC11-18	PU-375F-*	QE11-P-47	R0-RK-1
PLS250-1/8	PPC11-41	PU-375PB-*	QE11-P-48	R0-RK-2
PLS250-1/8-316	PPC11-44	PU-375R-*	QE11-P-61	R0-RK-3
PLS375-1/8	PPC11-46	PU4-125-*C	QE11-P-64	R0-RK-4
PMC-110	PPC11-47	PU4-250-*L	QE11-P-66	R0-RK-5
PMC-170	PPC11-48	PU-468F*	QE11-P-67	R0-RK-6
PMCBH-062	PPC11-61	PU-562F*	QE11-P-68	R0-RK-7
PMCBH-10/32	PPC11-64	PU-750F*	QE11-P-71	R0-RP-1
PMCBH-110	PPC11-66	PUC-125*	QE11-P-74	R0-RP-2
PMCBH-170	PPC11-67	PUC2-125*	QE11-P-76	R0-RP-3
PMCIL-062	PPC11-68	PUC2-250*	QE11-P-77	R0-RP-4
PMCIL-10/32	PPC11-71	PUC-250*	QE11-P-78	R0-RP-5
PMCIL-110	PPC11-74	PUMC4-125*	QE11-S-11	R0-RP-6
PMCIL-170	PPC11-76	PUMC4-250*	QE11-S-14	R0-RP-7
PMCM-062	PPC11-77	PUMC6-125*	QE11-S-16	R11-NK-14
PMCM-10/32	PPC11-78	PUMC8-250*	QE11-S-17	R11-NK-16
PMCM-110	PPR-S-100	PY156	QE11-S-18	R11-NK-17
PMCM-170	PT156	QE10-5G5	QE11-S-41	R11-NK-44
PMG-100	PT156-316	QE10-7MF	QE11-S-44	R11-NK-46
PMG-160	PT250	QE10-FAF	QE11-S-46	R11-NK-47
PMG-60	PT250-316	QE10-FMF	QE11-S-47	R11-NK-64
PMH-30-*	PT312	QE11-M-11	QE11-S-48	R11-NK-66
PNV0-0	PT312-316	QE11-M-14	QE11-S-61	R11-NK-67
PNV0-1	PTS156-1/8	QE11-M-16	QE11-S-64	R11-NK-74
PNV0-1/8	PTS156-1/8-316	QE11-M-17	QE11-S-66	R11-NK-76
PNV0-2	PTS250-1/8	QE11-M-18	QE11-S-67	R11-NK-77
PNV0-3	PTS250-1/8-316	QE11-M-41	QE11-S-68	R11-NP-14
PNV0-4	PU-125*	QE11-M-44	QE11-S-71	R11-NP-16
PNV0-5	PU-125*-LR	QE11-M-46	QE11-S-74	R11-NP-17
PNV0-6	PU-125*-R	QE11-M-47	QE11-S-76	R11-NP-44
PNV0-7	PU-125*-XR	QE11-M-48	QE11-S-77	R11-NP-46
PNV11-14	PU-125F*	QE11-M-61	QE11-S-78	R11-NP-47
PNV11-16	PU-156*	QE11-M-64	QE-MI	R11-NP-64
PNV11-17	PU-156*-LR	QE11-M-66	QE-MS	R11-NP-66
PNV11-44	PU-156*-R	QE11-M-67	QE-S	R11-NP-67
PNV11-46	PU-156F*	QE11-M-68	R0-NK-1	R11-NP-74
PNV11-47	PU2-125-*C	QE11-M-71	R0-NK-2	R11-NP-76
PNV11-64	PU2-250-*C	QE11-M-74	R0-NK-3	R11-NP-77
PNV11-66	PU-250*	QE11-M-76	R0-NK-4	R11-RK-14
PNV11-67	PU-250*-LR	QE11-M-77	R0-NK-5	R11-RK-16
PNV11-74	PU-250*-R	QE11-M-78	R0-NK-6	R11-RK-17
PNV11-76	PU-250F*	QE11-P-11	R0-NK-7	R11-RK-41
PNV11-77	PU-250PB*	QE11-P-14	R0-NP-1	R11-RK-44
PP-30*	PU-250R*	QE11-P-16	R0-NP-2	R11-RK-46
PPB-3/4	PU-312*	QE11-P-17	R0-NP-3	R11-RK-47

R11-RK-64	S10MM-30-24LW-2	S15MM-21-24-3B	S15MM-31-24-0C	S20M42-DS-11-3
R11-RK-66	S10MM-30-24LW-3	S15MM-21-24-3C	S15MM-31-24-0D	S20M42-DS-11-4
R11-RK-67	S10MM-30-24LW-4	S15MM-21-24-4B	S15MM-31-24-2B	S20M42-DS-12-0
R11-RK-74	S10MM-31-12-2	S15MM-21-24-4C	S15MM-31-24-2C	S20M42-DS-12-2
R11-RK-76	S10MM-31-12-3	S15MM-30-110-0B	S15MM-31-24-2D	S20M42-DS-12-3
R11-RK-77	S10MM-31-12-4	S15MM-30-110-0D	S15MM-31-24-3B	S20M42-DS-12-4
R11-RP-14	S10MM-31-24-2	S15MM-30-110-2B	S15MM-31-24-3C	S20M42-DS-24-0
R11-RP-16	S10MM-31-24-3	S15MM-30-110-2D	S15MM-31-24-3D	S20M42-DS-24-2
R11-RP-17	S10MM-31-24-4	S15MM-30-110-3B	S15MM-31-24-4B	S20M42-DS-24-3
R11-RP-44	S10MM-31-24LW-2	S15MM-30-110-3D	S15MM-31-24-4C	S20M42-DS-24-4
R11-RP-46	S10MM-31-24LW-3	S15MM-30-110-4B	S15MM-31-24-4D	S20M42-SS-11-0
R11-RP-47	S10MM-31-24LW-4	S15MM-30-110-4D	S15MML-20-12-2B	S20M42-SS-11-2
R11-RP-64	S10MML-30-24-2	S15MM-30-12-0B	S15MML-20-12-2D	S20M42-SS-11-3
R11-RP-66	S15MM-20-12-0B	S15MM-30-12-0D	S15MML-20-24-2B	S20M42-SS-11-4
R11-RP-67	S15MM-20-12-0D	S15MM-30-12-2B	S15MML-20-24-2D	S20M42-SS-12-0
R11-RP-74	S15MM-20-12-2B	S15MM-30-12-2D	S15MML-30-12-2B	S20M42-SS-12-2
R11-RP-76	S15MM-20-12-2D	S15MM-30-12-3B	S15MML-30-12-2D	S20M42-SS-12-3
R11-RP-77	S15MM-20-12-3B	S15MM-30-12-3D	S15MML-30-24-2B	S20M42-SS-12-4
RLN-40	S15MM-20-12-3D	S15MM-30-12-4B	S15MML-30-24-2D	S20M42-SS-24-0
RPB-30*	S15MM-20-12-4B	S15MM-30-12-4D	S20M30-AP	S20M42-SS-24-2
RTCP-062	S15MM-20-12-4D	S15MM-30-12W-0E	S20M30-SS-11-0	S20M42-SS-24-3
RTCP-110	S15MM-20-12W-0E	S15MM-30-12W-2E	S20M30-SS-11-2	S20M42-SS-24-4
RTCP-170	S15MM-20-12W-2E	S15MM-30-12W-3E	S20M30-SS-11-3	S20M-CP
RTCPB	S15MM-20-12W-3E	S15MM-30-12W-4E	S20M30-SS-11-4	S20MM-10
RTCS-062	S15MM-20-12W-4E	S15MM-30-24-0B	S20M30-SS-12-0	S20MM-2
RTCS-110	S15MM-20-24-0B	S15MM-30-24-0D	S20M30-SS-12-2	S20MM-3
RTCS-170	S15MM-20-24-0D	S15MM-30-24-2B	S20M30-SS-12-3	S20MM-4
RTCSB	S15MM-20-24-2B	S15MM-30-24-2D	S20M30-SS-12-4	S20MM-6
RTPB-062	S15MM-20-24-2D	S15MM-30-24-3B	S20M30-SS-24-0	S20MM-8
RTPB-110	S15MM-20-24-3B	S15MM-30-24-3D	S20M30-SS-24-2	S20MU-10
RTPB-170	S15MM-20-24-3D	S15MM-30-24-4B	S20M30-SS-24-3	S20MU-2
RTSB-062	S15MM-20-24-4B	S15MM-30-24-4D	S20M30-SS-24-4	S20MU-4
RTSB-110	S15MM-20-24-4D	S15MM-30-24W-0E	S20M31-AP	S20MU-6
RTSB-170	S15MM-20-24W-0E	S15MM-30-24W-2E	S20M31-SS-11-0	S20MU-8
S10MM-20-12-2	S15MM-20-24W-2E	S15MM-30-24W-3E	S20M31-SS-11-2	S20U30-AP
S10MM-20-12-3	S15MM-20-24W-3E	S15MM-30-24W-4E	S20M31-SS-11-3	S20U30-SS-11-0
S10MM-20-12-4	S15MM-20-24W-4E	S15MM-31-12-0B	S20M31-SS-11-4	S20U30-SS-11-2
S10MM-20-24-2	S15MM-21-12-0B	S15MM-31-12-0C	S20M31-SS-12-0	S20U30-SS-11-3
S10MM-20-24-3	S15MM-21-12-0C	S15MM-31-12-0D	S20M31-SS-12-2	S20U30-SS-11-4
S10MM-20-24-4	S15MM-21-12-2B	S15MM-31-12-2B	S20M31-SS-12-3	S20U30-SS-12-0
S10MM-20-24LW-2	S15MM-21-12-2C	S15MM-31-12-2C	S20M31-SS-12-4	S20U30-SS-12-2
S10MM-20-24LW-3	S15MM-21-12-3B	S15MM-31-12-2D	S20M31-SS-24-0	S20U30-SS-12-3
S10MM-20-24LW-4	S15MM-21-12-3C	S15MM-31-12-3B	S20M31-SS-24-2	S20U30-SS-12-4
S10MM-30-12-2	S15MM-21-12-4B	S15MM-31-12-3C	S20M31-SS-24-3	S20U30-SS-24-0
S10MM-30-12-3	S15MM-21-12-4C	S15MM-31-12-3D	S20M31-SS-24-4	S20U30-SS-24-2
S10MM-30-12-4	S15MM-21-24-0B	S15MM-31-12-4B	S20M42-AP	S20U30-SS-24-3
S10MM-30-24-2	S15MM-21-24-0C	S15MM-31-12-4C	S20M42-DP	S20U30-SS-24-4
S10MM-30-24-3	S15MM-21-24-2B	S15MM-31-12-4D	S20M42-DS-11-0	S20U31-AP
S10MM-30-24-4	S15MM-21-24-2C	S15MM-31-24-0B	S20M42-DS-11-2	S20U31-SS-11-0

S20U31-SS-11-2	S22U30-SS-12-2	S22U4E-DS-11-3	S8-31-12-0	SBF-1816
S20U31-SS-11-3	S22U30-SS-12-3	S22U4E-DS-11-4	S8-31-220-0	SBF-1816B
S20U31-SS-11-4	S22U30-SS-12-4	S22U4E-DS-12-0	S8-31-24-0	SBF-1818
S20U31-SS-12-0	S22U30-SS-24-0	S22U4E-DS-12-2	S8-DIN	SBF-18L
S20U31-SS-12-2	S22U30-SS-24-2	S22U4E-DS-12-3	SB10	SBF-18T
S20U31-SS-12-3	S22U30-SS-24-3	S22U4E-DS-12-4	SB115-156-4	SBF-18X
S20U31-SS-12-4	S22U30-SS-24-4	S22U4E-DS-24-0	SB115-250-4	SBF-32-1
S20U31-SS-24-0	S22U42-AP	S22U4E-DS-24-2	SB120-156-7	SBF-32-2
S20U31-SS-24-2	S22U42-DP	S22U4E-DS-24-3	SB120-250-7	SBF-32-3
S20U31-SS-24-3	S22U42-DS-11-0	S22U4E-DS-24-4	SB125-156-12	SBF-32-4
S20U31-SS-24-4	S22U42-DS-11-2	S6-20-110-0	SB125-156-9	SBH-10
S20U42-AP	S22U42-DS-11-3	S6-20-110-2	SB125-250-12	SBH-125
S20U42-DP	S22U42-DS-11-4	S6-20-12-0	SB125-250-9	SEL-301-2
S20U42-DS-11-0	S22U42-DS-12-0	S6-20-12-2	SB20	SEL-302-2
S20U42-DS-11-2	S22U42-DS-12-2	S6-20-12LW-0	SB215-156-4	SF-125PI
S20U42-DS-11-3	S22U42-DS-12-3	S6-20-12LW-2	SB215-250-4	SF-156PI
S20U42-DS-11-4	S22U42-DS-12-4	S6-20-220-0	SB220-156-7	SF-22
S20U42-DS-12-0	S22U42-DS-24-0	S6-20-220-2	SB220-250-7	SFD-10
S20U42-DS-12-2	S22U42-DS-24-2	S6-20-24-0	SB225-156-12	SFL-10
S20U42-DS-12-3	S22U42-DS-24-3	S6-20-24-2	SB225-156-9	SFT-10
S20U42-DS-12-4	S22U42-DS-24-4	S6-20-24AC-0	SB225-250-12	SFU-22
S20U42-DS-24-0	S22U42-LS-12-2	S6-20-24AC-2	SB225-250-9	SMB-30-*
S20U42-DS-24-2	S22U42-LS-24-2	S6-20-24LW-0	SB25	SMMC-1000
S20U42-DS-24-3	S22U42-SS-11-0	S6-20-24LW-2	SB30	SMMC-300
S20U42-DS-24-4	S22U42-SS-11-2	S6-30-110-0	SB315-4	SMMC-500
S20U42-SS-11-0	S22U42-SS-11-3	S6-30-110-2	SB320-7	SMM-DIN
S20U42-SS-11-2	S22U42-SS-11-4	S6-30-12-0	SB325-12	SMM-MDIN
S20U42-SS-11-3	S22U42-SS-12-0	S6-30-12-2	SB325-9	SPG-1/16
S20U42-SS-11-4	S22U42-SS-12-2	S6-30-12LW-0	SB40	SPG-1/2
S20U42-SS-12-0	S22U42-SS-12-3	S6-30-12LW-2	SB50	SPG-1/4
S20U42-SS-12-2	S22U42-SS-12-4	S6-30-220-0	SB60	SPG-1/8
S20U42-SS-12-3	S22U42-SS-24-0	S6-30-220-2	SBF-062	SPG-10
S20U42-SS-12-4	S22U42-SS-24-2	S6-30-24-0	SBF-062-1/4	SPG-10-1/4
S20U42-SS-24-0	S22U42-SS-24-3	S6-30-24-2	SBF-062-1/4-M3	SPG-3/8
S20U42-SS-24-2	S22U42-SS-24-4	S6-30-24AC-0	SBF-062-LP	SPG-4-28
S20U42-SS-24-3	S22U4C-DS-11-0	S6-30-24AC-2	SBF-10T	SPG-M3
S20U42-SS-24-4	S22U4C-DS-11-2	S6-30-24LW-0	SBF-110	SPG-M5
S22M-CP	S22U4C-DS-11-3	S6-30-24LW-2	SBF-110-1/4	SPG-M6
S22MU-10	S22U4C-DS-11-4	S6-DIN	SBF-110-1/4-M3	SSP-10
S22MU-2	S22U4C-DS-12-0	S8-20-110-0	SBF-140	SSV-10A-ABB
S22MU-4	S22U4C-DS-12-2	S8-20-12-0	SBF-140-1/4	SSV-10A-ABC
S22MU-6	S22U4C-DS-12-3	S8-20-220-0	SBF-1410T	SSV-10A-ABD
S22MU-8	S22U4C-DS-12-4	S8-20-24-0	SBF-14T	SSV-10A-ABF
S22U30-AP	S22U4C-DS-24-0	S8-21-12-0	SBF-1616	SSV-10A-ACC
S22U30-SS-11-0	S22U4C-DS-24-2	S8-30-110-0	SBF-16T	SSV-10A-ACF
S22U30-SS-11-2	S22U4C-DS-24-3	S8-30-12-0	SBF-170	SSV-10A-ADC
S22U30-SS-11-3	S22U4C-DS-24-4	S8-30-220-0	SBF-170-1/4	SSV-10A-ADD
S22U30-SS-11-4	S22U4E-DS-11-0	S8-30-24-0	SBF-1810	SSV-10A-AFD
S22U30-SS-12-0	S22U4E-DS-11-2	S8-31-110-0	SBF-1810T	SSV-10A-AFF

SSV-10A-BBB	SSV-10A-MFF
SSV-10A-BBC	STD-10
SSV-10A-BBD	STL-10
SSV-10A-BBF	STL-10-SS
SSV-10A-BCC	STT-10
SSV-10A-BCD	STT-10-SS
SSV-10A-BCF	SV11-1/4 PI-44
SSV-10A-BDD	SV11-1/4 PI-46
SSV-10A-BDF	SV11-1/4 PI-66
SSV-10A-BFF	SV11-1/4 PI-74
SSV-10A-CBB	SV11-1/4 PI-76
SSV-10A-CBC	SV11-1/4 PI-77
SSV-10A-CBD	SV11-125-44
SSV-10A-CBF	SV11-125-46
SSV-10A-CCC	SV11-125-47
SSV-10A-CCD	SV11-125-66
SSV-10A-CCF	SV11-125-67
SSV-10A-CDD	SV11-125-77
SSV-10A-CDF	SV11-1-44
SSV-10A-CFF	SV11-1-46
SSV-10A-DBB	SV11-1-66
SSV-10A-DBC	SV11-5/32 PI-44
SSV-10A-DBD	SV11-5/32 PI-46
SSV-10A-DBF	SV11-5/32 PI-47
SSV-10A-DCC	SV11-5/32 PI-66
SSV-10A-DCD	SV11-5/32 PI-67
SSV-10A-DCF	SV11-5/32 PI-77
SSV-10A-DDD	TA-1
SSV-10A-DDF	TB10-125-10
SSV-10A-DFF	TB10-125-2
SSV-10A-FBB	TB10-125-4
SSV-10A-FBC	TB10-125-6
SSV-10A-FBD	TB10-125-8
SSV-10A-FCC	TB20-250-10
SSV-10A-FCD	TB20-250-2
SSV-10A-FDD	TB20-250-4
SSV-10A-FFB	TB20-250-6
SSV-10A-FFC	TB20-250-8
SSV-10A-FFD	TB32-10
SSV-10A-FFF	TB32-4
SSV-10A-MBB	TB32-6
SSV-10A-MBC	TB32-8
SSV-10A-MBD	TC-1000
SSV-10A-MCC	TCR
SSV-10A-MCD	TL-30-2
SSV-10A-MDD	
SSV-10A-MFB	
SSV-10A-MFC	
SSV-10A-MFD	



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