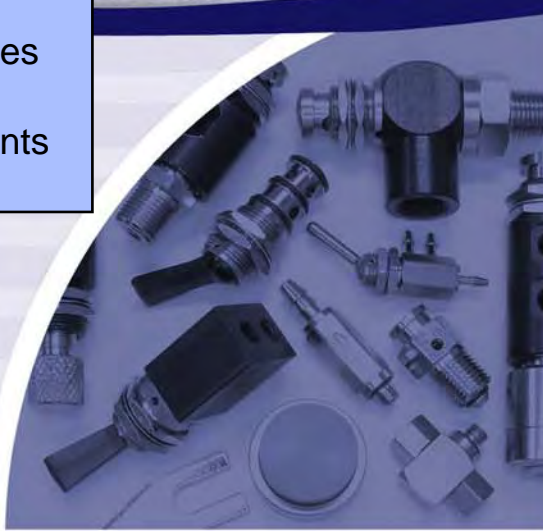


Miniature Pneumatic Components

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Perfecting miniature pneumatic products for over 30 years

CATALOG 2300





PNEUMADYNE CAPABILITIES

Perfecting miniature pneumatic products for over 30 years

Pneumadyne, Inc. is your source for pneumatic control valves and control valve accessories, solenoid valves, fittings, manifolds, custom products, tubing and more.

Established in 1975, Pneumadyne was developed out of the industry's need for a better miniature pneumatic valve. Thirty years later, we are known as a leader in the design, development, manufacture and integration of fluid handling devices.

Design & Engineering

Pneumadyne's success lies chiefly in the design and engineering capabilities acquired through years of developing pneumatic products. Our highly experienced engineering staff works closely with our customers to ensure components, as well as complete systems, fit specific application requirements.

Dedication to engineering excellence contributes to the manufacture of what we believe to be the finest pneumatic components available. Several patents have been issued for our robust and unique designs.





Manufacturing

Manufacturing quality is ensured through strict process control of our multi-axis Swiss screw machining centers and milling centers. Precision manufacturing guarantees the accuracy of the component parts which are the building blocks of our final product.

Quality

ISO 9001:2000 certification, received in 2004, demonstrates our commitment to quality. Stringent quality management systems, standards and guidelines ensure that we are producing products that meet and exceed the highest of customer standards.

Products

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.

- Medical Instruments
- High Speed Conveyors
- Dental Equipment
- Milking Circuits
- Air Suspension
- Printing Equipment
- Food & Beverage Dispensing
- Automotive Equipment
- Animatronics
- Sporting Goods
- Energy Production
- Exercise Equipment
- Chip Manufacturing

PNEUMADYNE
INC.

*...the PneuTrend in
miniature pneumatics®*



Pneumadyne manufactures a Full Line of Quality Miniature Pneumatic Components

contact our customer service department at 763-559-0177 or the authorized Pneumadyne distributor in your area

Custom Design

- Valves
- Fittings
- Manifolds

Control Valves

- 2, 3, & 4-Way Valves
- 10-32 and 1/8 NPT Threads
- 1/4 and 5/32 Push-to-Connect Ports
- Shuttle Valves
- Pressure Control Valves
- Pressure Regulators
- Check Valves
- Needle Valves / Flow Control Valves
- 6 Position Selector Valves
- Bleed Valves
- Quick Exhaust Valves

Solenoid Valves

- 10 mm & 15 mm
- 2, 3, & 4-Way Valves
- Latching
- Low Watt/High Flow

Valve Accessories

- Assorted Operators
- Air Pilots
- Mounting Brackets
- Micro Gauges

Manifolds

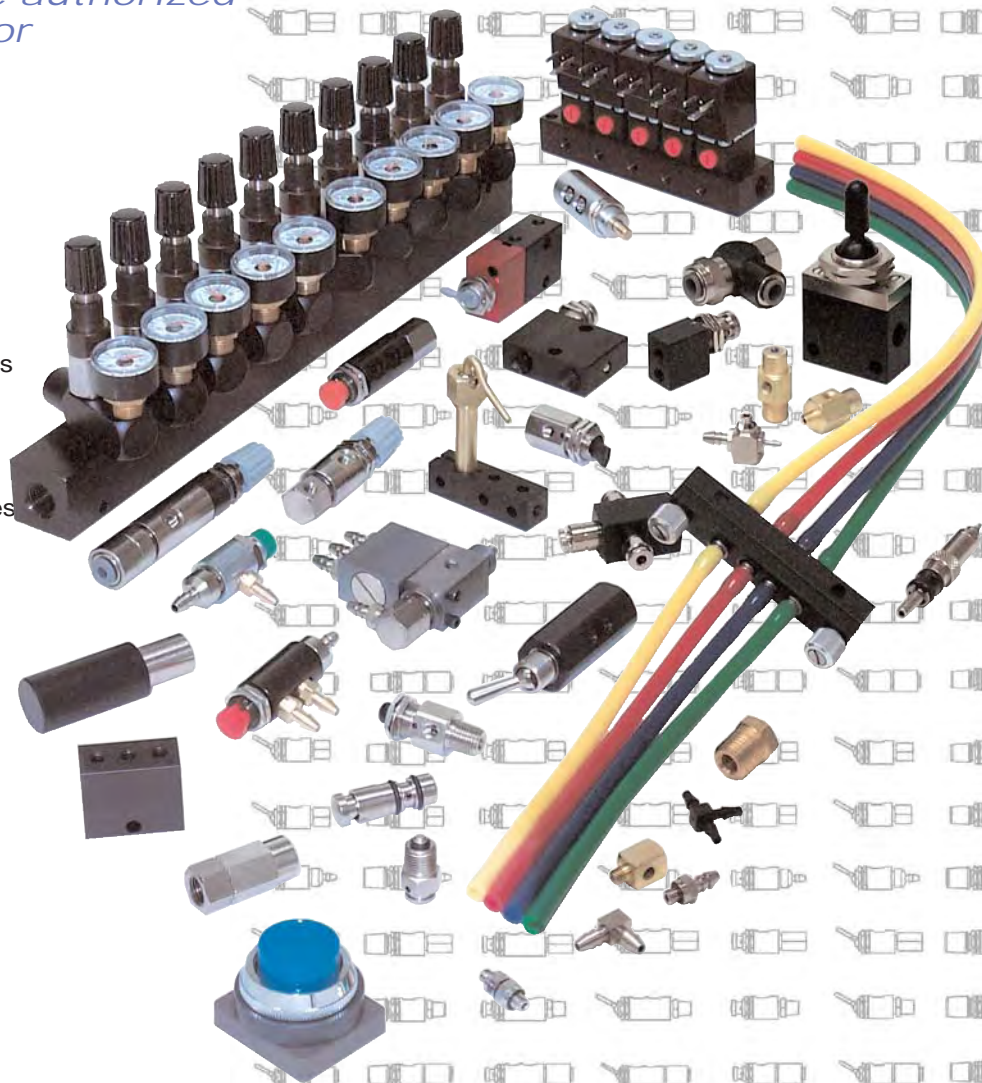
- Inline
- 90°
- Dual Air
- Junction Blocks
- Terminal Blocks
- 10-32 UNF & 1/8, 1/4, 3/8, 1/2, 3/4 NPT

Miniature Fittings

- Brass / ENI Brass / Stainless Steel
- Pneu-Edge®
- O-ring Seal
- Tapered Thread
- Push-to-Connect

Tubing & Accessories

- Micro Couplers
- Quick Disconnect
- Ribbon Tube Connector
- Polyurethane Tubing
- Multiple Tube Racks





Pneumadyne Capabilities

Control Valves & Valve Accessories

System 11 Consolidation

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Custom Products

Air Jets

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Fitting Specifications

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Non-threaded exhaust port

"3" Series: Swivel input port 14

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Push-to-connect ports

Swivel output port

Non-threaded exhaust port

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1/16 barbed output port

Non-threaded exhaust port

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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

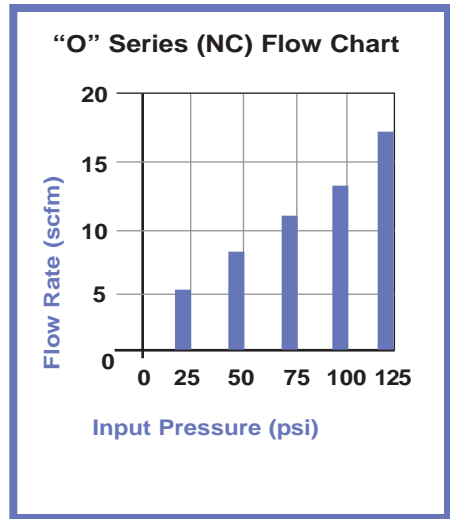
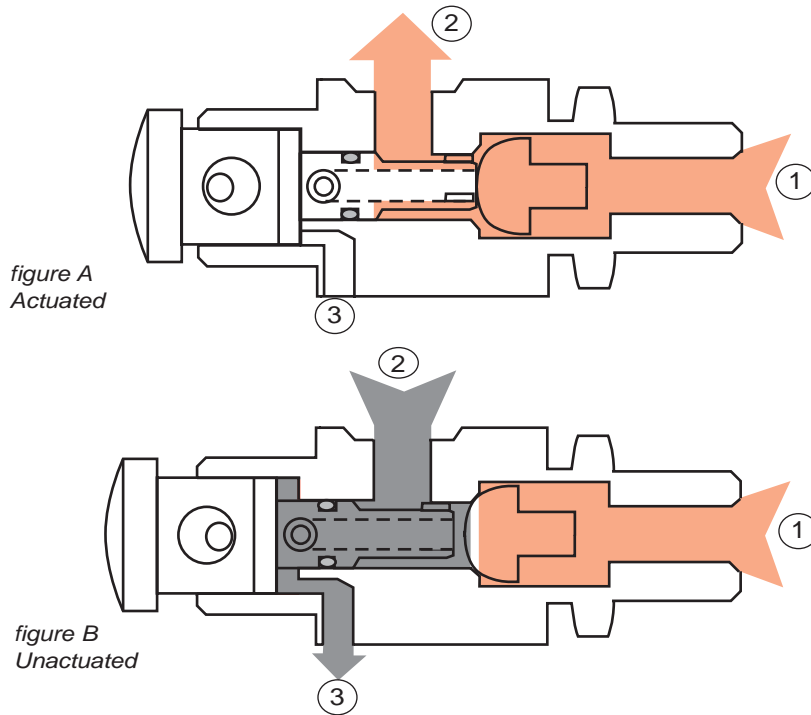
Actuator Style	2-Way Valve		3-Way Valve	
	50 psi	125 psi	50 psi	125 psi
Nylon Toggle	4 oz	6 oz	4 oz	6 oz
Push Button	3 lbs	5 1/2 lbs	3 lbs	5 1/2 lbs

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 Cut-away 3-Way Normally Closed



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.

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

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

	Part Number	Input
Push Button	AO-20-1	1/8 NPT /10-32 (F)
	AO-20-2	10-32 (F) Elbow
	AO-20-3	10-32 (F) Tee
	AO-20-4	1/8 NPT (F)
	AO-20-5	170 Barb
	AO-20-6	1/4 Push-in
	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

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

	Part Number	Input
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

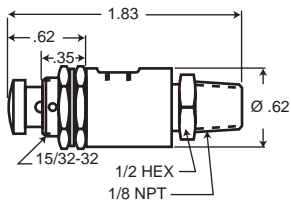
	Part Number	Input
Push Button	AO-31-1	1/8 NPT /10-32 (F)
	AO-31-2	10-32 (F) Elbow
	AO-31-3	10-32 (F) Tee
	AO-31-4	1/8 NPT (F)
	AO-31-5	170 Barb
	AO-31-6	1/4 Push-in
	AO-31-7	5/32 Push-in
Detented Toggle	HO-31-1	1/8 NPT /10-32 (F)
	HO-31-2	10-32 (F) Elbow
	HO-31-3	10-32 (F) Tee
	HO-31-4	1/8 NPT (F)
	HO-31-5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

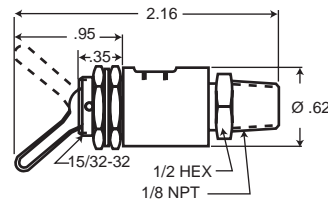
- Refer to **Product Number Diagram** ([page 16](#))

Push Button Actuator

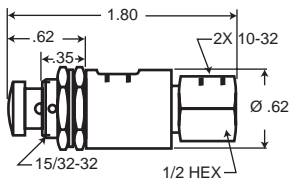
Toggle Actuator



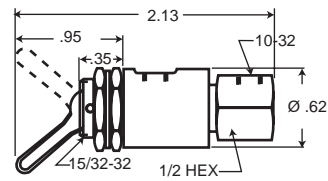
“-1” Input



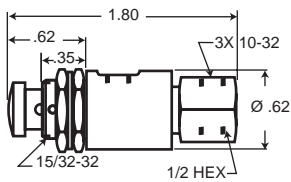
“-1” Input



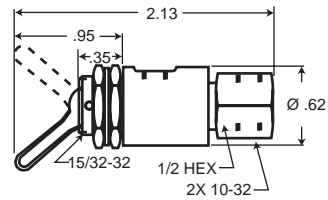
“-2” Input



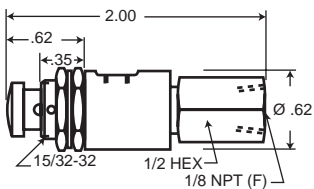
“-2” Input



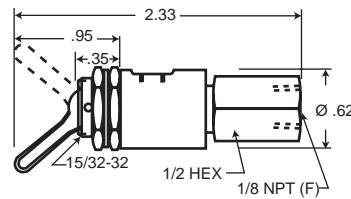
“-3” Input



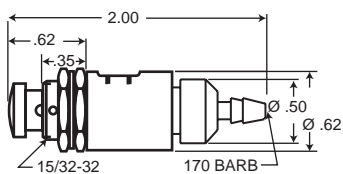
“-3” Input



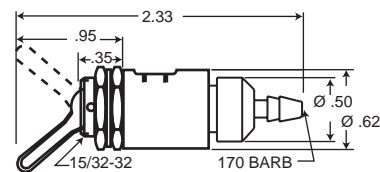
“-4” Input



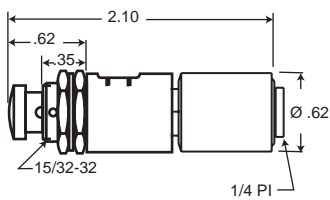
“-4” Input



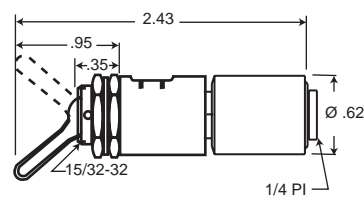
“-5” Input



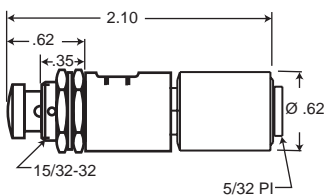
“-5” Input



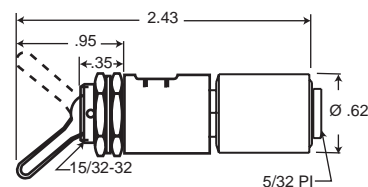
“-6” Input



“-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
- Vacuum option available



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

- *Vacuum option available on “3” Series- for applications greater than 10 Hg- contact factory.*

C_v per ANSI / (NFPA) T3.21.3

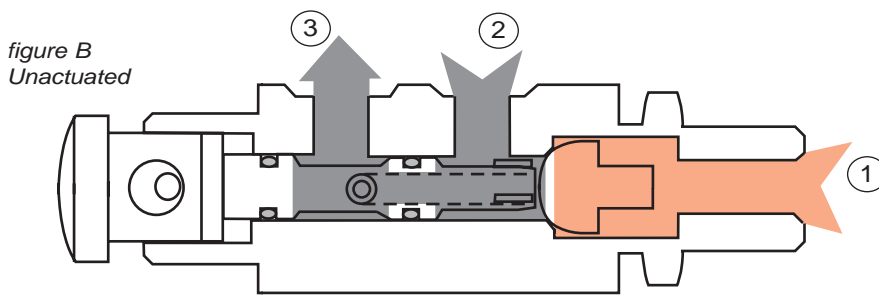
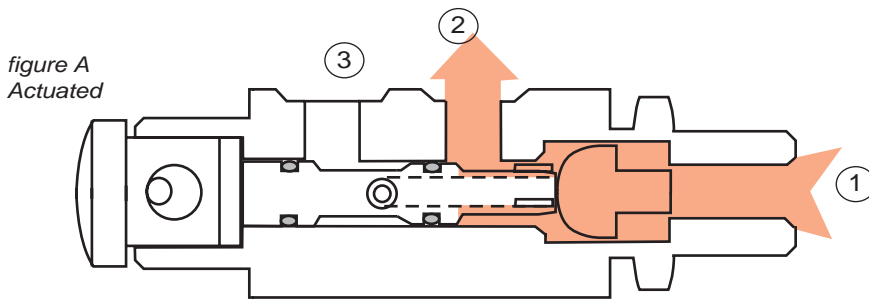
Actuation Force

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 Cut-away 3-Way Normally Closed



Function

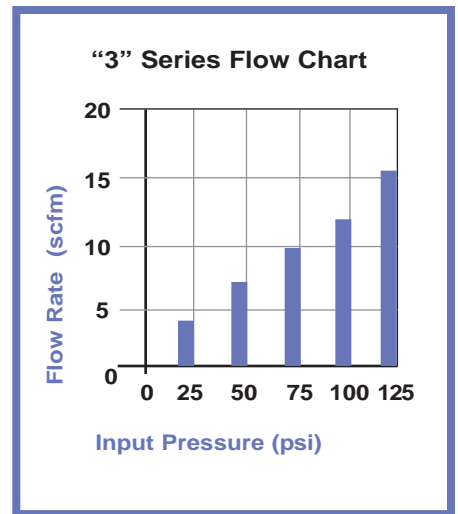
When a 3-Way normally closed valve is actuated (figure A) the stem unseats the poppet allowing flow through port 1 around the poppet and stem and out port 2.

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.



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

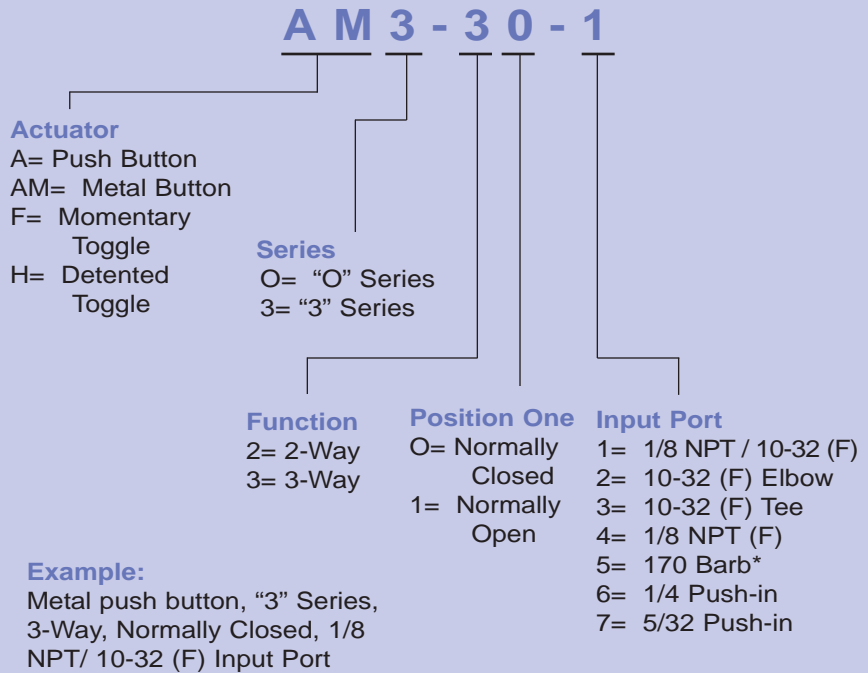
Product Information

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



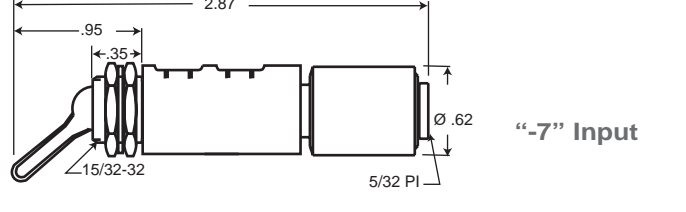
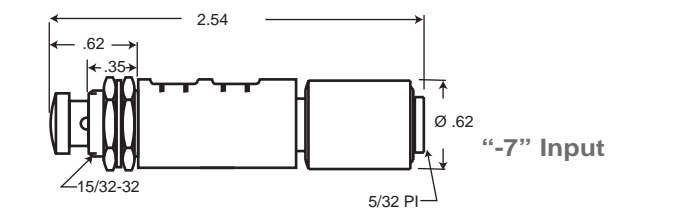
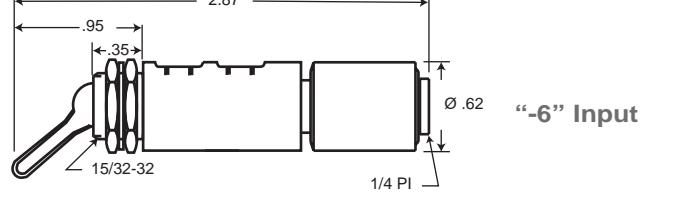
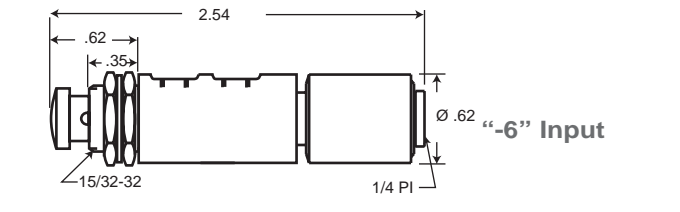
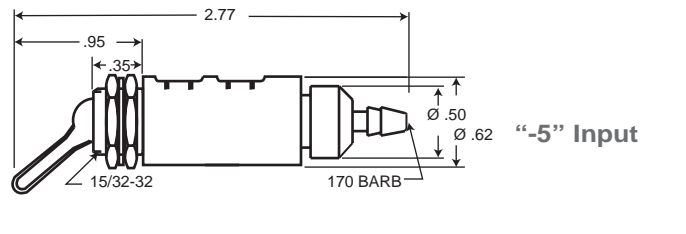
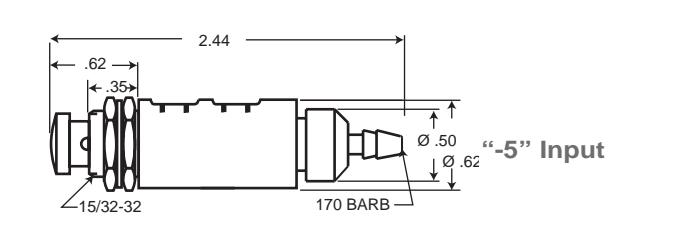
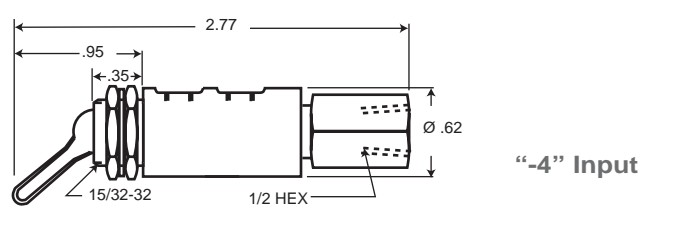
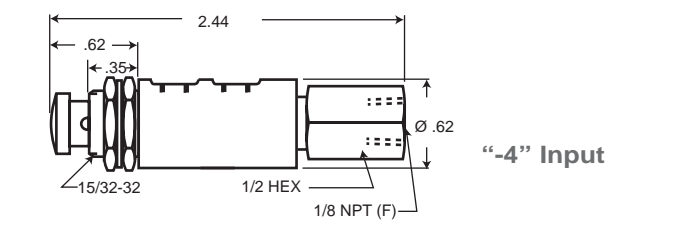
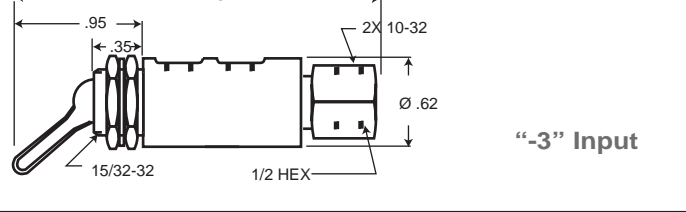
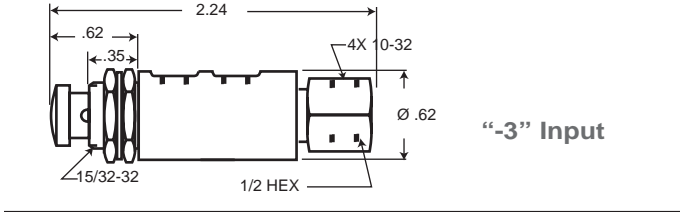
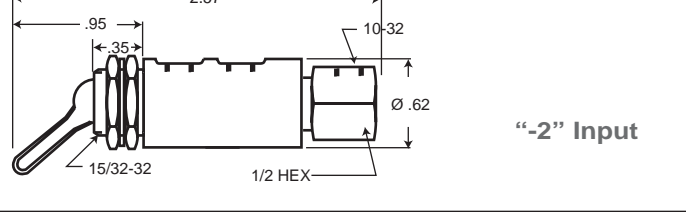
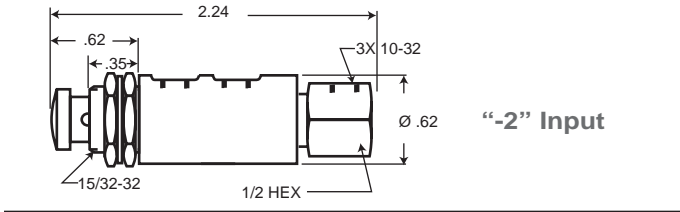
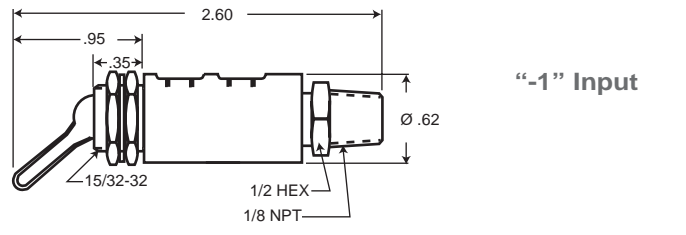
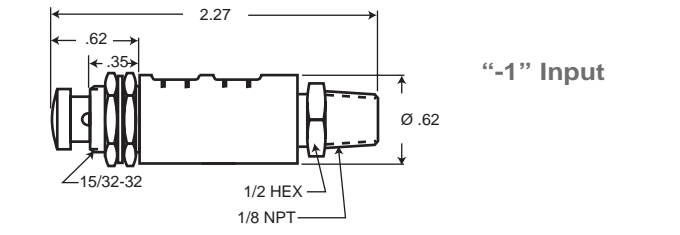
*170 barb- recommended for use with .170 ID PUR or .170 ID PE

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.
- To order vacuum option- add "-VAC" to the standard product number.
- 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



● 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 Cut-away
3-Way Normally Closed

figure A
Actuated

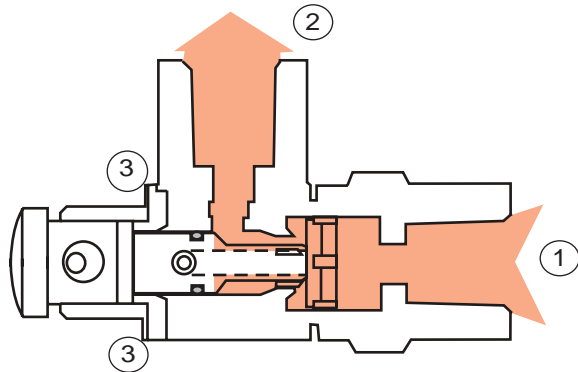
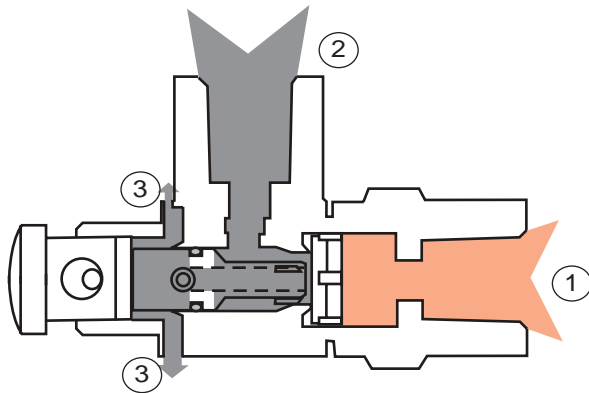


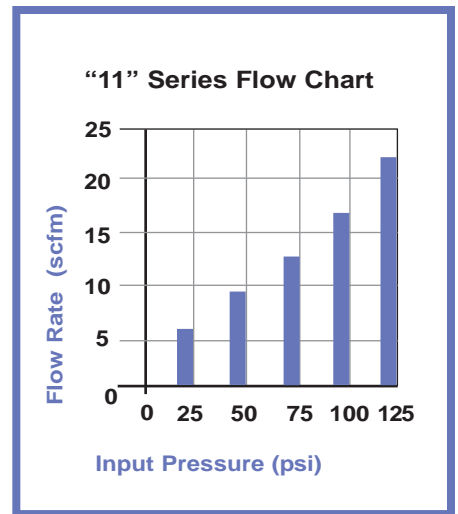
figure B
Unactuated



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.



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 (F)	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 (F)	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 (F)	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 (F)	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 (F)	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 (F)	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	1/8 NPT	1/4 Push-in
	A11-30-17		5/32 Push-in
	A11-30-44	1/8 NPT (F)	1/8 NPT (F)
	A11-30-46	1/8 NPT (F)	1/4 Push-in
	A11-30-47		5/32 Push-in
	A11-30-64		1/8 NPT (F)
Detented Toggle	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
	H11-30-14	1/8 NPT	1/8 NPT (F)
	H11-30-16	1/8 NPT	1/4 Push-in
Momentary Toggle	H11-30-17		5/32 Push-in
	H11-30-44	1/8 NPT (F)	1/8 NPT (F)
	H11-30-46	1/8 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
Momentary Toggle	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
	F11-30-14	1/8 NPT	1/8 NPT (F)
	F11-30-16	1/8 NPT	1/4 Push-in
	F11-30-17		5/32 Push-in
	F11-30-44	1/8 NPT (F)	1/8 NPT (F)
F11-30-46	1/8 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	1/8 NPT	1/4 Push-in
	A11-31-17		5/32 Push-in
	A11-31-44	1/8 NPT (F)	1/8 NPT (F)
	A11-31-46	1/8 NPT (F)	1/4 Push-in
	A11-31-47		5/32 Push-in
	A11-31-64		1/8 NPT (F)
Detented Toggle	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
	H11-31-14	1/8 NPT	1/8 NPT (F)
	H11-31-16	1/8 NPT	1/4 Push-in
Momentary Toggle	H11-31-17		5/32 Push-in
	H11-31-44	1/8 NPT (F)	1/8 NPT (F)
	H11-31-46	1/8 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
Momentary Toggle	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
	F11-31-14	1/8 NPT	1/8 NPT (F)
	F11-31-16	1/8 NPT	1/4 Push-in
	F11-31-17		5/32 Push-in
	F11-31-44	1/8 NPT (F)	1/8 NPT (F)
F11-31-46	1/8 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	



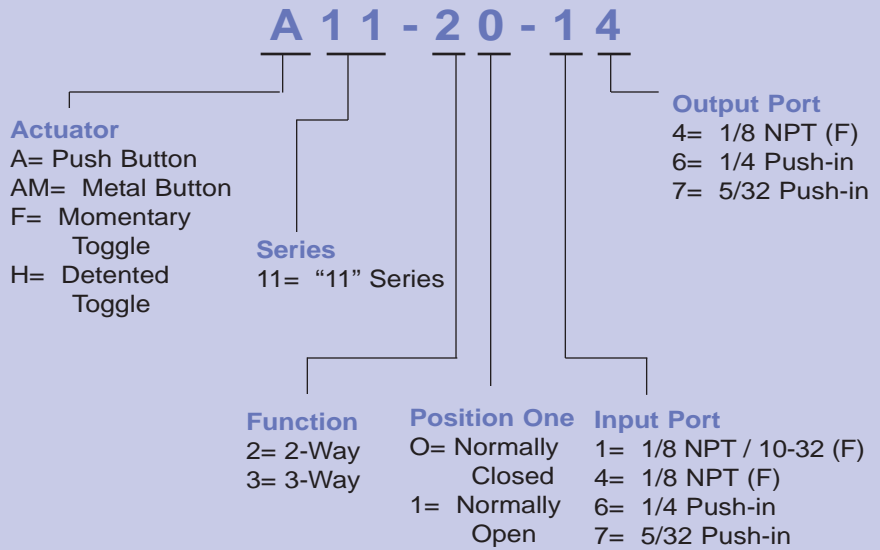
Ordering Information

- 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

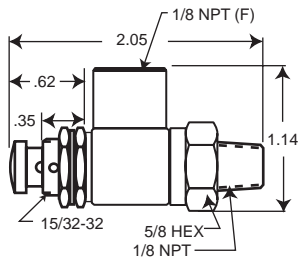
System 11 is a method of consolidating 2 to 10 components with a common pressure source.

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

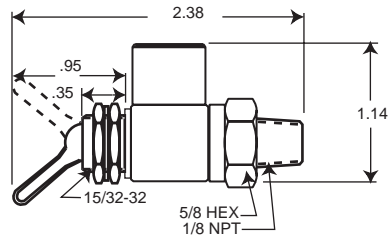


Push Button Actuator

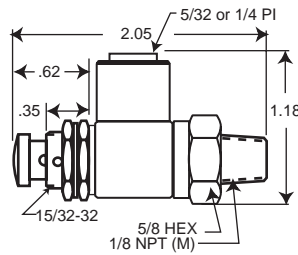
Toggle Actuator



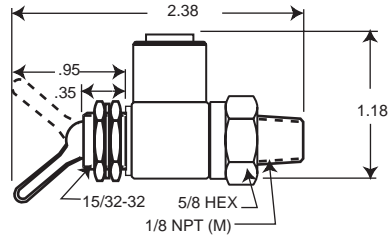
"-14" Porting



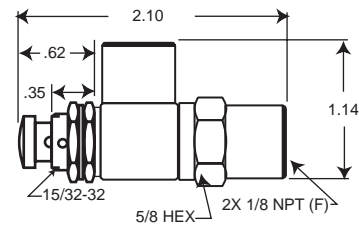
"-14" Porting



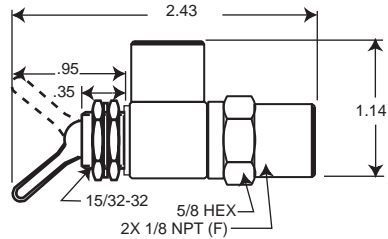
**"-16" Porting
"-17" Porting**



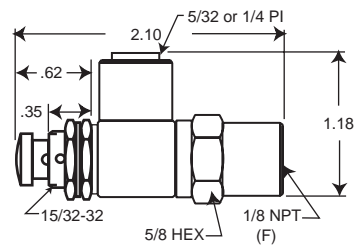
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"-17" Porting**



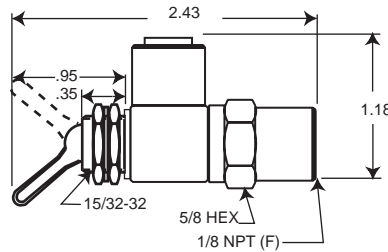
"-44" Porting



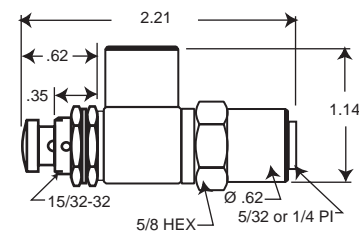
"-44" Porting



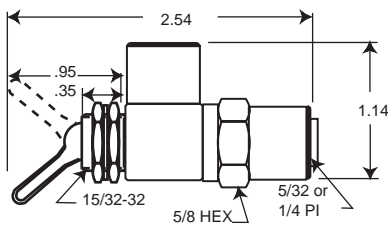
**"-46" Porting
"-47" Porting**



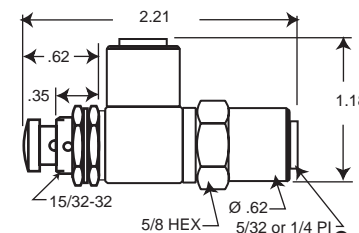
**"-46" Porting
"-47" Porting**



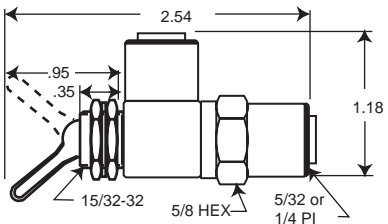
**"-64" Porting
"-74" Porting**



**"-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

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

C_v per ANSI / (NFPA) T3.21.3

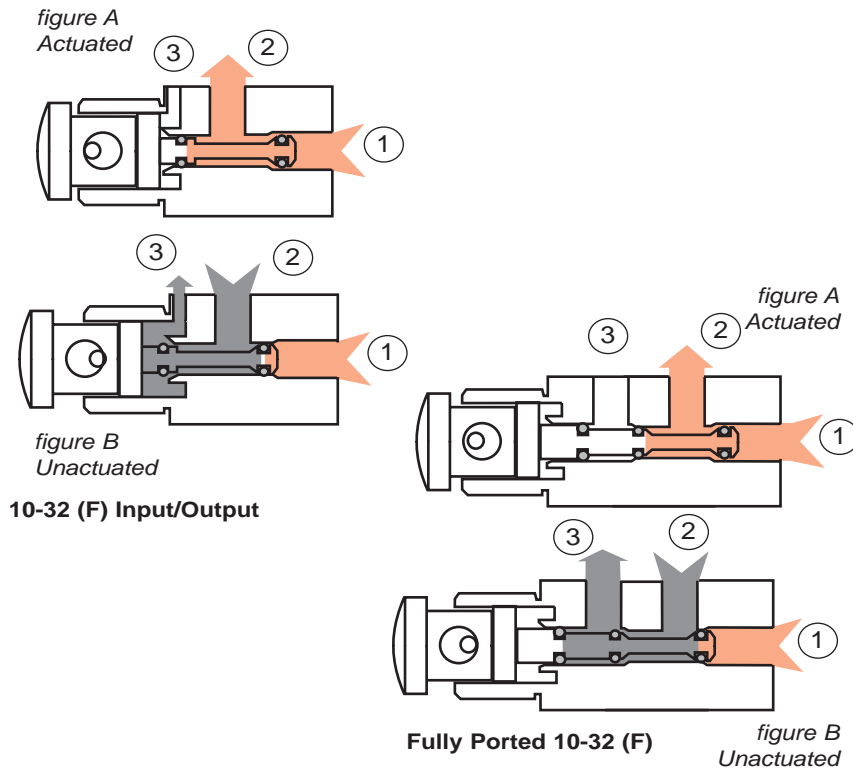
Actuation Force

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

Materials

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

“300” Series Cut-away 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.

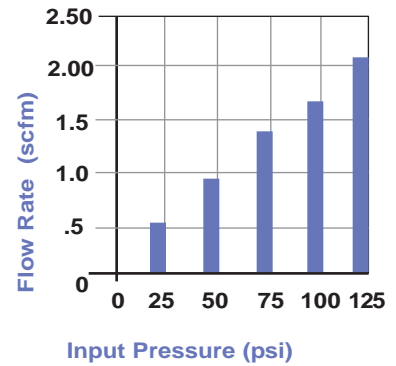
The **10-32 (F) fully ported** valve allows the capture and removal of exhaust flow. (See [Plumbing Options for Fully Ported Valves](#) alternative plumbing methods.)

Port Options

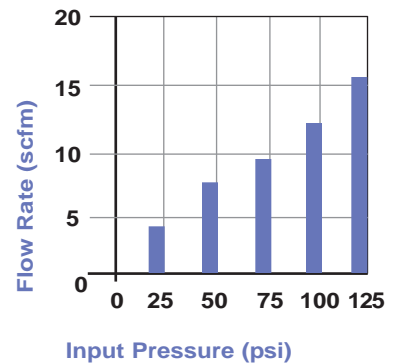
Valve	Input 1	Output 2	Exhaust
Barbed	062 Barb	062 Barb	non-threaded
10-32 (F) Input/Output	10-32 (F)	10-32 (F)	non-threaded
Rear Ported	10-32 (F)	10-32 (F)	non-threaded
1/8 NPT Input	1/8 NPT	10-32 (F)	non-threaded
*Cartridge	non-threaded	non-threaded	non-threaded
10-32 (F) Fully Ported	10-32 (F)	10-32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

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

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

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**

Part Number	Operator
-------------	----------

- 2-Way Normally Closed**
C032101 Toggle Detented
C032103 Toggle Momentary
C032105 Nylon Button
C032107 Nylon Ball
C032121 Metal Toggle Detented
C032123 Metal Toggle Momentary
C032125 Metal Button
C032127 Stainless Steel Ball

- 3-Way Normally Closed**
C032201 Toggle Detented
C032203 Toggle Momentary
C032205 Nylon Button
C032207 Nylon Ball
C032221 Metal Toggle Detented
C032223 Metal Toggle Momentary
C032225 Metal Button
C032227 Stainless Steel Ball

“300” Series Rear Ported

Part Number	Operator
-------------	----------

- 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**

Part Number	Operator
-------------	----------

- 2-Way Normally Closed**
C030701 Toggle Detented
C030703 Toggle Momentary
C030705 Nylon Button
C030707 Nylon Ball
C030721 Metal Toggle Detented
C030723 Metal Toggle Momentary
C030725 Metal Button
C030727 Stainless Steel Ball

- 3-Way Normally Closed**
C030601 Toggle Detented
C030603 Toggle Momentary
C030605 Nylon Button
C030607 Nylon Ball
C030621 Metal Toggle Detented
C030623 Metal Toggle Momentary
C030625 Metal Button
C030627 Stainless Steel Ball

“300” Series Cartridge

Part Number	Operator
-------------	----------

- 2-Way Normally Closed**
C032401 Toggle Detented
C032403 Toggle Momentary
C032405 Nylon Button
C032407 Nylon Ball
C032421 Metal Toggle Detented
C032423 Metal Toggle Momentary
C032425 Metal Button
C032427 Stainless Steel Ball

- 3-Way Normally Closed**
C032301 Toggle Detented
C032303 Toggle Momentary
C032305 Nylon Button
C032307 Nylon Ball
C032321 Metal Toggle Detented
C032323 Metal Toggle Momentary
C032325 Metal Button
C032327 Stainless Steel Ball

**“300” Series
10-32 Fully Ported**

Part Number	Operator
-------------	----------

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



**“300” Series
10-32 Fully Ported
Stainless Steel**

- 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 10-32 (F) Fully Ported SS 3WNC
302 Standard 2WNC	321 Standard SS 3WNC
303 Standard 3WNO	322 Standard SS 2WNC
304 Standard 2WNO	323 Cartridge 3WNC
305 10-32 (F) Fully Ported 3WNC	324 Cartridge 2WNC

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

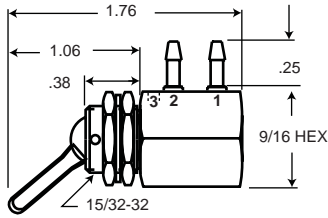
* 062 barb- recommended for use with 1/16 ID PUR tubing

Ordering Information

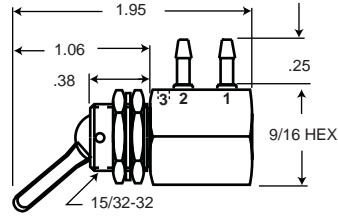
- To order standard product refer to Product Information listing.
- With Ethylene Propylene O-ring seal, change the “CO” in the part number to “CE”.
- With Viton® O-ring seal, change the “CO” in the part number to “CV”.
- Nylon toggle and push buttons are available in seven colors with black as standard. 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

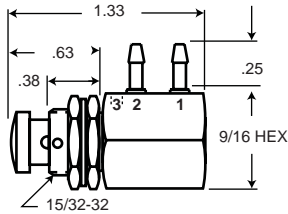
Barbed Ports
Normally Open



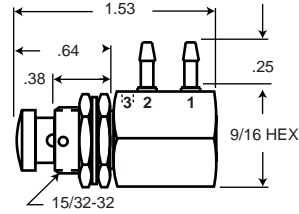
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C021603
C021701
C021703



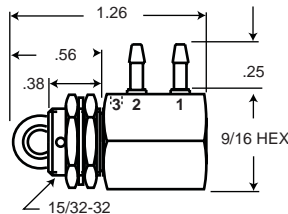
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C021403
C021501
C021503



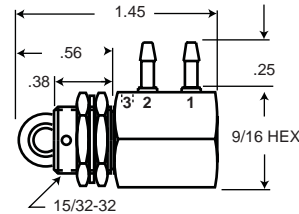
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C021705
C021725



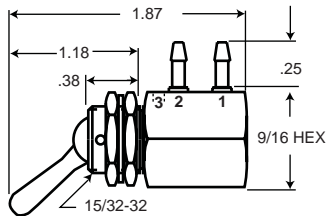
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C021505
C021525



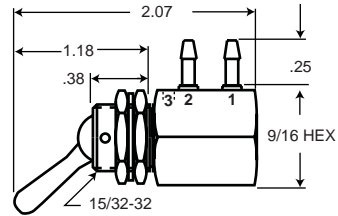
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C021627
C021707
C021727



C021407
C021427
C021507
C021527



C021621
C021623
C021721
C021723



C021421
C021423
C021521
C021523

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

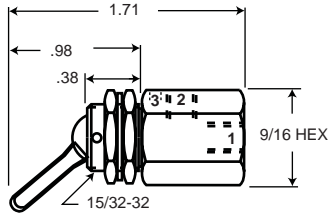
● Port 3 is for 3-Way products only

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

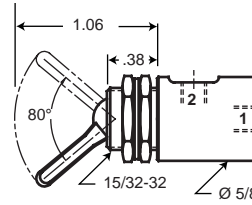
Standard

Standard

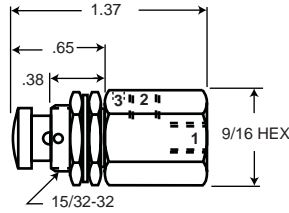
Stainless Steel



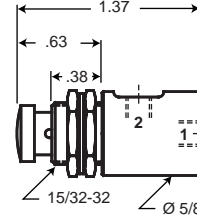
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C030301 C030303
C030401 C030403



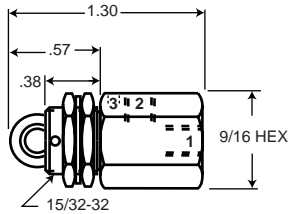
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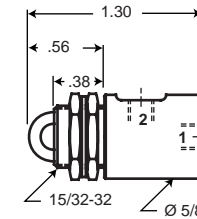
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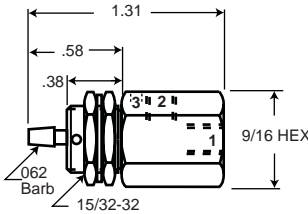
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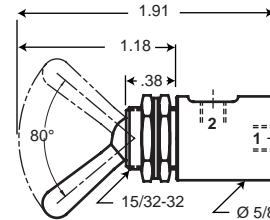
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C030307 C030327
C030407 C030427



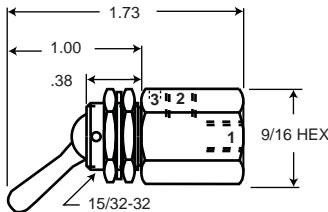
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C030109 C030209



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C032221 C032223



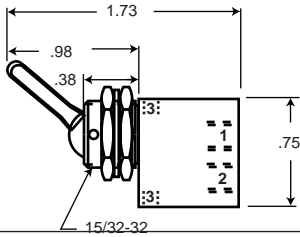
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C030321 C030323
C030421 C030423

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

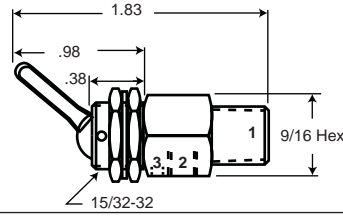
● Port 3 is for 3-Way products only

Rear Ported

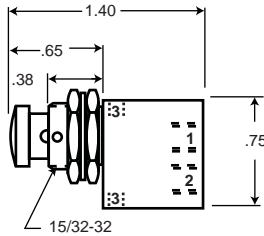
1/8 NPT Input



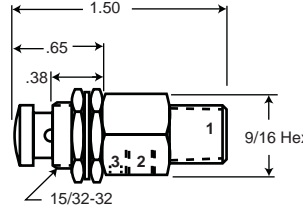
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C031001
C031003



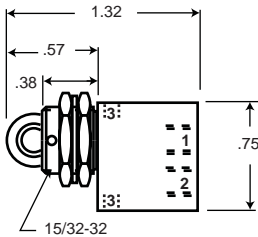
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C030701
C030703



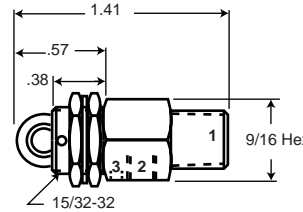
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C031025



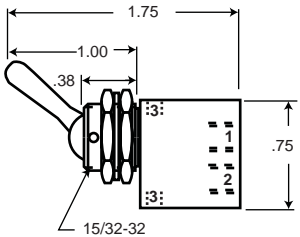
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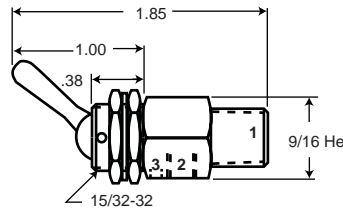
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C030727



C030921
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C031023



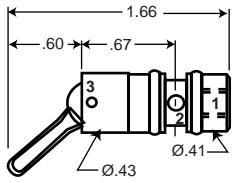
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● Refer to **Product Number Diagram** for part number description

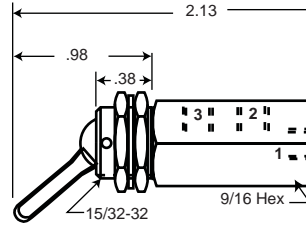
- Port 3 is for 3-Way products only
- When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

Cartridge

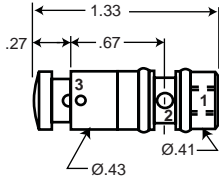
10-32 (F) Fully Ported



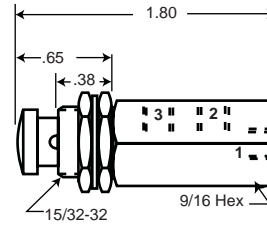
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C032303
C032401
C032403



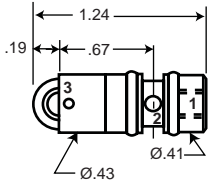
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C030503



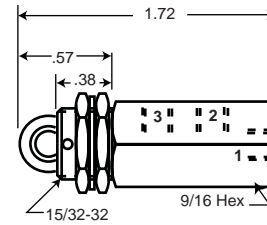
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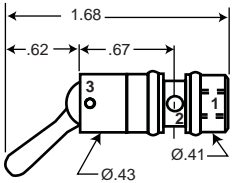
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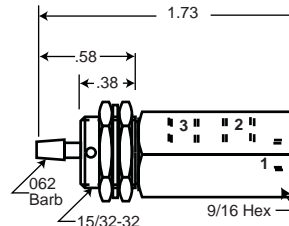
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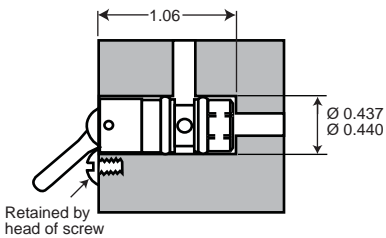
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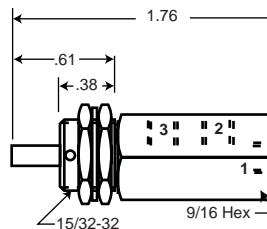
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C032423



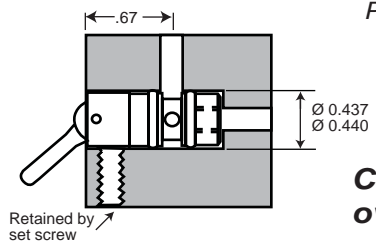
C030509



Mounting Options

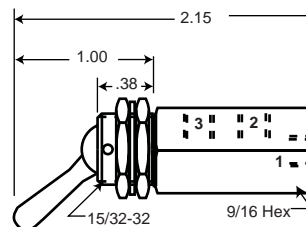


C030510



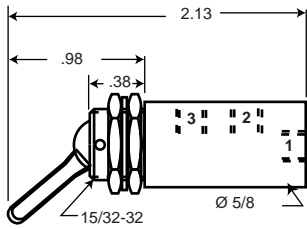
Preferred Method

Caution- do NOT over torque retention screw



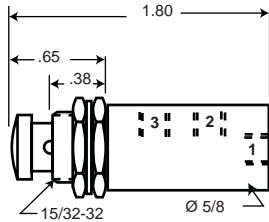
C030521
C030523

10-32 Fully Ported
Stainless Steel



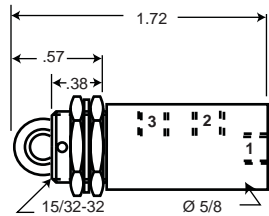
 C032001

 C032003



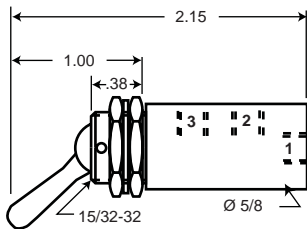
 C032005

 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)

* Cartridge Valve: a cavity tool is available to ease valve installation - contact factory for ordering information.

“400” Series Cut-away
3-Way Normally Closed

figure A
Actuated

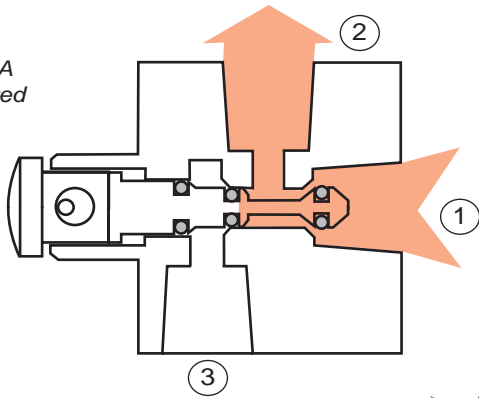
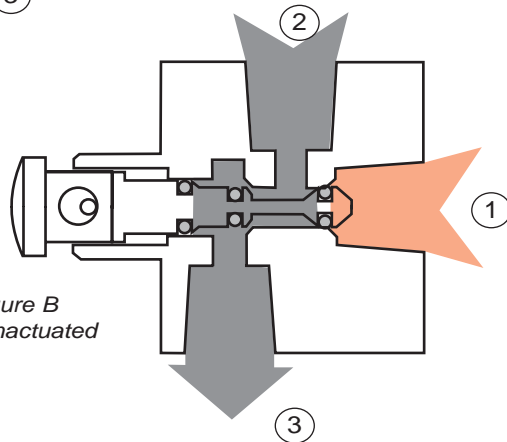


figure B
Unactuated



Function

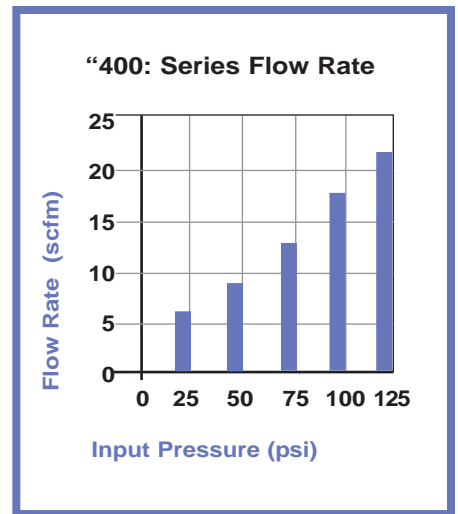
In the actuated position (figure A) air flows through port 1 travels around the lower O-ring and out port 2. The center O-ring seals the passage blocking exhaust flow.

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

Port Options

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

* Exhausts to atmosphere



“400” Series 1/8 NPT Side Ported Valves

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



Eight standard operator 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 3/16"	(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
C040707	Nylon Ball
C040721	Metal Toggle Detented
C040723	Metal Toggle Momentary
C040725	Metal Button
C040727	Stainless Steel Ball
3-Way Normally Closed	
C040601	Toggle Detented
C040603	Toggle Momentary
C040605	Nylon Button
C040607	Nylon Ball
C040621	Metal Toggle Detented
C040623	Metal Toggle Momentary
C040625	Metal Button
C040627	Stainless Steel Ball

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

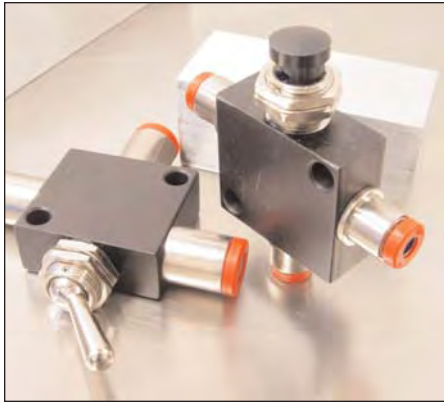


Panel mount or surface mount
1/8 NPT input valves



The “400” Series valves feature
plumbing versatility

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



- [Push-to-connect fittings](#) available for 1/8", 5/32" and 1/4" OD tubing.

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

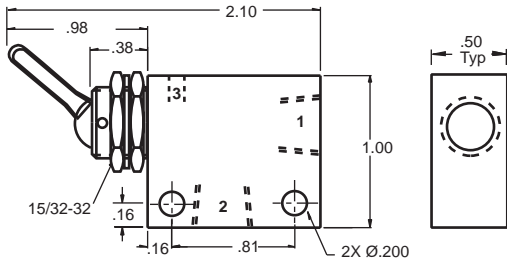
Example: 400 Series - Buna N O-rings, Standard 3-Way Normally Closed, with Detented Nylon Toggle

Ordering Information

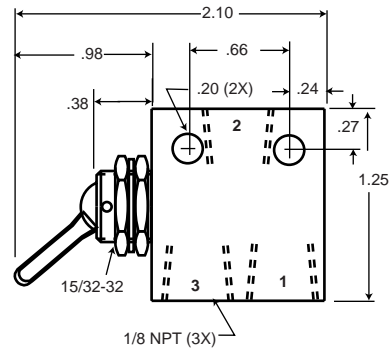
- To order standard product refer to Product Information listing.
- With Ethylene Propylene O-ring seal, change the "CO" in the part number to "CE".
- With Viton® O-ring seal, change the "CO" in the part number to "CV".
- Cartridge valve: a cavity tool is available to ease valve installation - contact factory for ordering information.
- 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](#)).

1/8 NPT Standard

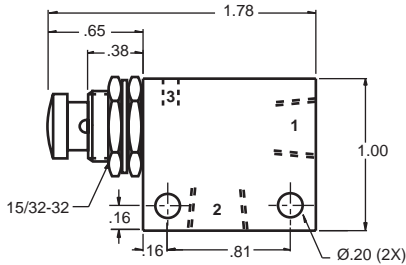
1/8 NPT Side Ported



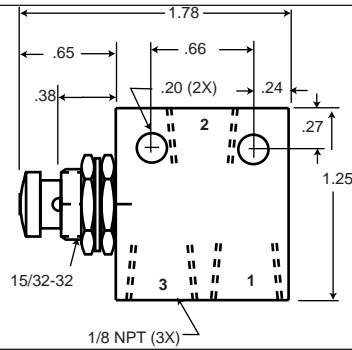
C040101
C040103
C040201
C040203



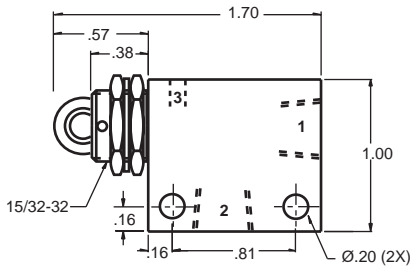
C040401
C040403



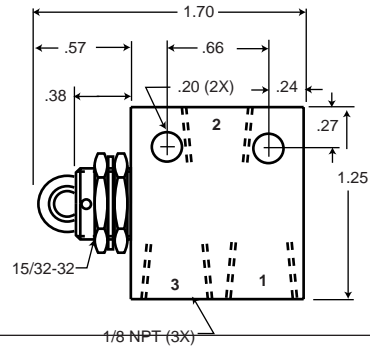
C040105
C040125
C040205
C040225



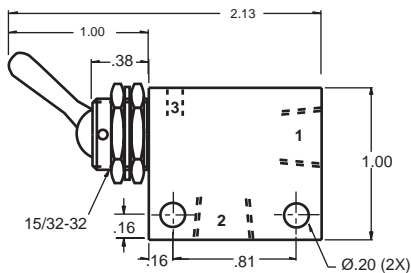
C040405
C040425



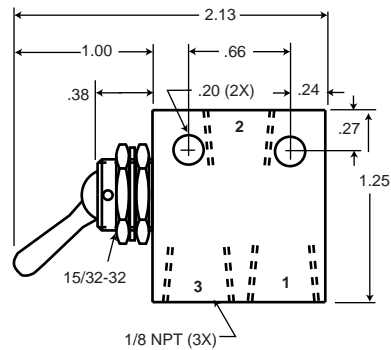
C040107
C040127
C040207
C040227



C040407
C040427



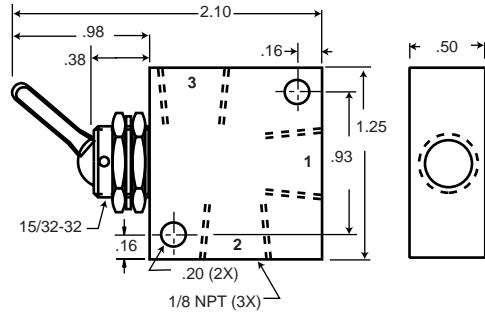
C040121
C040123
C040221
C040223



C040421
C040423

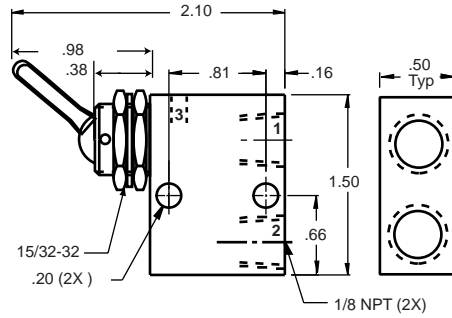
- Port 3 is for 3-Way products only
- When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

1/8 NPT Fully Ported

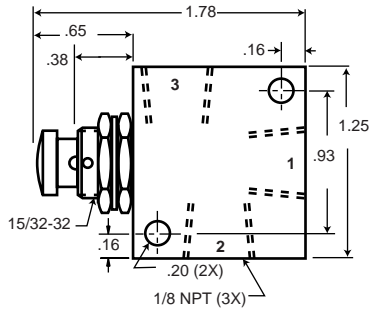


**C040501
C040503**

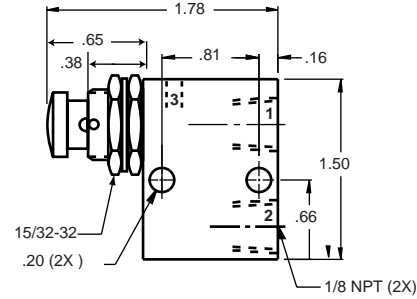
1/8 NPT Rear Ported



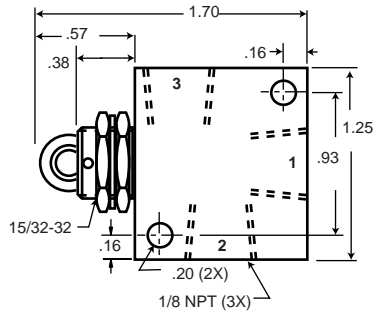
**C040901
C040903
C041001
C041003**



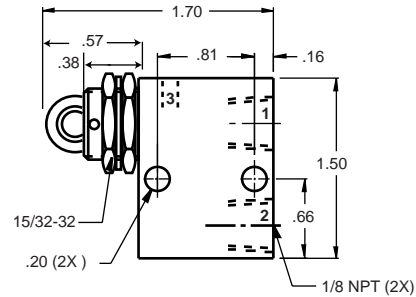
**C040505
C040525**



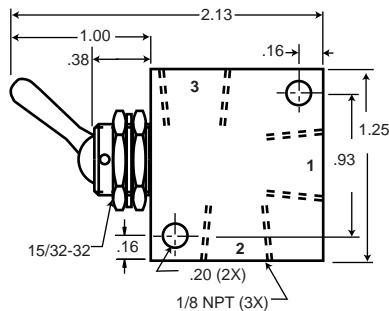
**C040905
C040925
C041005
C041025**



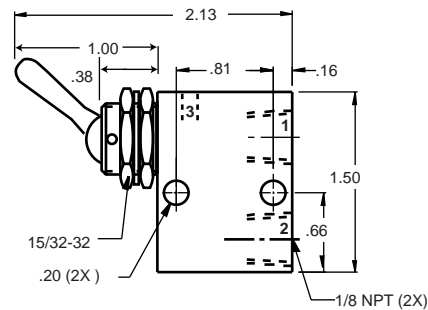
**C040507
C040527**



**C040907
C040927
C041007
C041027**



**C040521
C040523**

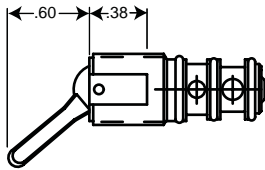


**C040921
C040923
C041021
C041023**

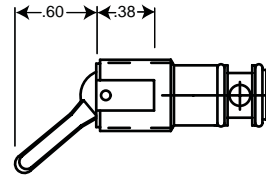
- Port 3 is for 3-Way products only
- When design makes a dimension critical- contact factory for confirmation. All dimensions shown subject to change without notice.

3-Way Cartridge

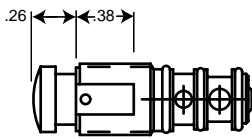
2-Way Cartridge



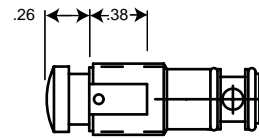
C040601
C040603



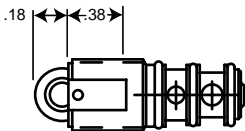
C040701
C040703



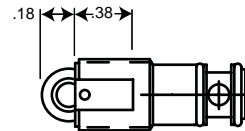
C040605
C040625



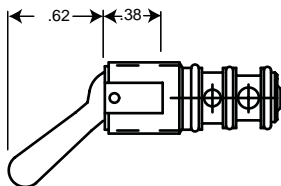
C040705
C040725



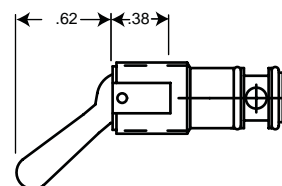
C040607
C040627



C040707
C040727



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

- 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

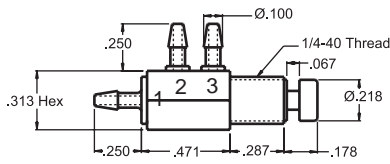
Plumbing Options for Fully Ported Valves

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

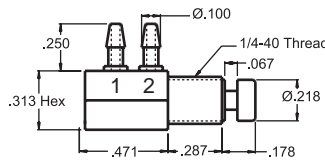
Note: For vacuum application, plumb vacuum source at port 3

C_v per ANSI / (NFPA) T3.21.3

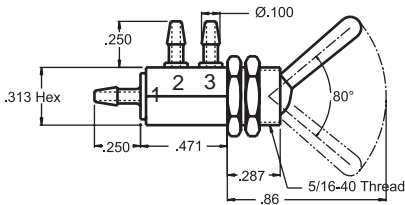
Sub-Micro Valve



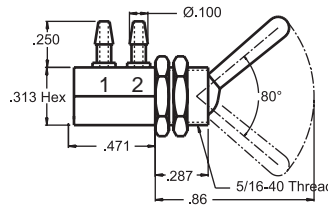
AMM-30-1616



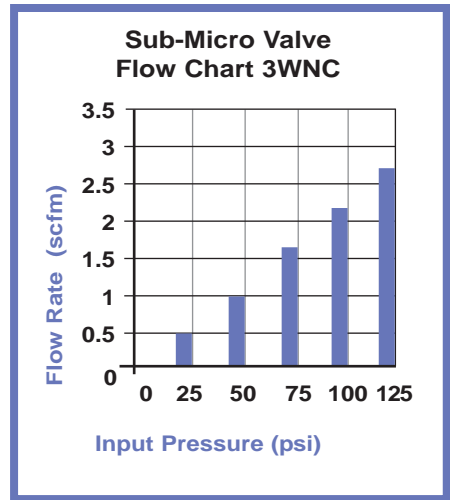
AMM-20-1616



HMM-30-1616



HMM-20-1616



Materials

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

Mounting Method

Nominal panel mounting hole dimension

AMM-20-1616	Ø 17/64"	(1) nut provided
HMM-20-1616	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

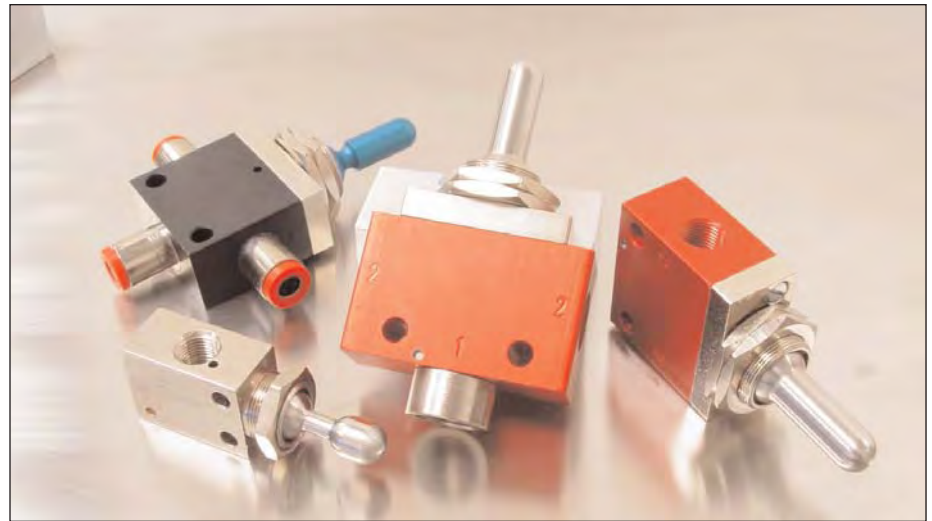
Part Number	Operator
2-Way Normally Closed	
AMM-20-1616	Metal Button
HMM-20-1616	Toggle Detented
3-Way Normally Closed	
AMM-30-1616	Metal Button
HMM-30-1616	Toggle Detented

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

- 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	.003	.005
C04250X C04260X	1-2		.47	19	41	.006	.030
C04280X C04290X	1-2/ 2-1	0 to 150 psi	.70	27	57	.005	.009

Caution: ONLY High Flow version can be plumbed with input at Port 2.
C_v per ANSI / (NFPA) T3.21.3

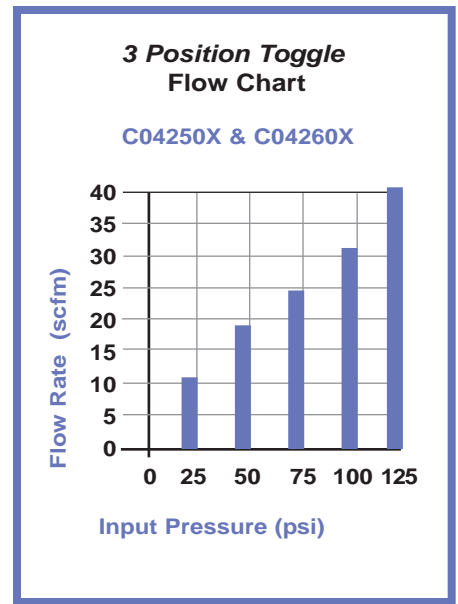
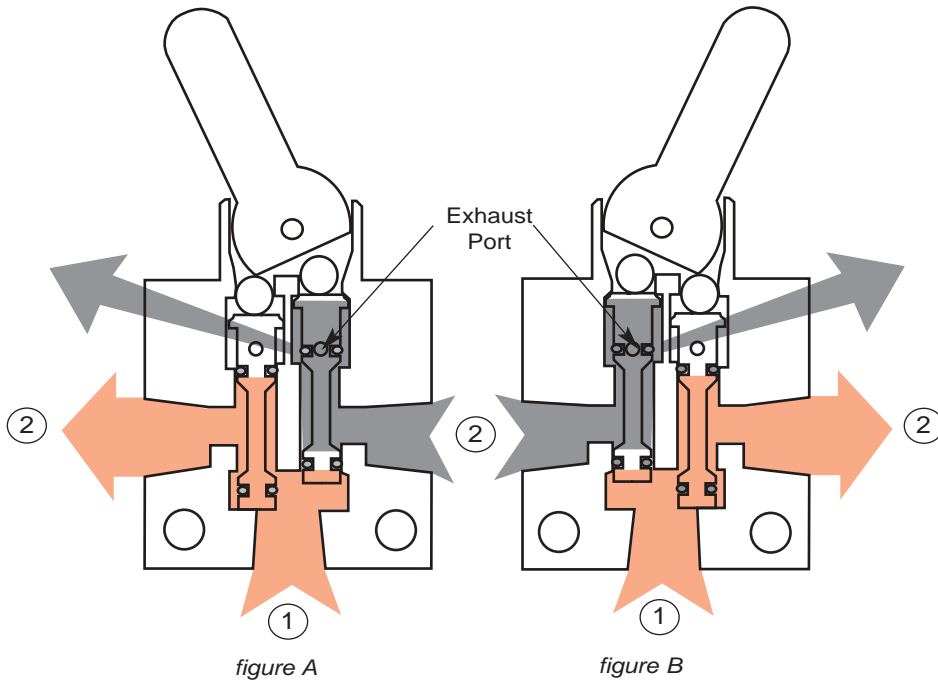
Actuation Force

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

Materials

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

3 Position Toggle Cut-away 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

Product Information

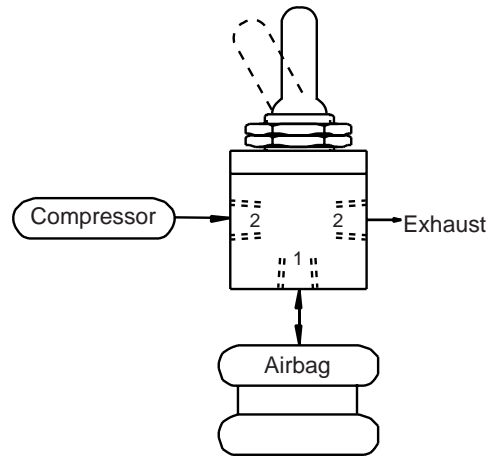
"400" Series 3-Position Toggle Valve

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
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

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

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)

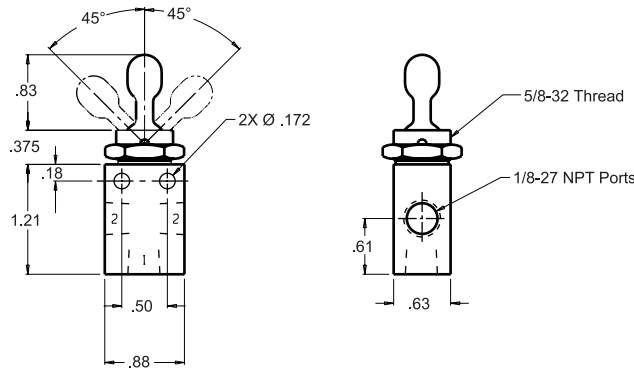
- Can be used in 4-way applications (open center) to extend and retract cylinders
- Pneumatic pilot control on a hydraulic valve

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".

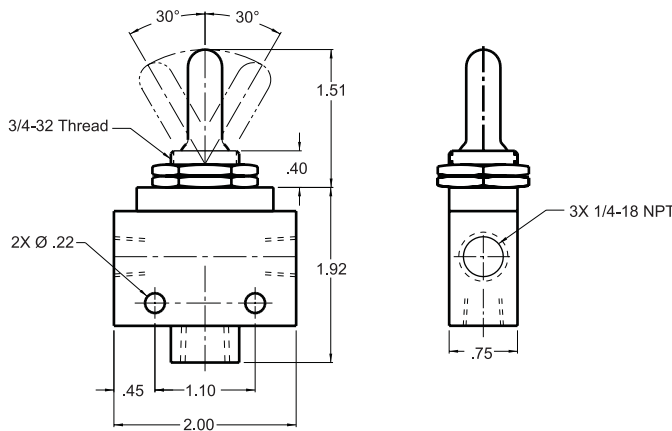
3-Position Toggle

Mini
C04240X

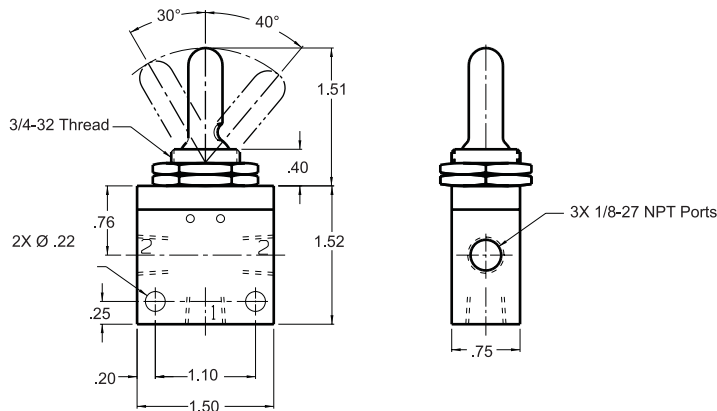


The smaller electroless nickel version (C04240X) is ideal in limited space applications.

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

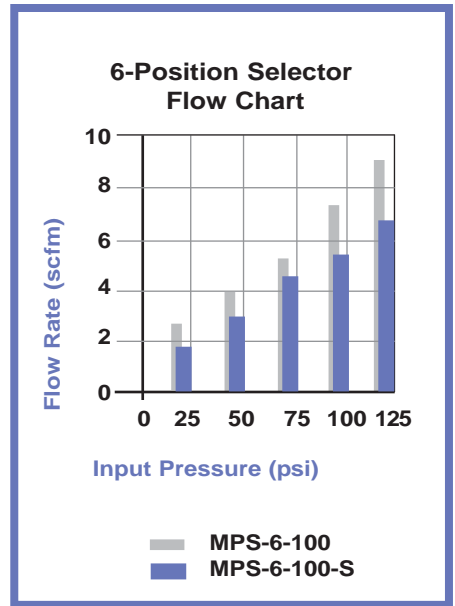
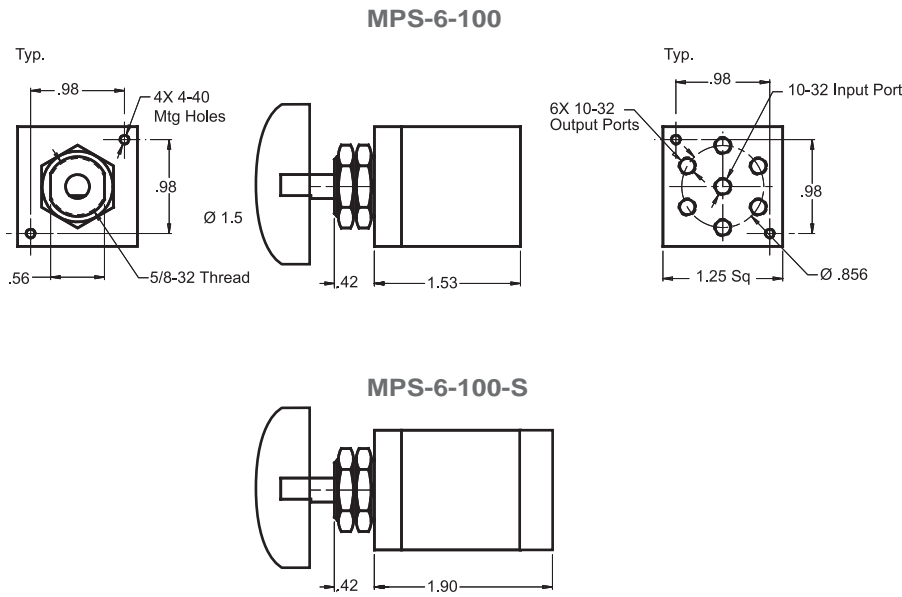
C_v per ANSI / (NFPA) T3.21.3

Materials

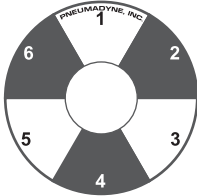


Aluminum/Anodize, Brass/Electroless Nickel, Stainless Steel, Buna-N, Acetal Copolymer, PTFE, Phenolic

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

6-Position Selector



Standard Products Ideal for use with Selector Valves

<p>6-Position Selector Label (included)</p>	 <ul style="list-style-type: none"> ● 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.
<p>O-ring Barb Fittings & Plugs (sold separately)</p>	 <ul style="list-style-type: none"> ● 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
<p>Push-to-Connect Fittings (sold separately) Product No. SF-125PI SF-156PI</p>	 <ul style="list-style-type: none"> ● 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
	Ports 1-2	Ports 1-4	Ports 1-2		Ports 1-4			
			50 psi	125 psi	50 psi	125 psi		
“45” Series 10-32 (F)	.23	.23	7.8	17.3	7.8	17.3	.02	.03
“45” Series 1/8 NPT (F)	.37	.37	12.1	27.2	12.1	27.2	.01	.02
“4” Series	.13	.13	5.1	10.9	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 Cut-away 4-Way 2-Position

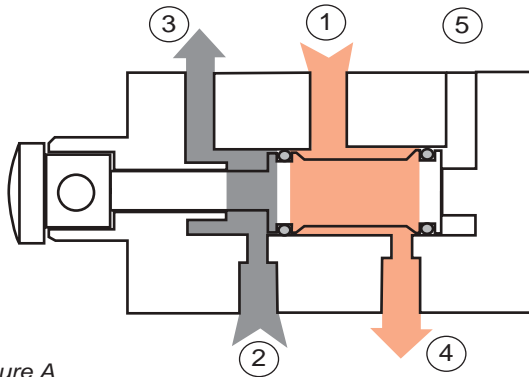


figure A

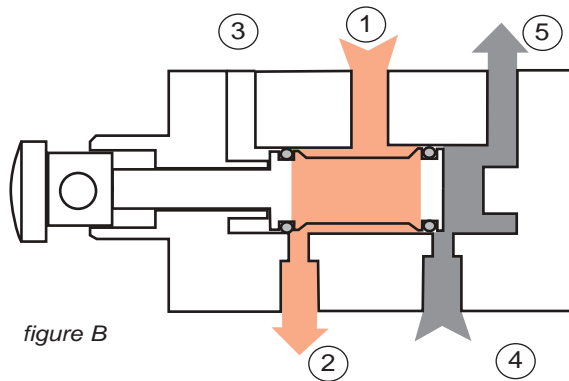


figure B

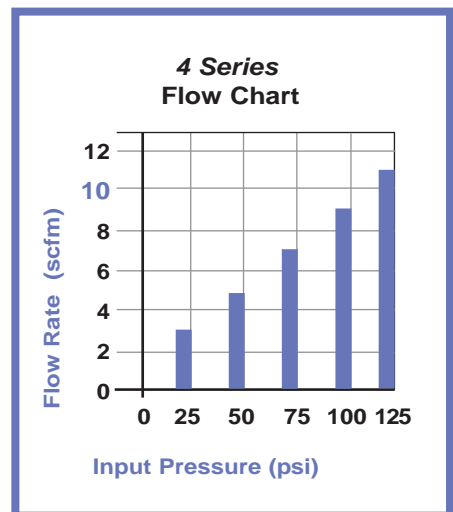
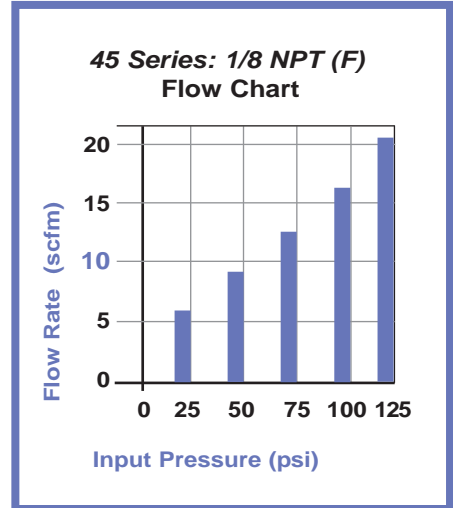
Function

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



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
157= 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
PK= Push/Pull Knob
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-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
5/32" Push-in	H4C-125-DT	Heavy Duty Toggle-Det
	A4C-157-DP	Double Push Button
	A4C-157-PK	Push/Pull Knob
	A4C-157-SR	Button w/ Spring Return
F4C-157-SR	Heavy Duty Toggle-Mom	
H4C-157-DT	Heavy Duty Toggle-Det	

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

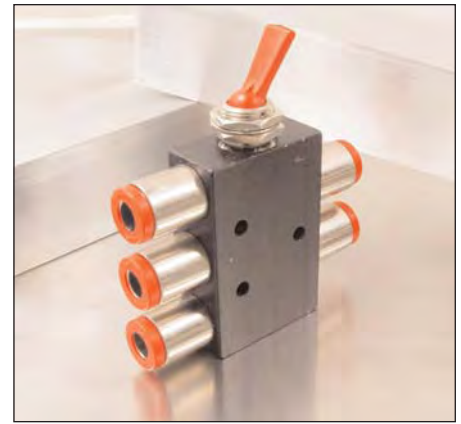
Porting	Part Number	Actuator
1/4" Push-in	A4C-250-DP	Double Push Button
	A4C-250-PK	Push/Pull Knob
	A4C-250-SR	Button w/ Spring Return
	F4C-250-SR	Heavy Duty Toggle-Mom
	H4C-250-DT	Heavy Duty Toggle-Det

“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

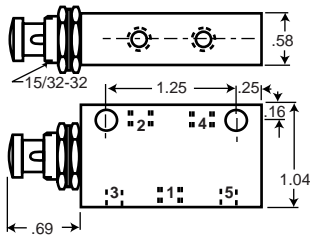
“45” Series
1/8 NPT (F) Fully Ported
4-Way 5 Port 2 Positions

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

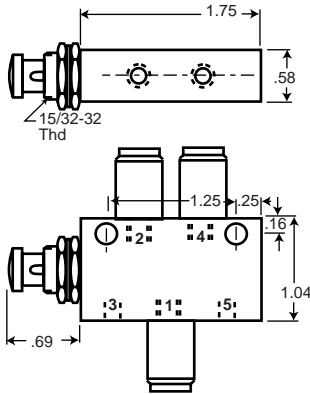


“45” series valves are also available with 1/8”, 5/32”, 1/4” and push-to-connect fittings

“4” Series

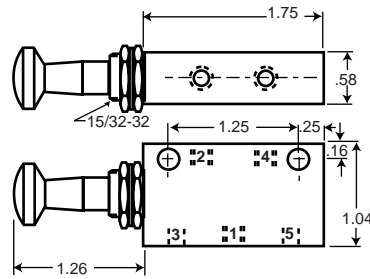


Spring Return
A4C-100-SR
A4N-100-SR

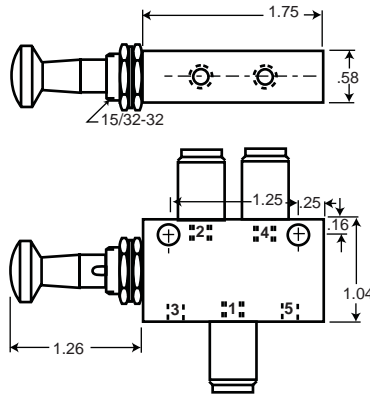


Spring Return
A4C-125-SR
A4C-157-SR
A4C-250-SR

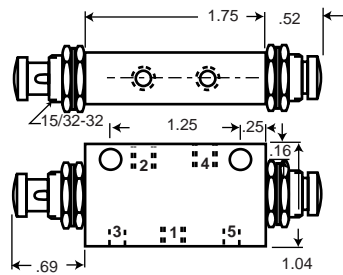
“4” Series



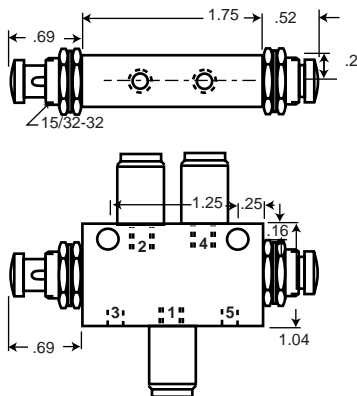
Push/Pull Knob
A4C-100-PK
A4N-100-PK



Push/Pull Knob
A4C-125-PK
A4C-157-PK
A4C-250-PK

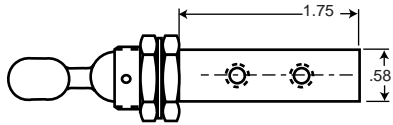


Double Push Button
A4C-100-DP
A4N-100-DP

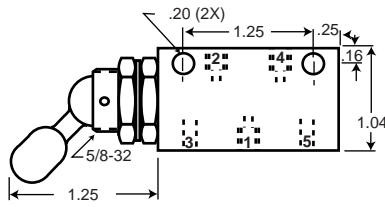


Double Push Button
A4C-125-DP
A4C-157-DP
A4C-250-DP

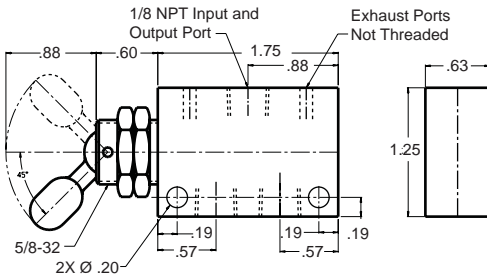
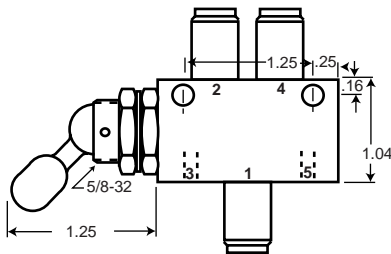
“4” Series



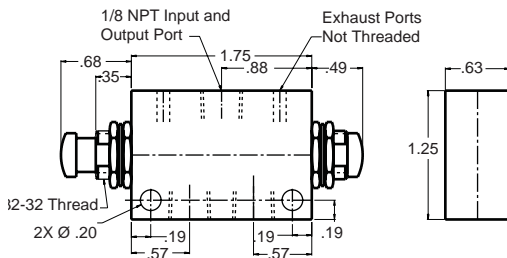
Heavy Duty Toggle
H4C-100-DT
H4N-100-DT
F4C-100-SR



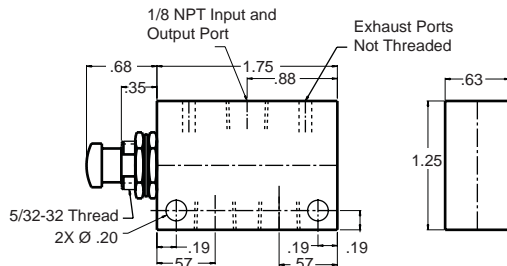
Heavy Duty Toggle
H4C-125-DT
H4C-157-DT
H4C-250-DT
F4C-125-SR
F4C-157-SR
F4C-250-SR



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



Double Push Button
A4C-1/8-DP

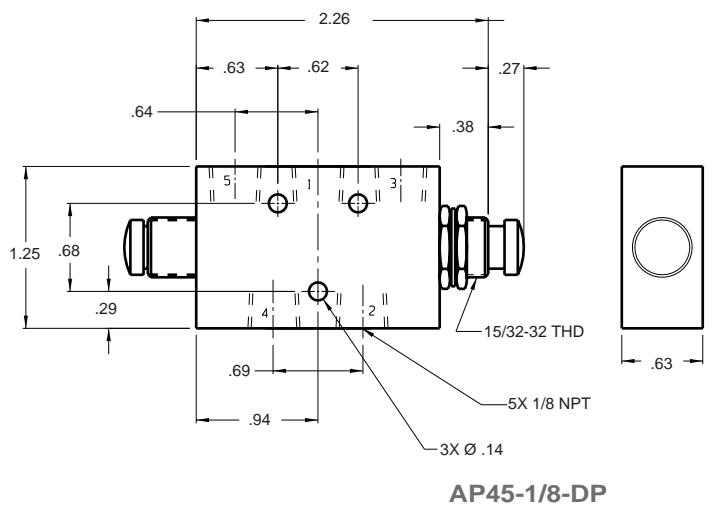
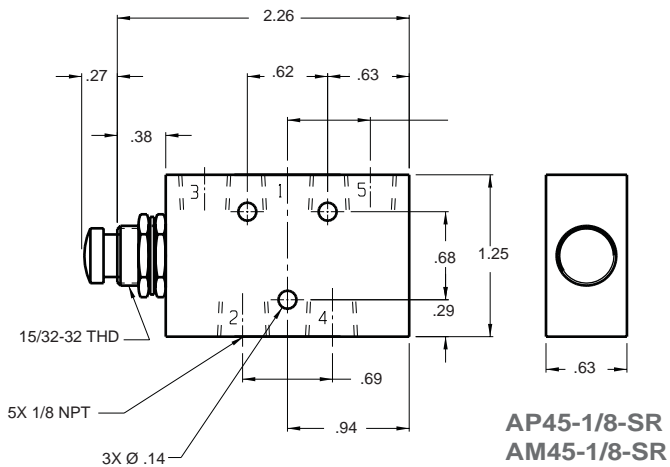
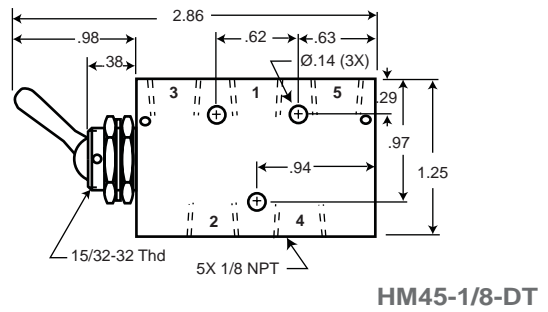
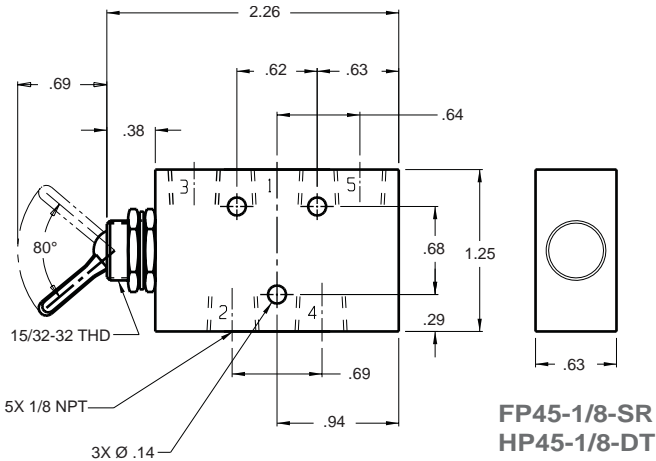


Spring Return
A4C-1/8-SR

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

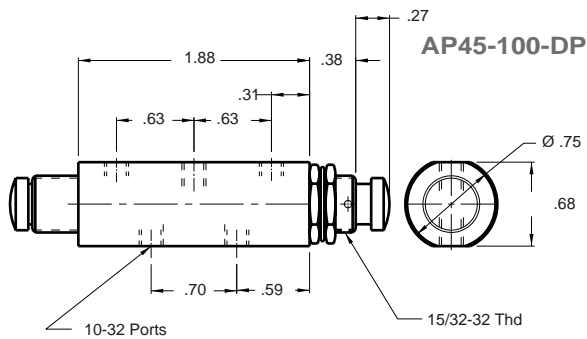
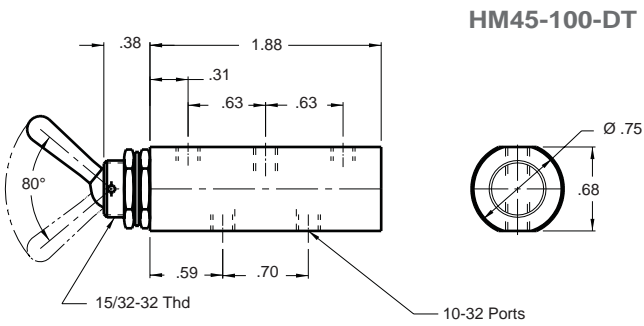
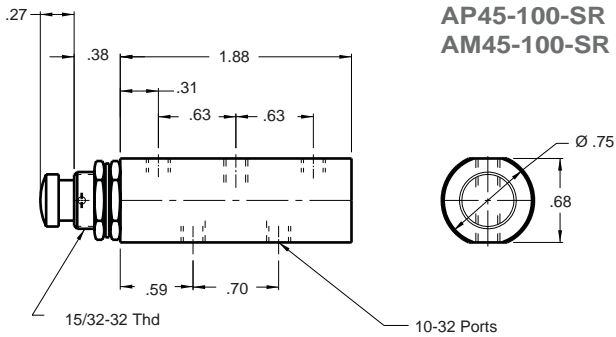
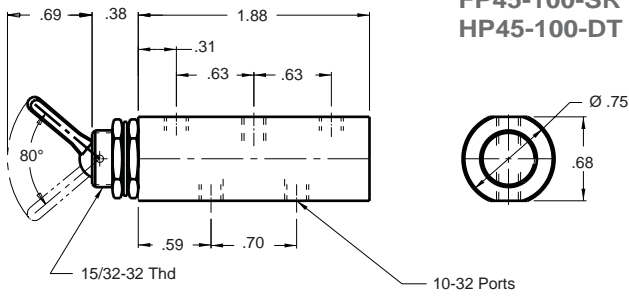
“45” Series

“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 70-75](#) 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

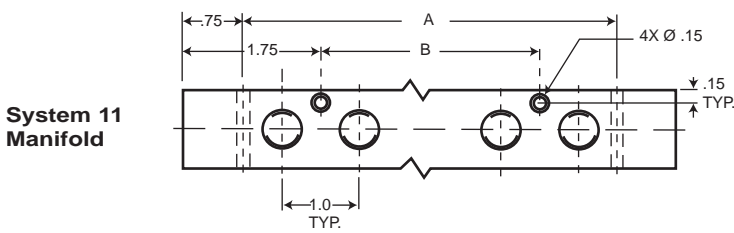
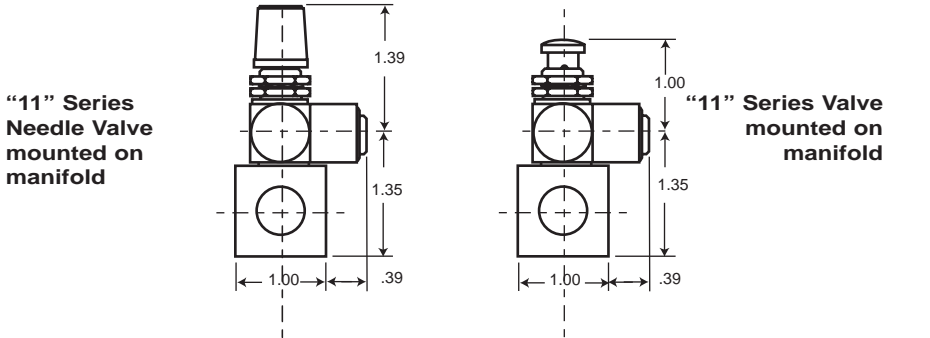
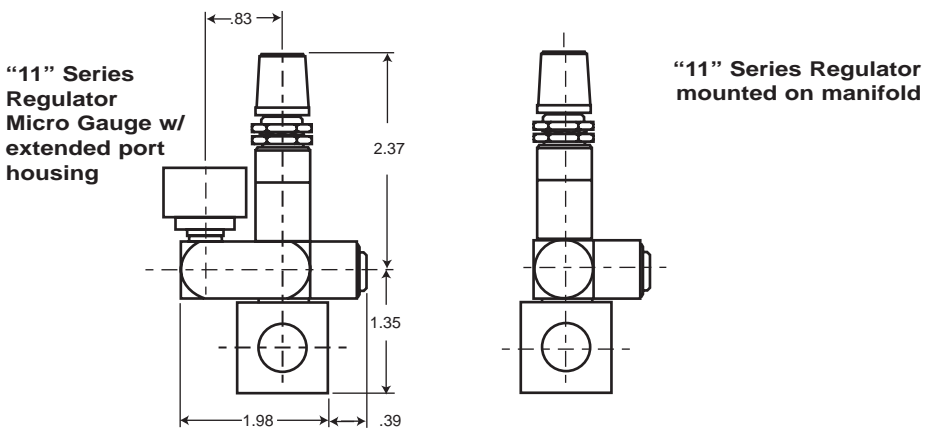
	Part Number	Output
Relieving		
Knurled Knob	R11-RK-14	1/8 NPT (F)
	R11-RK-16	1/4 Push-in
	R11-RK-17	5-32 Push-in
Panel Knob	R11-RP-14	1/8 NPT (F)
	R11-RP-16	1/4 Push-in
	R11-RP-17	5-32 Push-in
Non-Relieving		
Knurled Knob	R11-NK-14	1/8 NPT (F)
	R11-NK-16	1/4 Push-in
	R11-NK-17	5-32 Push-in
Panel Knob	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	
A11-20-14	1/8 NPT (F)
A11-20-16	1/4 Push-in
A11-20-17	5-32 Push-in
2-Way Normally Open	
A11-21-14	1/8 NPT (F)
A11-21-16	1/4 Push-in
A11-21-17	5-32 Push-in
3-Way Normally Closed	
A11-30-14	1/8 NPT (F)
A11-30-16	1/4 Push-in
A11-30-17	5-32 Push-in
3-Way Normally Open	
A11-31-14	1/8 NPT (F)
A11-31-16	1/4 Push-in
A11-31-17	5-32 Push-in



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

- Sizes: 22mm and 30mm
- Variety of operators
- Momentary and latching actuation
- Assortment of colors
- Oil tight seal
- Contact blocks available for electrical controls
- For use with most Pneumadyne directional control valves



Oil Tight Operators

Pneumadyne's Oil Tight Operators feature a wide variety of 22mm & 30mm buttons, knobs, levers and keys ideal for use in control panels. This expanded product offering also features momentary and latching actuation options to easily fit system requirements.

The Oil Tight Operators can be used with most Pneumadyne directional control valves (exception: "4" Series). The valve adaptor assembly (required) quickly snaps to the operator for easy installation.

The addition of contact blocks provides the flexibility to accommodate pneumatic and electrical functions while maintaining a consistent appearance on the outside of the panel. Two styles of mounting clips are available to connect the contact blocks and the oil tight operator. The single clip easily snaps to the contact block to control one electrical function. The 3-module locking clip provides the ability to select between two electrical circuits and features a locking lever to quickly connect and disconnect the contact block and operator. All Pneumadyne oil tight operators are UL, CSA and European code approved with the "CE" marking on the contact block. Unless otherwise noted the products meet NEMA 4, 4X, 12, and 13 and IP65 requirements.

Maintain the in-front-of-the-panel look with flexibility of pneumatic or electrical controls behind-the-panel



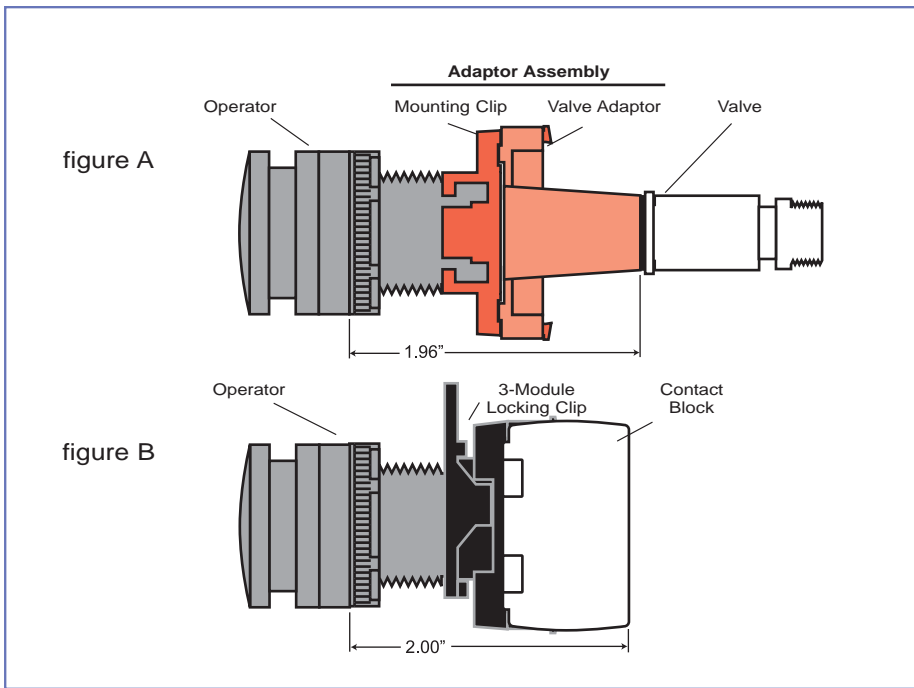
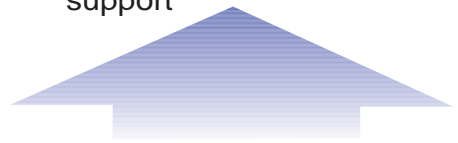
All dimensions and specifications are subject to change without notice

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



Manual Valve Assembly

For use with manually operated pneumatic valves (figure A) simply insert the spring support into the valve adaptor and snap to the operator end. All operators are notched to ensure proper orientation at installation.

Contact Block Assembly

Snap the selected mounting clip to the operator end and attach the contact block. The locking clip enables the assembler to insert the operator into the mounting clip and lock "ON" (figure B); for fast release slide lever "OFF" and remove the operator.



Pneumadyne custom designs products for use in definite purpose applications

Flush Button

Momentary
 FBRM-22-2
 FBRM-22-3
 FBRM-22-5
 FBRM-22-6



Latching
 FBRD-22-2
 FBRD-22-3
 FBRD-22-5
 FBRD-22-6

Push ON/
 Push OFF

Super-Flush Button

Momentary
 SFBRM-22-2
 SFBRM-22-3
 SFBRM-22-5
 SFBRM-22-6



Mount in 30 mm
 diameter hole

To install: Remove nut and collar, insert operator through [pre-drilled 30mm panel hole](#), install collar behind panel and tighten nut.

Raised Button

Momentary
 RBRM-22-2
 RBRM-22-3
 RBRM-22-5
 RBRM-22-6



Latching
 RBRD-22-2
 RBRD-22-3
 RBRD-22-5
 RBRD-22-6

Push ON/
 Push OFF

Shrouded Button

Momentary
 SBRM-22-2
 SBRM-22-3
 SBRM-22-5
 SBRM-22-6



Shroud: rubber

Mushroom Button 40mm

Momentary
 MBRM-22-2
 MBRM-22-3
 MBRM-22-5
 MBRM-22-6

collar:
 mat chrome
 plastic



Push/Pull
 MBRP-22-2
 MBRP-22-3
 MBRP-22-5
 MBRP-22-6

Push ON/
 Pull OFF

collar:
 mat anodized
 alum

Mushroom Button

Push / Turn
 MBRT-22-2
 MBRT-22-3
 MBRT-22-5
 MBRT-22-6

Push ON/
 Turn OFF

collar:
 mat chrome
 plastic



Maintain the in-front-of-the-panel look with flexibility of pneumatic or electrical controls behind-the-panel

Toggle Switch

Momentary
 TRM-22-2

Latching
 TRD-22-2

collar:
 mat chrome
 plastic



Flush Square-Head

Momentary
 FBSM-22-2
 FBSM-22-3
 FBSM-22-5
 FBSM-22-6



Raised Square-Head

Momentary
 RBSM-22-2
 RBSM-22-3
 RBSM-22-5
 RBSM-22-6



Lever Handle

2 Positions
45° Latching
 LR2A-22-2
 LR2A-22-3
 LR2A-22-5
45° Spring return
 LR2B-22-2
 LR2B-22-3
 LR2B-22-5
90° Latching
 LR2C-22-2
 LR2C-22-3
 LR2C-22-5



Selector Switch
 collar:
 mat chrome
 plastic

Knob Handle

2 Positions
45° Latching
 NR2A-22-2
 NR2A-22-3
 NR2A-22-5
45° Spring return
 NR2B-22-2
 NR2B-22-3
 NR2B-22-5
90° Latching
 NR2C-22-2
 NR2C-22-3
 NR2C-22-5



Selector Switch
 collar:
 mat chrome
 plastic

Raised Key Lock*

Momentary- Push Function
 KRP1-22-2



Lock: turn right
 90° push-in and
 turn left
**Momentary
 operation:**
 turn right 90°
 ● Lockable in
 unactuated
 position
 ● Key remov-
 able in both
 positions

Raised Key Lock*

2 Positions
45° Latching
 KR2A-22-2
 Key removable in vertical position
45° Spring return
 KR2B-22-2
 Key removable in vertical position
90° Latching
 KR2C-22-2
 Key removable in vertical position
 KR2D-22-2
 Key removable in both positions



Mushroom Key Lock*

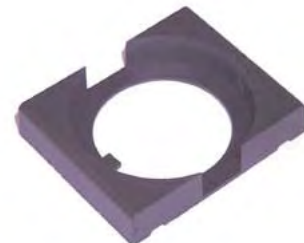
**Latching
 Push Function**
 KRP2-22-3



Lock: push in
Release: turn
 key right 90°
Color: Red
 ● Key remov-
 able in vertical
 position

Square Bezel

SB-22
 ● Converts 22mm
 operator to square
 silhouette



* Key lock switches meet IEC standards for water jet spray resistance. NEMA 12 & 13

Flush Button

Momentary
 FBRM-30-2
 FBRM-30-3
 FBRM-30-5
 FBRM-30-6



Raised Button

Momentary
 RBRM-30-2
 RBRM-30-3
 RBRM-30-5
 RBRM-30-6



Latching
 RBRD-30-2
 RBRD-30-3
 RBRD-30-5
 RBRD-30-6

Push ON/
 Push OFF

Mushroom Button 40mm

Momentary
 MBRM-30-2
 MBRM-30-3
 MBRM-30-5
 MBRM-30-6



Push / Pull
 MBRP-30-2
 MBRP-30-3
 MBRP-30-5
 MBRP-30-6

Push ON/
 Pull OFF

collar:
 mat anodized
 alum

collar:
 mat chrome
 plastic

Mushroom Button

Push / Turn
 MBRT-30-2
 MBRT-30-3
 MBRT-30-5
 MBRT-30-6



Push ON/
 Turn OFF

Palm Button 70mm

Momentary
 PBRM-30-2
 PBRM-30-3
 PBRM-30-6



Lever Handle

2 Positions
45° Latching
 LR2A-30-2
 LR2A-30-3
 LR2A-30-8
45° Spring return
 LR2B-30-2
 LR2B-30-3
 LR2B-30-8
90° Latching
 LR2C-30-2
 LR2C-30-3
 LR2C-30-8



**Selector
 Switch**

collar:
 chrome plated
 ABS

Knob Handle

Positions
45° Latching
 NR2A-30-2
 NR2A-30-3
 NR2A-30-8
45° Spring return
 NR2B-30-2
 NR2B-30-3
 NR2B-30-8
90° Latching
 NR2C-30-2
 NR2C-30-3
 NR2C-30-8



**Selector
 Switch**

collar:
 chrome plated
 ABS

Raised Key Lock*

Momentary
KRP1-30-2



Push Function

Lock: turn right 90° push-in and turn left

Momentary operation: turn right 90°

- Lock 'on' or Lock 'off'
- Key removable in both positions

Mushroom Key Lock*

Momentary
KRP2-30-3



Push Function

Lock: push in

Release: turn right 90°

- Key removable in vertical position

* Key lock switches meet IEC standards for water jet spray resistance. NEMA 12 & 13

Raised Key Lock*

2 Positions
45° Latching
KR2A-30-2

45° Spring return
KR2B-30-2

90° Latching
KR2C-30-2
Key removable in vertical position

KR2D-30-2
Key removable in both positions



collar:
chrome plated
ABS

- Key removable in vertical position



Pneumadyne designs custom products to fit specific application requirements

Reduction Ring

Ø 30/22
RR-3022

Converts 30 mm hole to 22 mm



Anti-Rotation Ring

AR-22 22mm
AR-30 30mm

Suggested for use with knob, lever, and key style operators

See [Panel Drill Pattern](#) for required cut when using anti-rotation ring.



Mounting Wrench

Ø 22/30
MW-2230



Name Plates

Replace " * " with desired text	Dimensions
NP22-* 22 mm	1.19 x 1.19 from center
NP30-* 30 mm	1.58 x 1.34 from center

BLANK	OFF	REVERSE	EM STOP
FAST	ON	SLOW	(emergency stop)
FORWARD	RAISE	START	
LOWER	RESET	STOP	

Black plastic auxigraph frame name-plate features 'snap into frame' insert with white text.



Single Clip

AC-22 22mm Black
AC-30 30mm Gray

For use with contact blocks



Contact Blocks

CB-10 Normally Closed
CB-11 Normally Open

Screw terminals

Dimensions
1.57 x .96 x .39



Adaptor

OA-22 Black/Black
OA-30 Gray/Black
OA-22L Black/Black Latching
OA-30L Gray/Black Latching

Includes spring support and spring
Required for use with all Pneumadyne directional control valves



3 Module Locking Clip

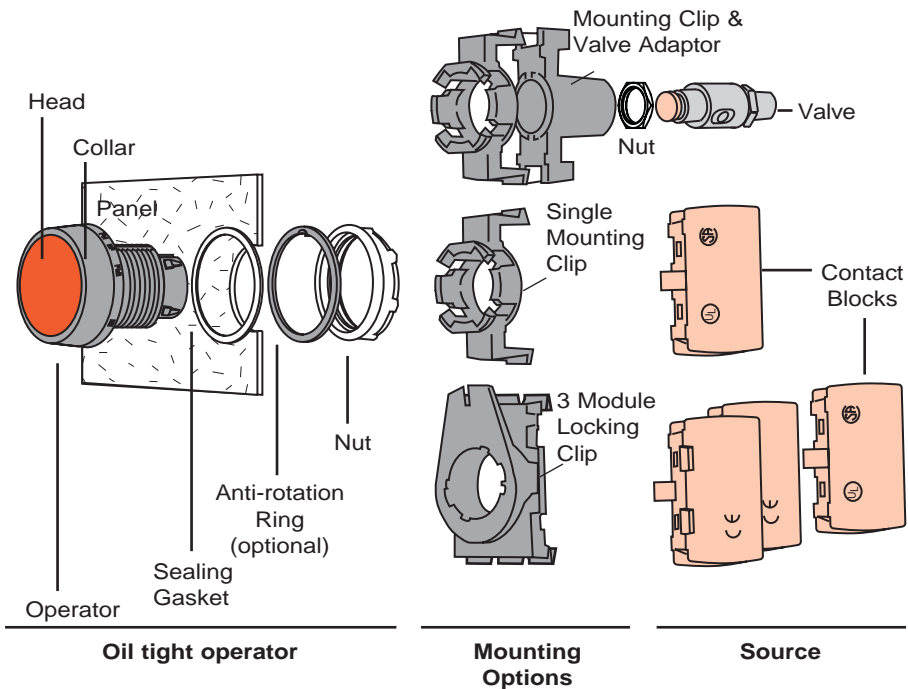
LC-3

For use with contact blocks
Lock "ON" for secure fit
Slide "OFF" for fast release



Contact factory for additional Technical Specifications

Control Panel Installation



Contact Block Electrical Ratings

Alternating Current 50/60 Hz Continuous Current 10 Amps

Voltage	Max. Amps Make	Break
120	60	6.0
220/240	30	3.0
440/480	15	1.5

Direct Current Continuous Current 5 Amps

Voltage	Max. Amps Make	Break
24	5.0	5.0
125	1.1	1.1
250	0.55	0.55

Motor Ratings

Phase	Voltage	Horse Power
1	110 Vac	0.5
1	220 Vac	1.0
3	220 / 240	3.0
3	440 / 480	5.0

The above diagram illustrates the assembly of the oil tight operator with a manual or electrical device. To begin ensure the collar is screwed fully onto the head and the sealing gasket is in place on the oil tight operator.

Source: Valve

1. Remove the nut and insert the operator through the pre-drilled panel hole ([see Panel Drill Pattern](#))
2. When required - position the anti-rotation ring with tab at top/vertical position (the operator is notched to fit with tab and prevent rotation)
3. Tighten the nut behind the panel by hand or with mounting wrench (sold separately MW-2230)
4. Insert the spring support into the valve adaptor (spring side first)
5. Align the "legs" of the adaptor with the notch in the operator and snap the valve adaptor on the operator end
6. Thread the selected valve into the adaptor (one locknut and washer are required for space and alignment purposes)

Source: Contact Block

1. Valve adaptor is not required. Follow above steps 1, 2 and 3
2. Snap the desired mounting clip on the operator end, be sure to align the "legs" of the mounting clip vertically with the notch in the operator
3. Snap the contact block onto the mounting clip



Product Number Guide

F B R M - 2 2 - 2

Operator

FB= Flush Button
 K= Key
 L= Lever
 MB= Mushroom Button
 N= Knob
 PB= Palm Button
 RB= Raised Button
 SB= Silicone Shrouded Button
 SFB= Super Flush Button
 T= Toggle

Shape

R= Round
 S= Square

Actuation

D= Latching
 M= Momentary
 P= Push Pull
 P1= Lock: turn right 90° push-in and turn left;
 Momentary operation: turn right 90°
 P2= Lock: push in; release: turn key right 90°
 T= Push / Turn
 2A= 2 Position, 45° Latching
 2B= 2 Position, 45° Momentary
 2C= 2 Position, 90° Latching
 2D= 2 Position, 90° Latching

Size

22= 22 mm
 30= 30 mm

Color Code*

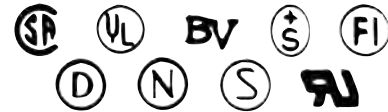
2= Black
 3= Red
 5= Green
 6= Yellow
 8= Gray

*Not all colors are available to all actuators; see product information for possible selections

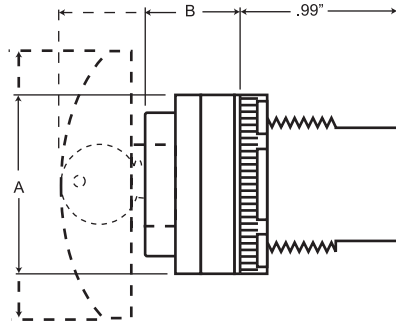
Ordering Information

- To order standard product refer to product description listing.
- All parts sold separately.
- Contact factory for additional color options.

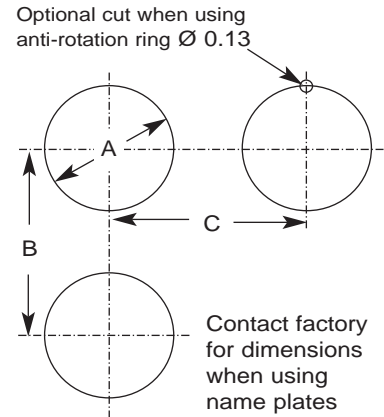
All Pneumadyne oil tight operators are UL, CSA and European code approved with the "CE" marking on the contact block



Oil Tight Operator



Panel Drill Pattern



Part Number	A	B	Part Number	A	B
22 mm Operator			30 mm Operator		
FBRD-22-*	1.16	0.49	FBRM-30-*	1.44	0.55
FBRM-22-*	1.16	0.49	KR2*-30-2	1.44	1.20/2.13
FBSM-22-*	1.16	0.49	KRP*-30-2	1.44	1.36/2.28
KR**-22-2	1.16	/2.30	LR2*-30-*	1.10 from center	1.04
KRP1-22-2	1.16	1.40/2.31	MBRM-30-*	1.57	1.04
KRP2-22-2	1.58	1.49/2.31	MBRP-30-*	1.57	1.04
LR2*-22-*	1.06 from center	1.04	MBRT-30-*	1.57	1.04
MBRM-22-*	1.57	0.96	NR2*-30-*	1.44	1.04
MBRP-22-*	1.57	1.30	PBRM-30-*	2.76	1.71
MBRT-22-*	1.57	0.96	RBRD-30-*	1.44	.55/.96
NR2*-22-*	1.16	1.04	RBRM-30-*	1.44	.55/.96
RBRD-22-*	1.16	0.74			
RBRM-22-*	1.16	0.74			
RBSM-22-*	1.16	0.94			
SBRM-22-*	1.22	0.72			
SFBRM-22-*	1.50	0.12			
TR*-22-2	1.16	0.82			

All measurements are given in inches unless otherwise specified.

Key actuators: measurement given without key / measurement with key ie: .55/.96.

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

22 mm Oil Tight Operator

Dim.	Std	Mshrm 40 mm	Lever
A	.88	.88	.88
B	1.77	1.77	1.77
C	1.18	1.57	1.77

30 mm Oil Tight Operator

Dim.	Std	Mshrm 40 mm	Mshrm 70 mm	Lever
A	1.18	1.18	1.18	1.18
B	1.77	1.97	2.76	1.77
C	1.57	1.57	2.76	1.97



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

Features

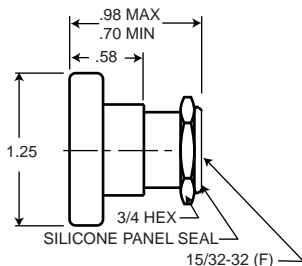
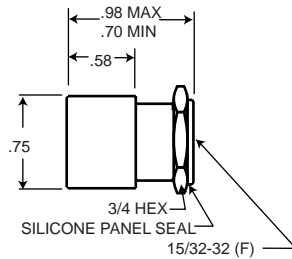
Accessories to customize and enhance our standard product line are sold separately

- **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

Armored Push Button Operator



Designed for use on Pneumadyne push button valves (15/32-32 Thd) and available in two button styles. Manufactured from stainless steel with a silicone boot providing corrosion protection and a tight seal. *(Not for use on "4" Series valves)*

Product Information

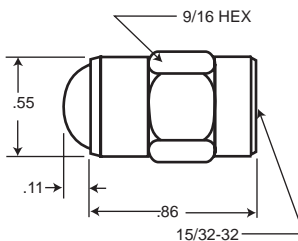
Part Number	Actuator Diameter	Max. Stroke	Mounting
AB-1	.75"	.42"	15/32-32 (F)
AB-2	1.25"	.42"	15/32-32 (F)

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

Materials

Stainless Steel, Silicone

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

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.

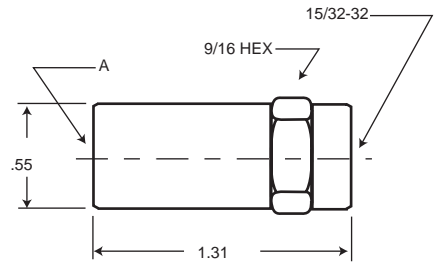
Product Information

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



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

4 Series: 11/64" thick spacer required to ensure proper actuation-contact factory.

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.

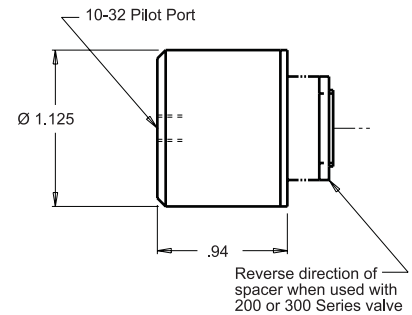
Product Information

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.

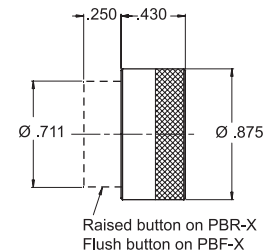
Product Information

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

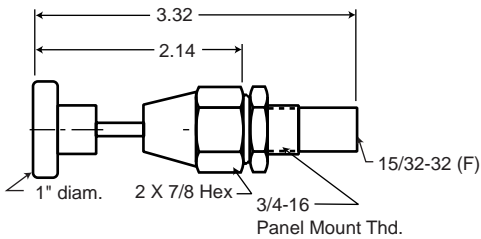
Aluminum/ Anodize, Aluminum/ Electroless Nickel, Brass



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	Max Stroke	Mounting Holes
HDO	.35	3/4"
HDO-L	.35	3/4"

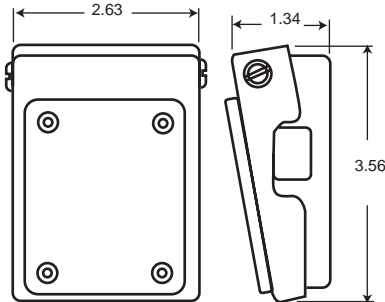
- Refer to [Force to Actuate chart](#) for actuation information.

Stroke ratio defined in glossary (pg 211)

Materials

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

Foot, Hand, Knee Operator



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

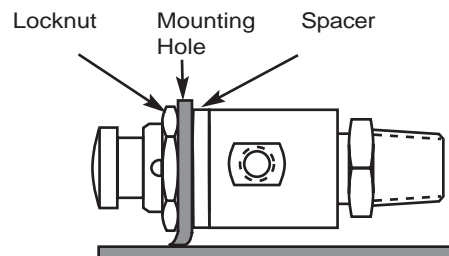
Part Number	Max. Stroke
FPA	Approximately .20"

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

Materials

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

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



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"

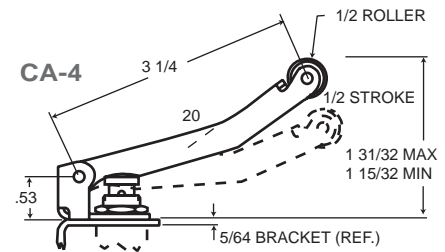
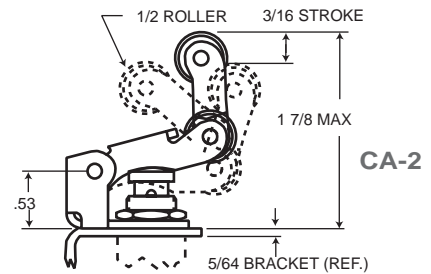
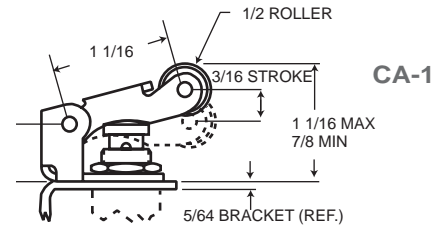
● Refer to [Force to Actuate chart](#) for actuation information.

Stroke ratio defined in glossary (pg 211)

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

Materials

Steel/ Electro 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

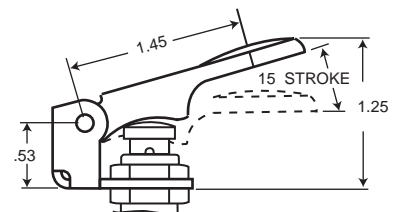
Part Number	Stroke Ratio	Mounting Holes
TA-1	2.7	31/64"

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

Stroke ratio defined in glossary (pg 211)

Materials

Steel/ Electro 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.

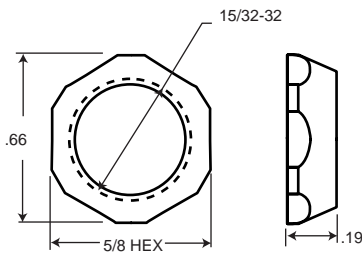
Force to Actuate

Valve Accessory Part Number

Pneumadyne Product Line Force to Actuate	AB-1 AB-2 Lbs	AP-1 AP-2 psi	APLP-2 psi	BA-1 Lbs	CA-1 Lbs	CA-2 Lbs	CA-4 Lbs	FPA Lbs	HDO Lbs	PBF-X PBR-X Lbs	TA-1 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	25	3.6	3.00					6.00	3.00	
125 psi	3.00	25	3.6	3.00					6.00	3.00	
"45" Series											
50 psi	5.00	42	6.1	5.00	2.50	2.00	1.00	3-6	8.00	5.00	2.00
125 psi	8.00	66	9.6	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.

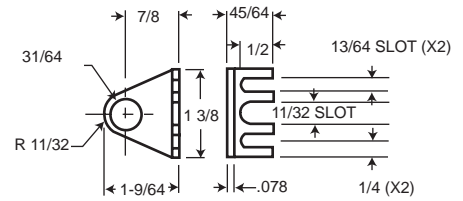
Product Information

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

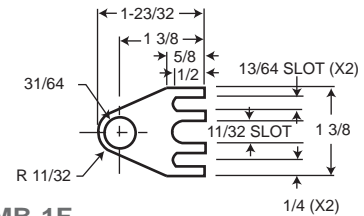
Materials

Steel/ Electro Nickel

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



MB-1
90° angle mounting bracket



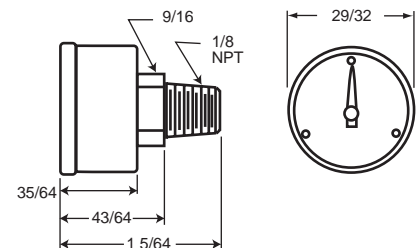
MB-1F
Flat mounting bracket

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](#)

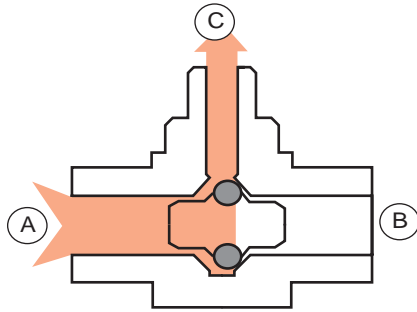
Materials

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

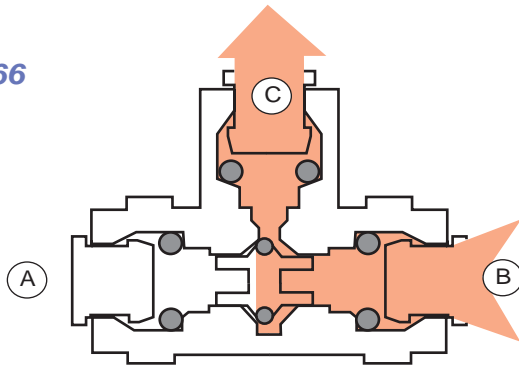
SV11- Aluminum/ Anodize, Buna-N, Acetal, Brass/ Electroless Nickel

Shuttle Valve Cut-away

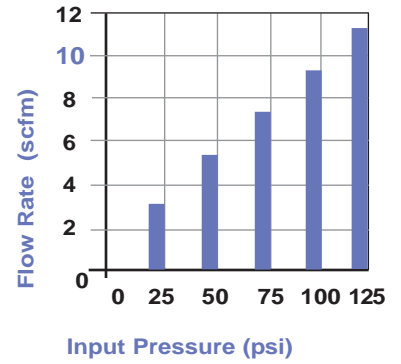
SSV-10A-MFF



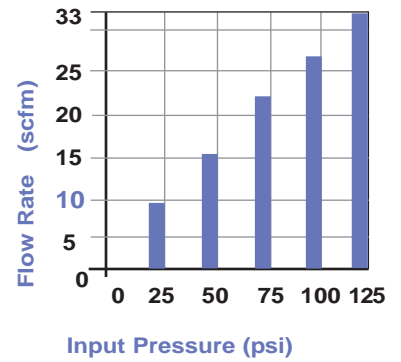
SV11-1/4PI-66



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%



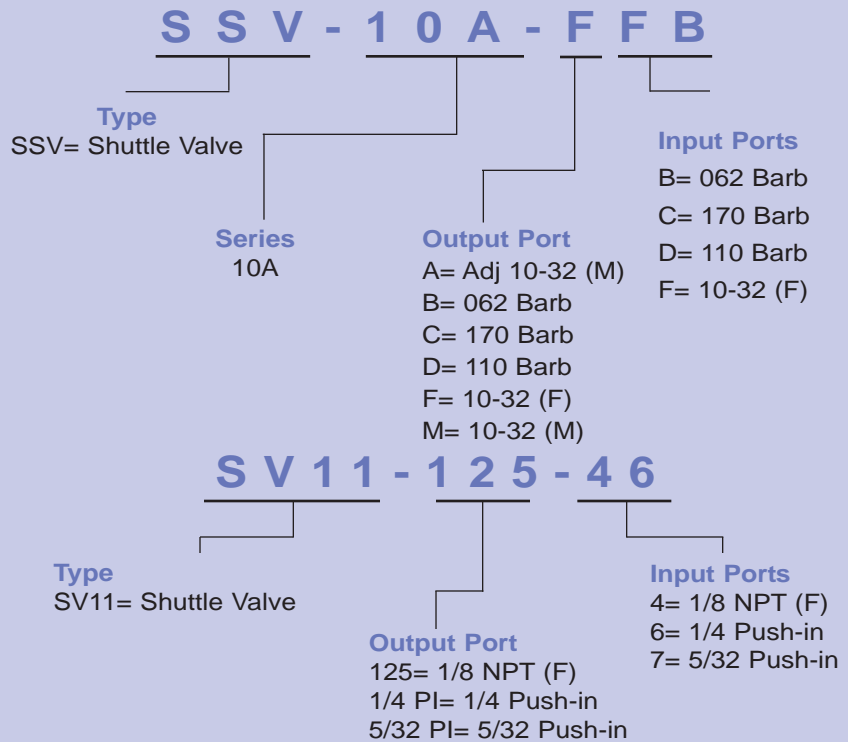
Product Information

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-ADF	10-32 Adj x 110 / 10-32 F
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

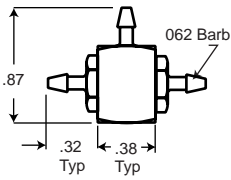
SV11-xxx-xx

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

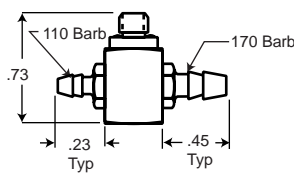
SV11-xxx-xx

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

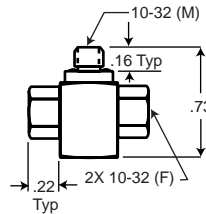
SSV-10A-xxx



SSV-10A-BBB



SSV-10A-MCD



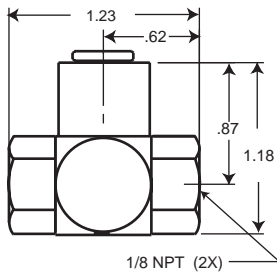
SSV-10A-MFF

Ordering Information

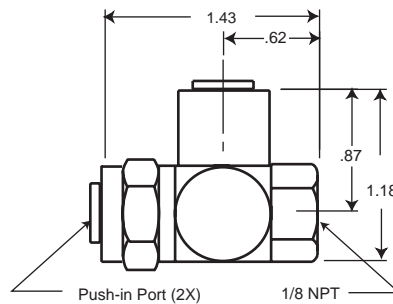
- To order standard product refer to Product Information listing.
- Optional seals available- contact factory.



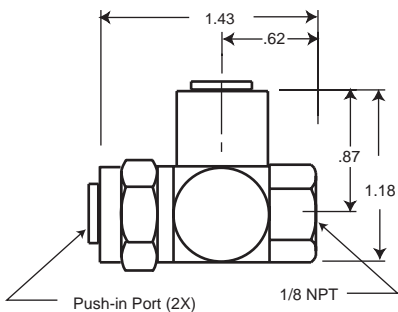
SV11-xxx-xx



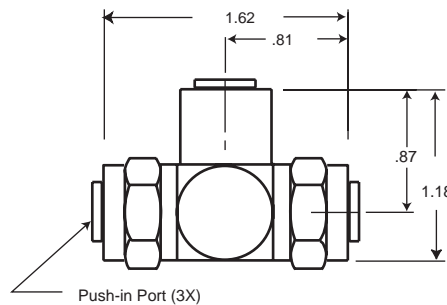
SV11-5/32 PI-44



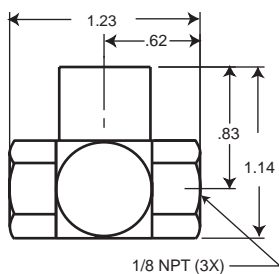
SV11-5/32 PI-47



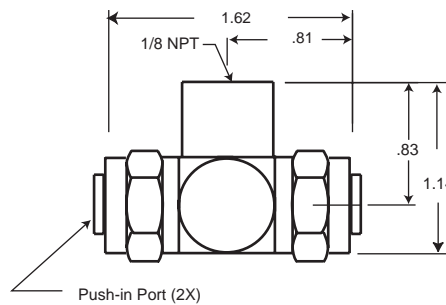
SV11-1/4 PI-46



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	1.0	.13
10-32 Thd/ 10-32 Thd (max. flow option)	.09	4.5	9.5	1.0	.03
1/8 NPT (F)/ 1/8 NPT (F)	.41	14.3	31.5	1.0	.01
1/8 NPT / 1/4 PI	.32	9.7	24.5	1.0	.012
1/4 PI / 1/4 PI	.26	9.0	19.5	1.0	.014

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 Cut-away

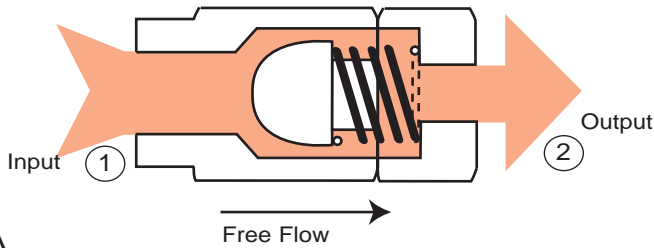


figure A

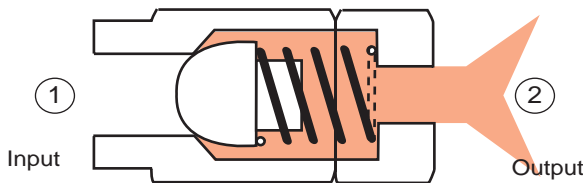


figure B

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.

Ordering Information

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

Product Information

Part Number	Input	Output
C050101	062 Barb	062 Barb
C050102	110 Barb	110 Barb
C050104	170 Barb	170 Barb
C050201	10-32 (M)	062 Barb
C050202	10-32 (M)	110 Barb
C050204	10-32 (M)	170 Barb
C050205	10-32 (M)	10-32 (M)
C050206	062 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)
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

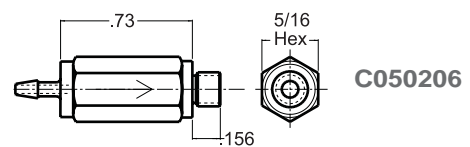
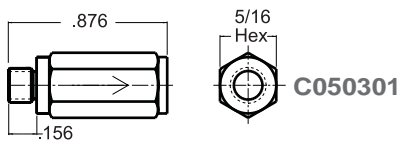
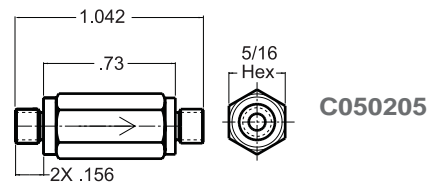
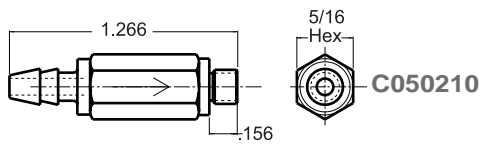
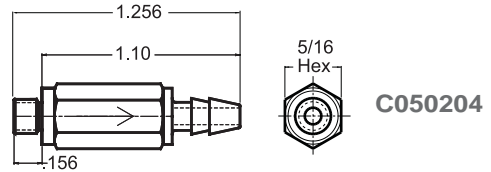
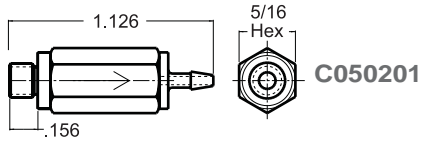
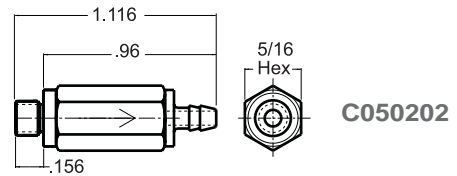
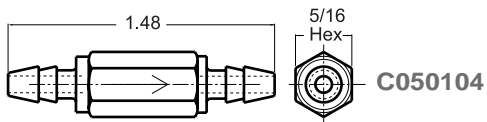
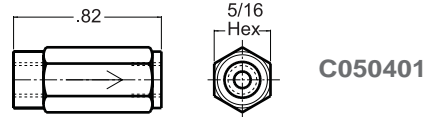
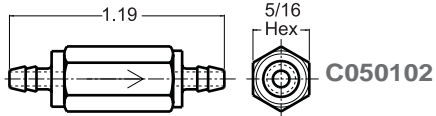
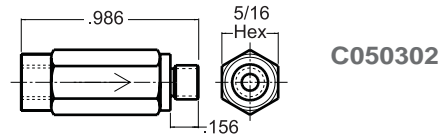
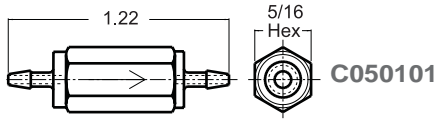
*-SS used to indicate stainless steel



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

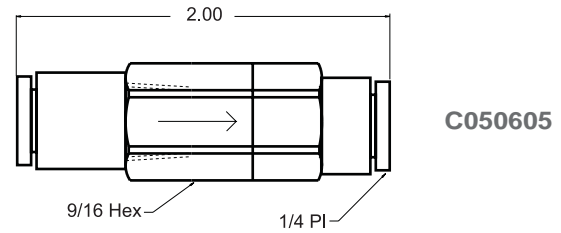
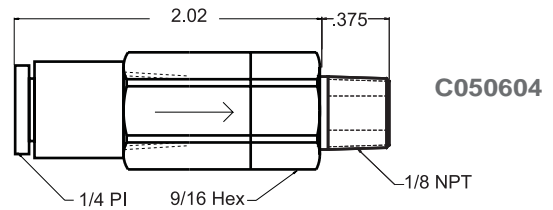
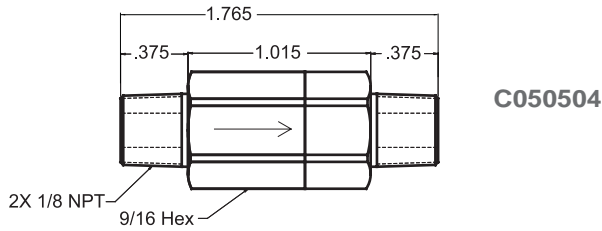
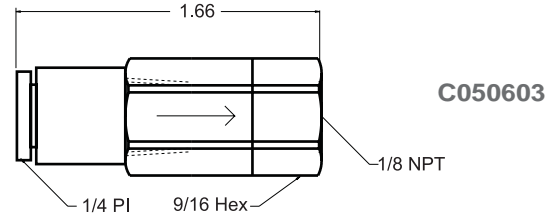
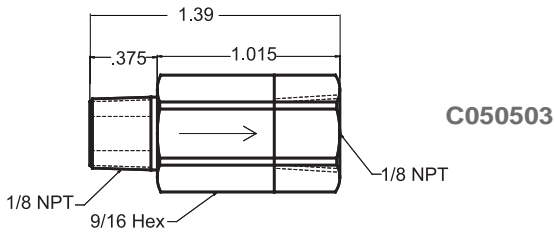
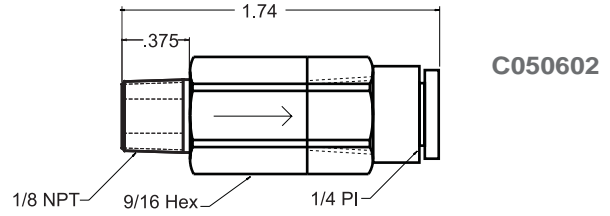
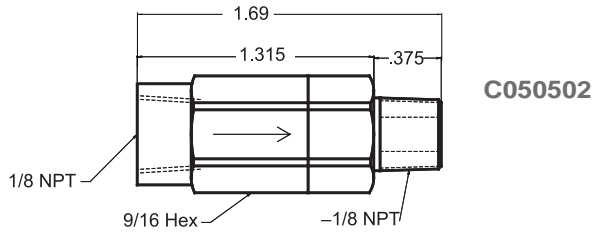
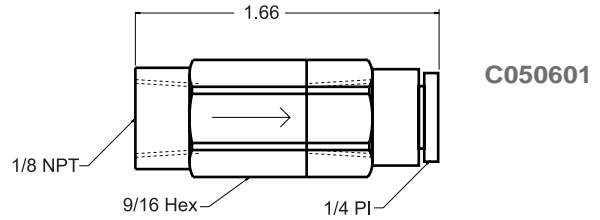
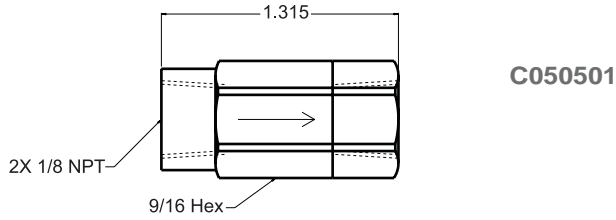
Check Valves

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

- 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" & "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	Max. Flow		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	Max. Flow		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	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

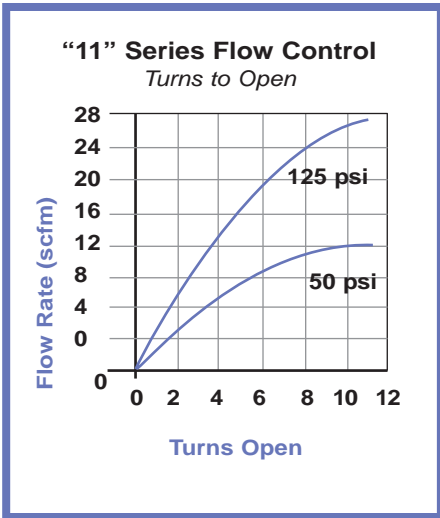
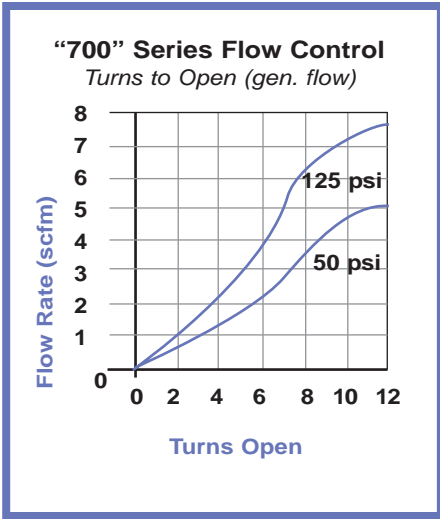
Port Options

	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

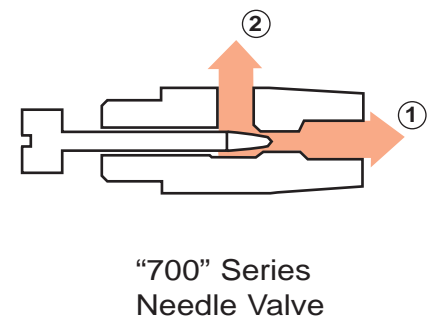
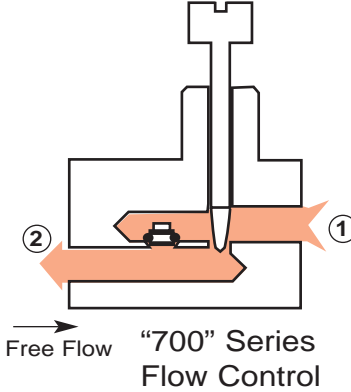
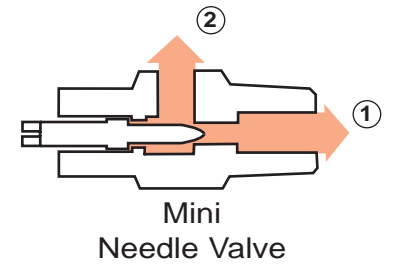
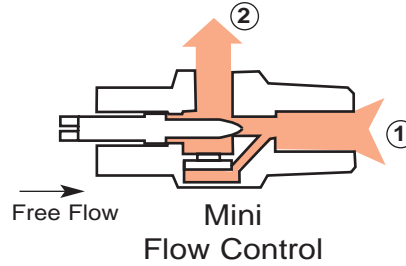
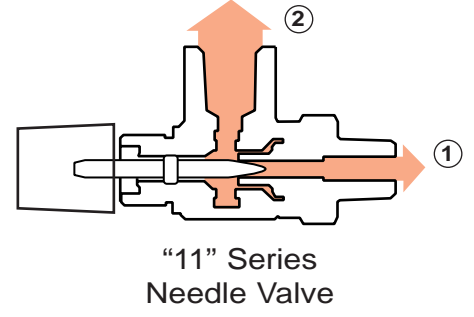
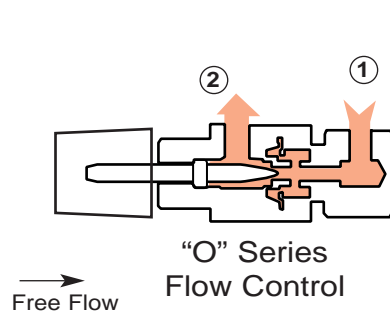
*170 Barb recommended for use with .170 ID PUR or .170 ID PE

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

Flow Control / Needle Valve Cut-away



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 NPT (F)
PNV11-46	1/8 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		1/8 NPT (F)
PNV11-76	5/32 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)

Mini

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

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

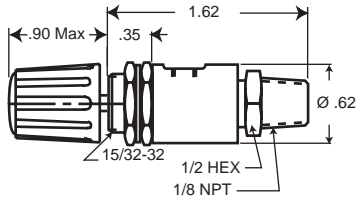
Ordering Information

- 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.

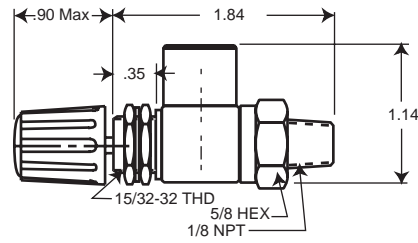


“O” Series

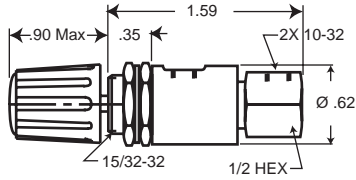
“11” Series



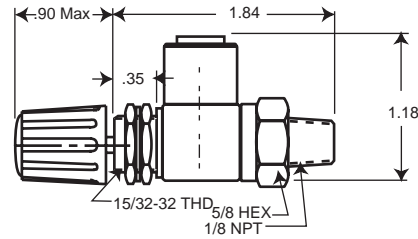
“-1” Input



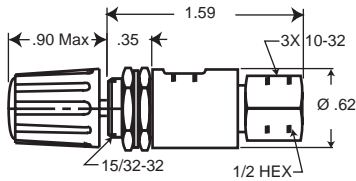
“-14” Porting



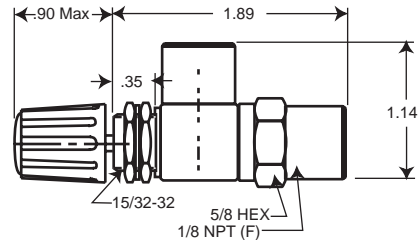
“-2” Input



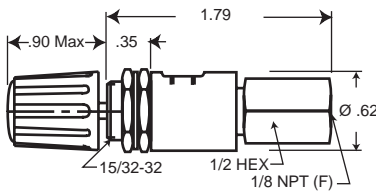
**“-16” Porting
“-17” Porting**



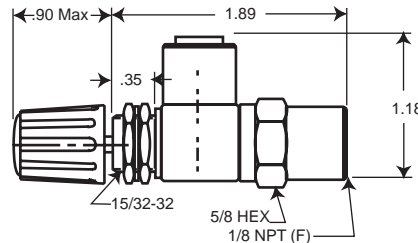
“-3” Input



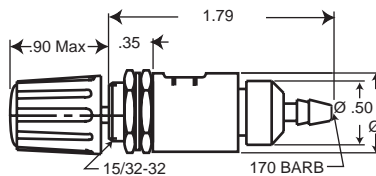
“-44” Porting



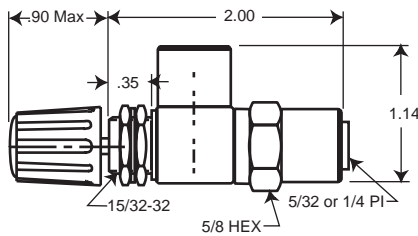
“-4” Input



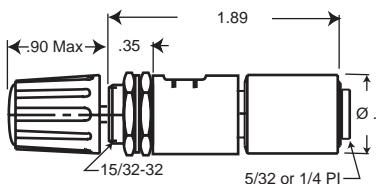
**“-46” Porting
“-47” Porting**



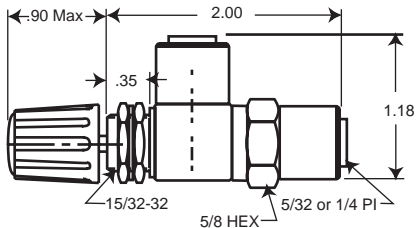
“-5” Input



**“-64” Porting
“-74” Porting**



**“-6” Input
“-7” Input**

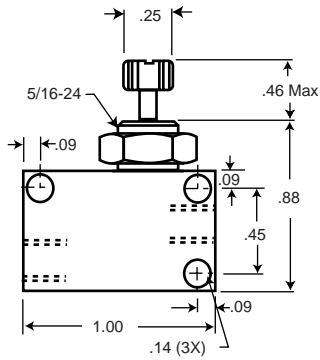


**“-66” Porting
“-67” Porting
“-76” Porting
“-77” Porting**

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

“700” Series

Flow Control



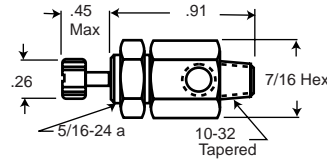
Product Number
C070501 low
C070503 general

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

“700” Series

Needle Valves

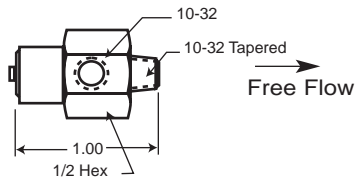
Product Number
C070301 low
C070303 general



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

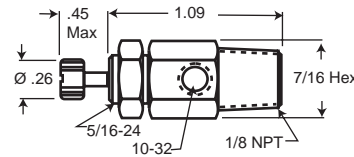
Mini

Flow Control



Product Number
FC-32

Product Number
C070601 low
C070603 general

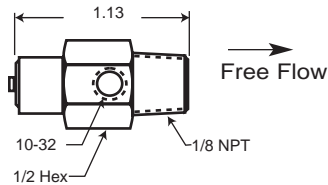
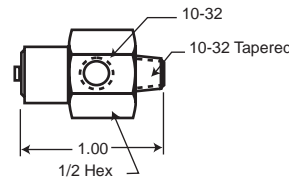


Available with instrument quality panel knob, add **-PK** suffix to the part number (not shown)

Mini

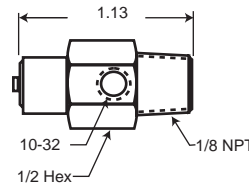
Needle Valves

Product Number
NV-32



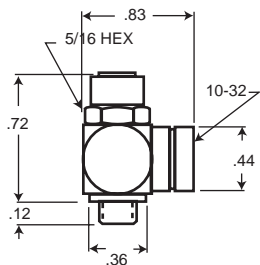
Product Number
FC-52

Product Number
NV-52



Banjo

Flow Control

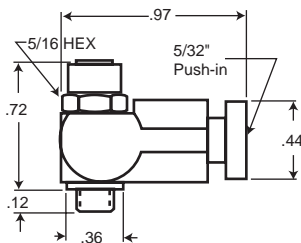
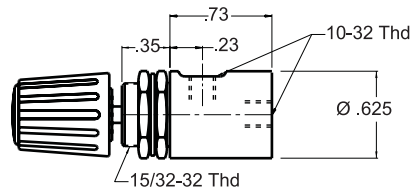


Product Number
BFC-32
BFCR-32

“O” Series

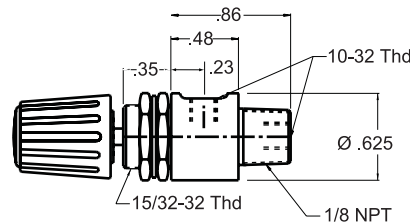
Needle Valves

Product Number
PNV0-0



Product Number
BFC-32P
BFCR-32P

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.

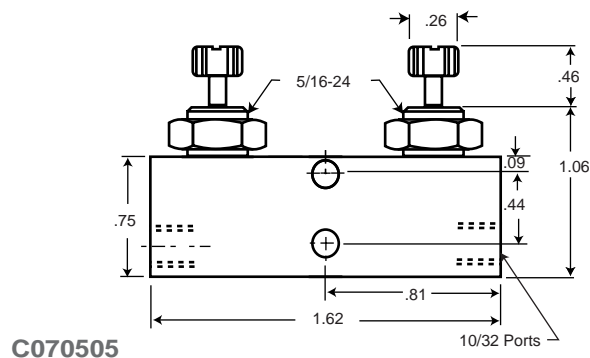
Performance Data

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

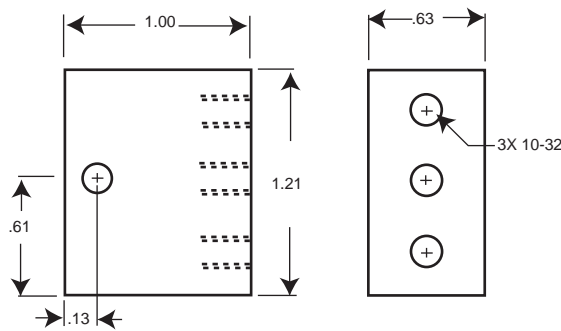
Temperature Range			Operating Pressure			
-20°F to 160°F			Range: 0-125 psi			
Part Number	Porting Information	C _v	Flow Rate (scfm)		Fill Time sec/ in ³ 0-90 psi	Exhaust Time sec/ in ³ 100-10 psi
			50 psi	125 psi		
PAV-10	10-32 (F)	.13	4.8	10.6	.03	.03

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

The “AND” Valve

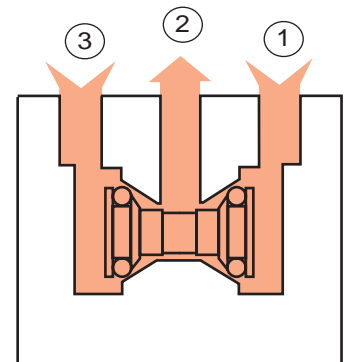
“AND” valves are used in circuit control applications that require a combination of inputs to produce a single output. This compact (overall 1.21”) and durable valve has been Pneumadyne tested to assure high performance and dependability.

“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).



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. Pressure Controllers are available as independent valves, cylinder port mount or junction block mount to meet all circuit design applications.

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

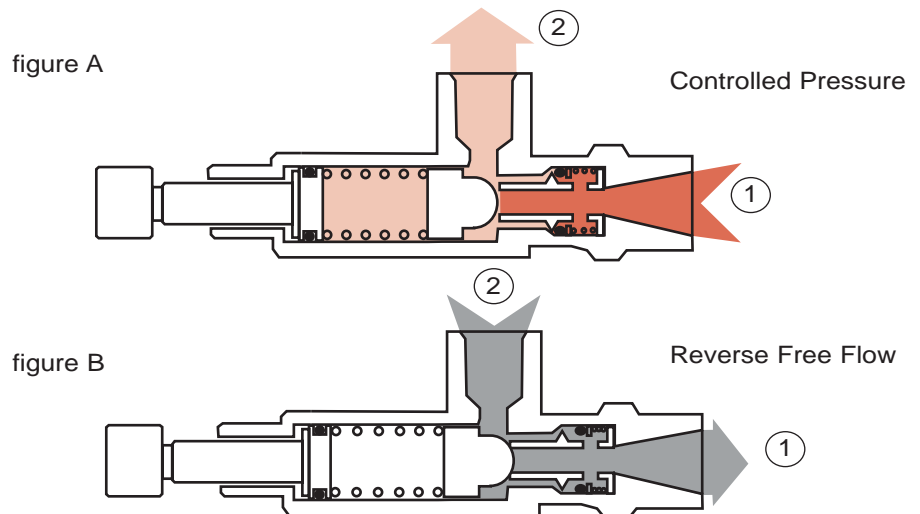
Temperature Range	Maximum Input Pressure		C _v		Fill Time 100 in ³ sec.
	Standard	150 psi	1-2	2-1	
-20°F to 160°F	Standard	150 psi	.15	.26	3.47
	Low	80 psi			

C_v per ANSI / (NFPA) T3.21.3

Materials

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

Pressure Controller Cut-away



Product Information

Pressure Control Valve

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

Locking nut, mounting nuts and lock-washer provided

Warnings

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

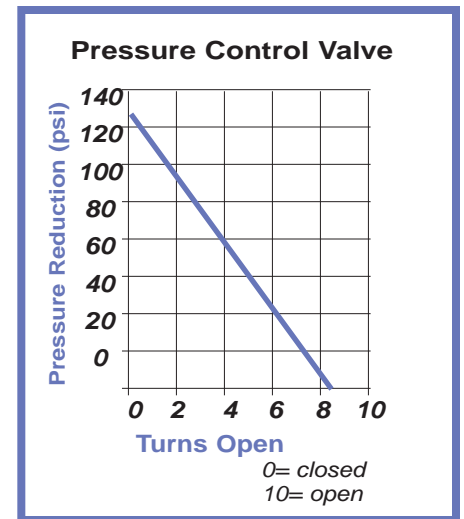
Ordering Information

- To order Pressure Control Valves and Junction Blocks 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.

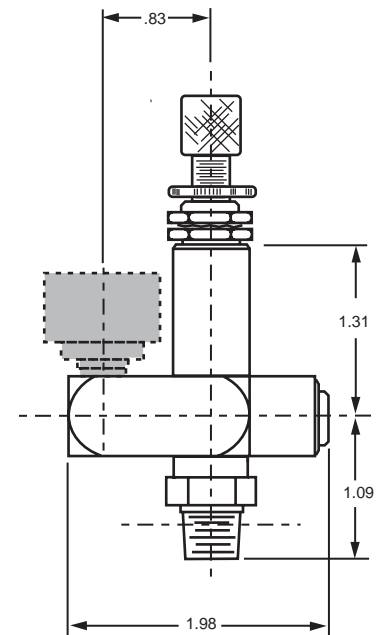
Junction Block

Part Number	Description
PPCJ-2	2 station, 1/8, 2" OAL
PPCJ-2-156	2 station, 5/32 PI, 2" OAL
PPCJ-2-250	2 station, 1/4 PI, 2" OAL
PPCJ-3	3 station, 1/8, 3" OAL
PPCJ-3-156	3 station, 5/32 PI, 3" OAL
PPCJ-3-250	3 station, 1/4 PI, 3" OAL
PPCJ-4	4 station, 1/8, 4" OAL
PPCJ-4-156	4 station, 5/32 PI, 4" OAL
PPCJ-4-250	4 station, 1/4 PI, 4" OAL
PPCJ-5	5 station, 1/8, 5" OAL
PPCJ-5-156	5 station, 5/32 PI, 5" OAL
PPCJ-5-250	5 station, 1/4 PI, 5" OAL
PPCJ-6	6 station, 1/8, 6" OAL
PPCJ-6-156	6 station, 5/32 PI, 6" OAL
PPCJ-6-250	6 station, 1/4 P, 6" OAL

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



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

- Mounting versatility
- Knurled knob or Instrument quality knob
- Push-to-connect fittings available
- Series "0" input port rotates 360°
- Series "11" output port rotates 360°
- Direct gauge mount to output (System 11)

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 onsite 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	C _v Full Open	Flow Rate (scfm)	
			50 psi	125 psi
-20°F to 160°F	30 psi to 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.

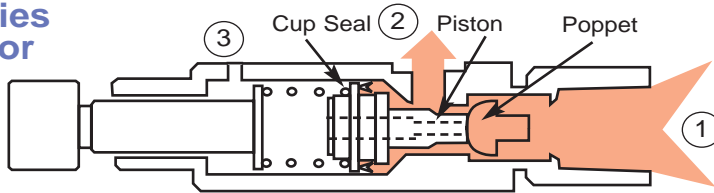
Warning: for safety reasons non-relieving regulators are recommended for use with liquids only and with adequate means of downstream relief.

Regulator Cut-away

Extended Port

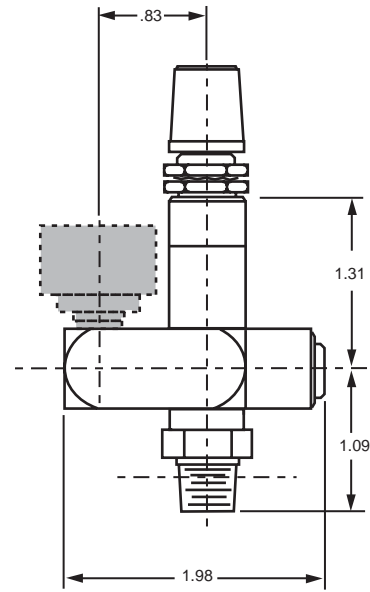
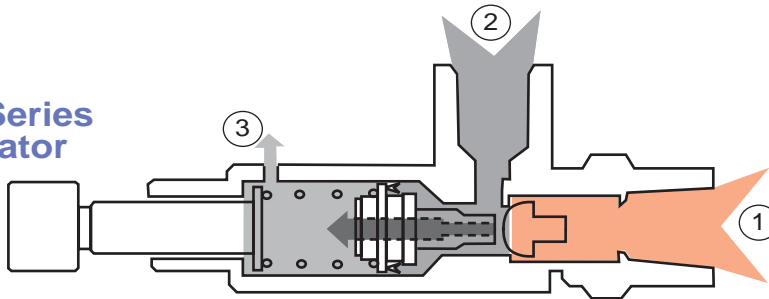
“O” Series Regulator

figure A



“11” Series Regulator

figure B *Relieving Mode*



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.*

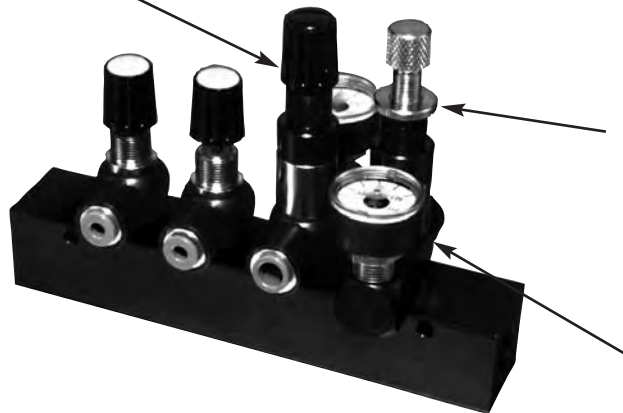


figure C

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 11 - R K - 1 4

Model

R= Regulator

Series

O= "O" Series
11= "11" Series

Function

R= Relieving
N= Non-relieving

Actuator Style

K= Knurled Knob
P= Panel Knob

"O" Series Input

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

* "O" Series Output

10-32 (F) ONLY
no designation

"11" Series Output

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

"11" Series Input

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

Example:

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

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

"11" Series Regulators Relieving

Part Number	Input x Output	
Knurled Knob	R11-RK-14	1/8 1/8 NPT (F)
	R11-RK-16	NPT 1/4 Push-in
	R11-RK-17	5-32 Push-in
	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
	R11-RK-64	1/8 NPT (F)
Panel Knob	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
	R11-RP-14	1/8 1/8 NPT (F)
	R11-RP-16	NPT 1/4 Push-in
Panel Knob	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

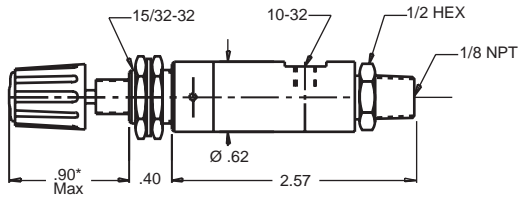
"11" Series Regulators Non-Relieving

Part Number	Input x Output	
Knurled Knob	R11-NK-14	1/8 1/8 NPT (F)
	R11-NK-16	NPT 1/4 Push-in
	R11-NK-17	5-32 Push-in
	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
	R11-NK-64	1/8 NPT (F)
Panel Knob	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
	R11-NP-14	1/8 1/8 NPT (F)
	R11-NP-16	NPT 1/4 Push-in
Panel Knob	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	Push-in 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

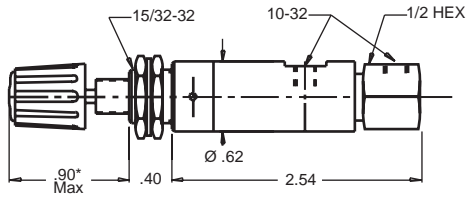
Custom Products: Contact factory for applications requiring 1/8 NPT male or 1/4 NPT male output port

“O” Series

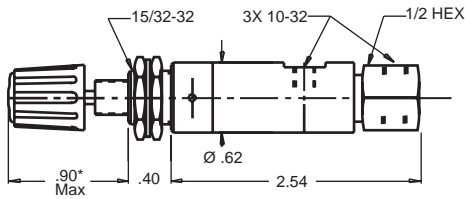
Shown with Panel Knob



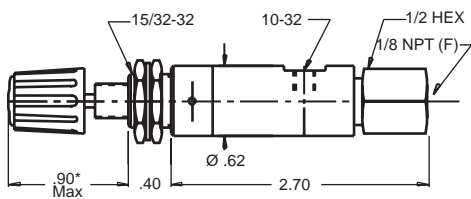
“-1” Input



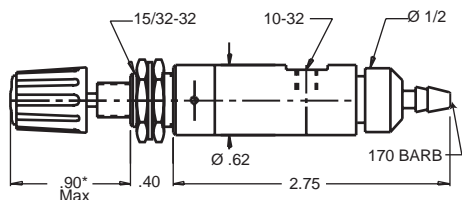
“-2” Input



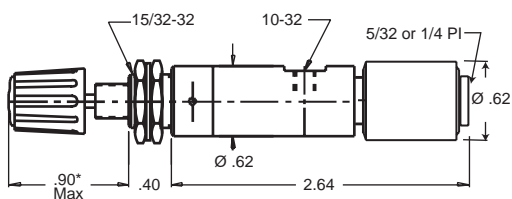
“-3” Input



“-4” Input



“-5” Input

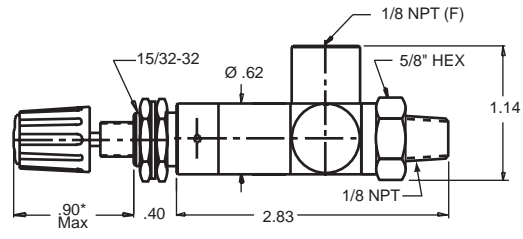


“-6” Input
“-7” Input

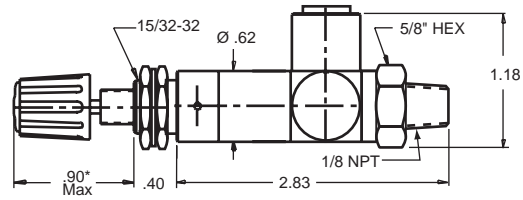
*.74 Max for knurled knob- all regulators

“11” Series

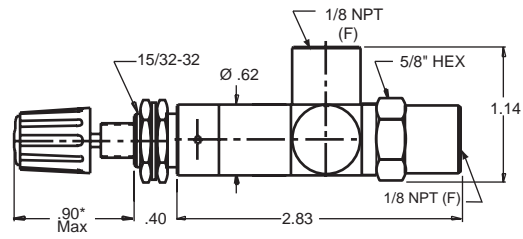
Shown with Panel Knob



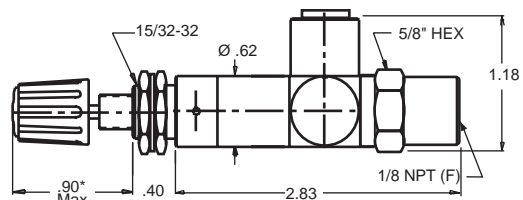
“-14” Porting



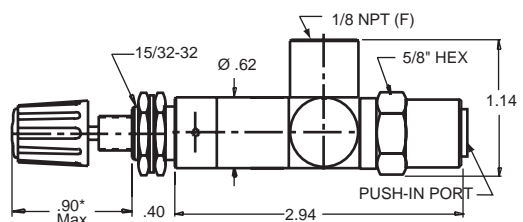
“-16” Porting
“-17” Porting



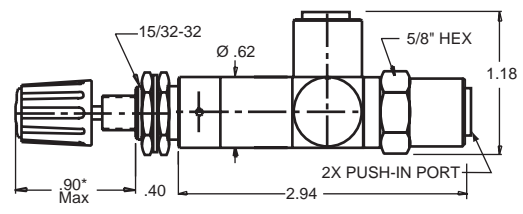
“-44” Porting



“-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 Cut-away

figure A
Fill

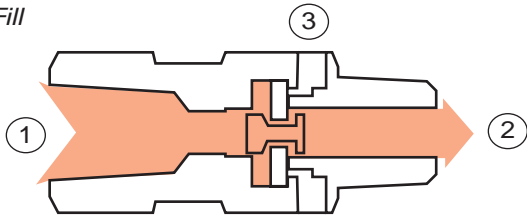


figure B
Exhaust

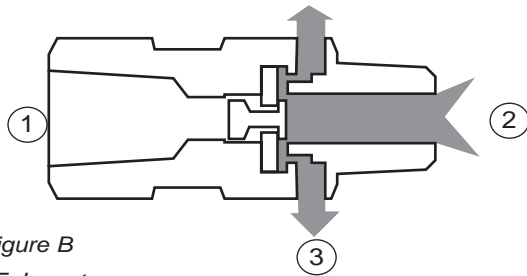


figure C
Fill

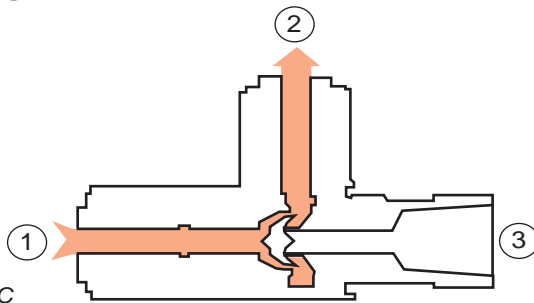
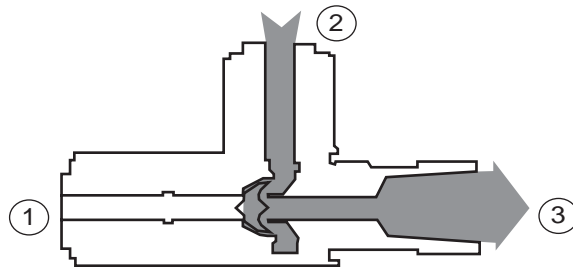
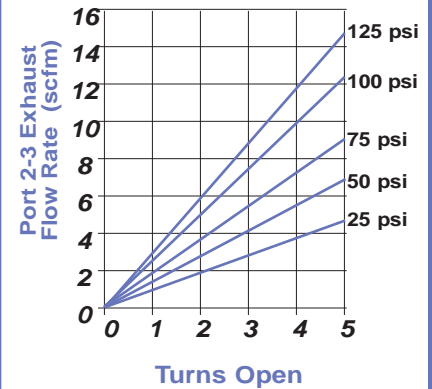


figure D
Exhaust



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		<ul style="list-style-type: none"> ● 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		<ul style="list-style-type: none"> ● 10-32 (M) ● 1/8 NPT ● 1/8 NPT (F) ● 1/4 Push-in ● 5/32 Push-in ● 1/4 NPT
	Port 3 Exhaust		<ul style="list-style-type: none"> ● 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 - 1 8

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 (F)
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



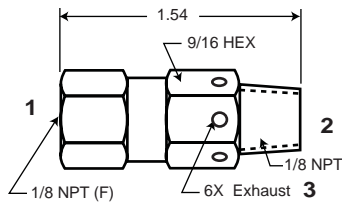
"11" Series Quick Exhaust shown with accessories

Additional Accessories

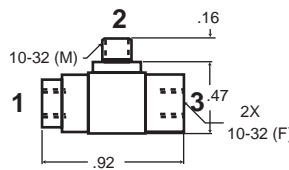
Part Number	Description
QE-MS	1/8 NPT Sintered Bronze Muffler
QE-MI	1/8 NPT Industrial Muffler
QE-S	1/4-28 UNF Speed Control Needle

Quick Exhaust

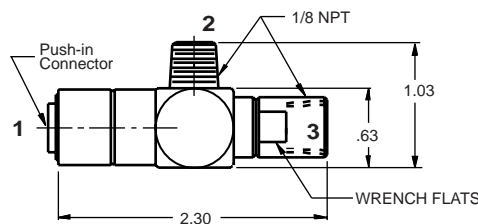
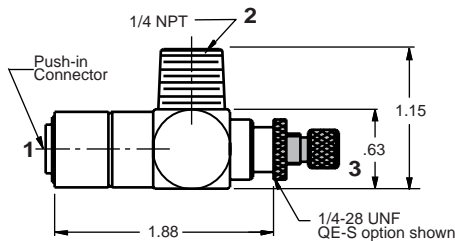
C570501 In-line



QE10-FMF Right Angle



Right Angle



Port Designation

1	Input
2	Cylinder Port
3	Exhaust

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

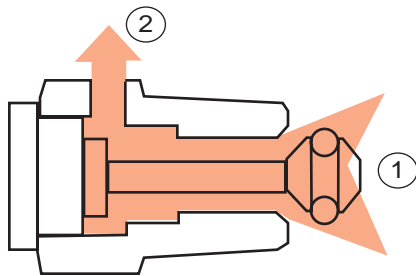


Bleed Valves

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.



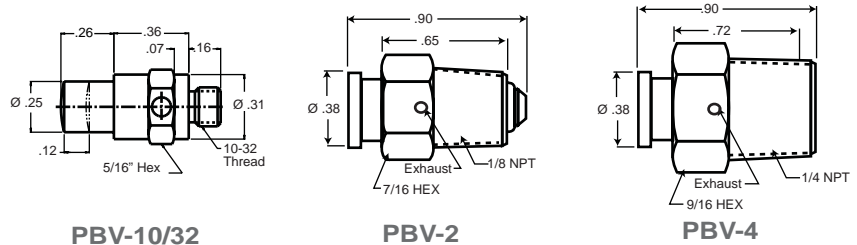
All dimensions and specifications are subject to change.

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 (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	40 psi	100 psi
C520102		Contacts Closed		

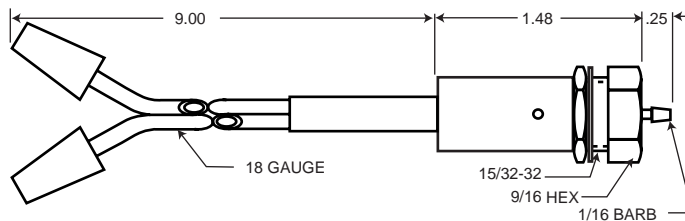
* Other pressure ranges available- contact factory

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

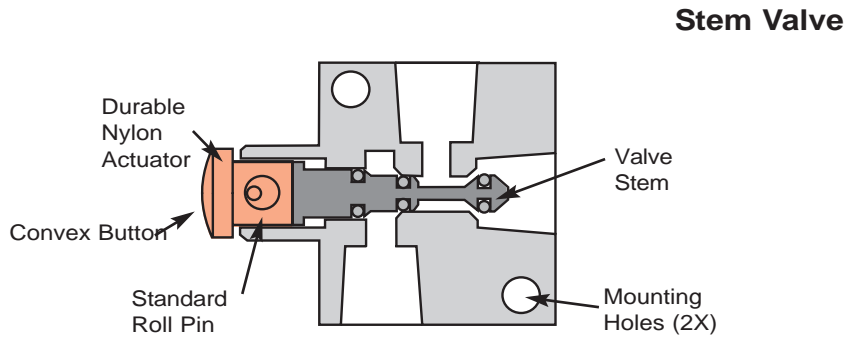
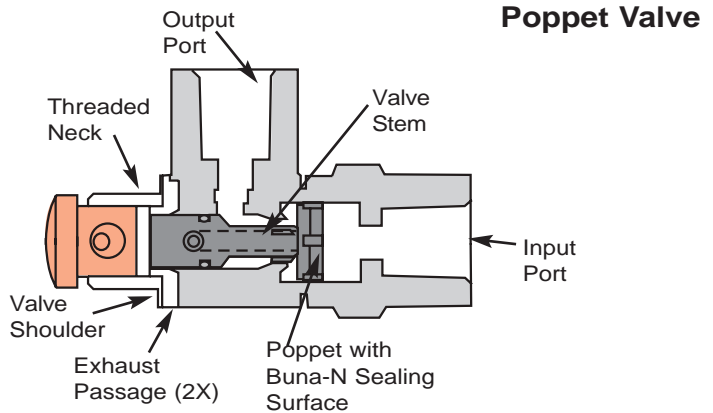
Materials

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

	"0" Series	"3" Series	"11" Series	"10" Series	"20" 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	1/8 NPT	
2-WAY	●		●	●	●	●	●	●	●	●	●	●	●	●	●			
3-WAY	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
4-WAY																●	●	●
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

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.

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	

- 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.

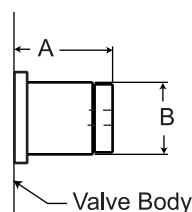
Mounting Hole Dimension

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"
<i>Button</i>	17/64"	Air Operated Electric Switch	31/64"
<i>Toggle</i>	21/64"	Oil Tight Actuators	
3 Position Toggle Valve	3/4"	22mm	7/8"
6 Position Selector Valve	41/64"	30mm	3/16"
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

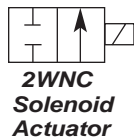
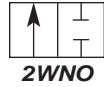
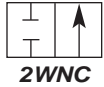


- For use with 95A durometer polyurethane tubing
- See Pneumadyne Fitting section for ordering information**

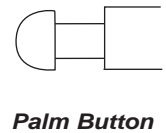
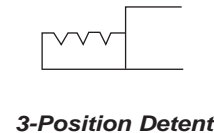
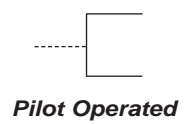
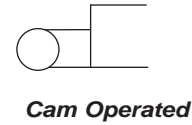
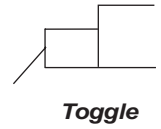
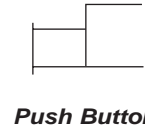
Additional Information and Specifications

Fluid Power Graphic Symbols

Directional Control



Actuators

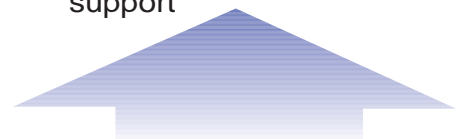


All dimensions and specifications are subject to change without notice

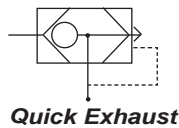
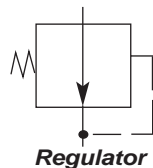
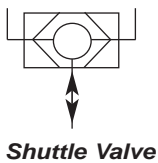
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information and useful
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- Download 3D CAD drawings
- View detailed product information
- See 'What's New'
- Review industry related solutions
- Request technical support

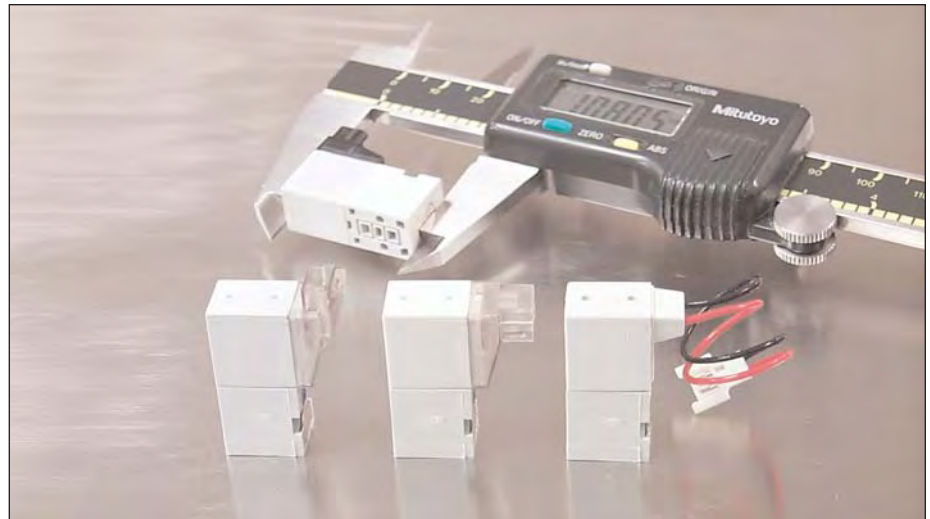


Circuit Control



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

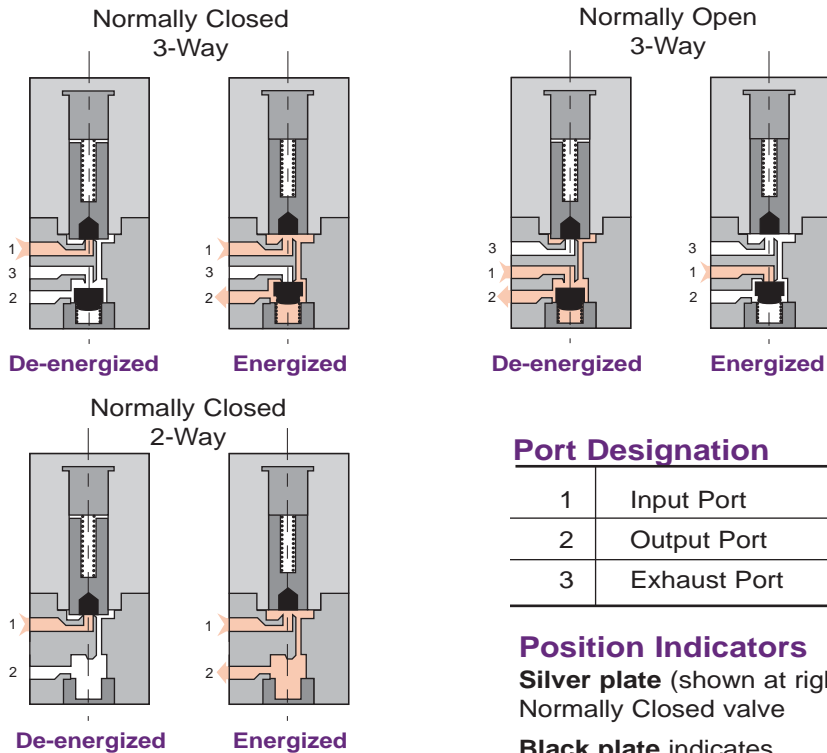
Electrical Performance Data 10 mm

Power (Watt)	Voltages	Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
0.5	24 DC LW	-5 % to 10%	8 ms	10 ms	F 310°F (155°C)
1.3	12 DC, 24 DC				

Materials

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

10 mm Solenoid Valve Cut-away 2-Way & 3-Way



Port Designation

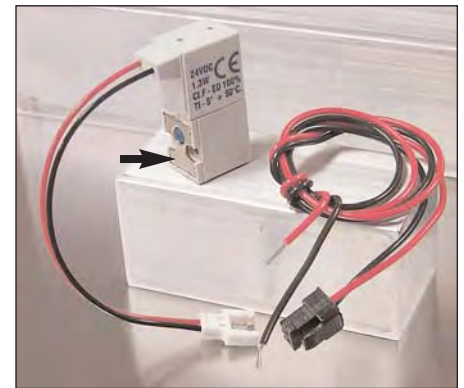
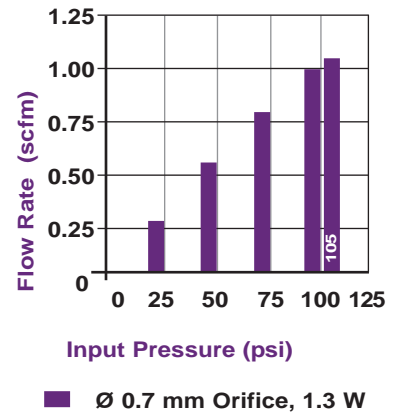
1	Input Port
2	Output Port
3	Exhaust Port

Position Indicators

Silver plate (shown at right)
Normally Closed valve

Black plate indicates
Normally Open valve

10 mm Solenoid Flow Chart



Standard 300 mm Flying Leads available on all voltages
Plug-in Cable lengths of 300 mm, 600 mm, and 1000 mm are available for fast connection to Line and 90° Connectors

Product Number Diagram 10 mm Solenoid Valve

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

Actuator
Solenoid 10 mm

Function
2= 2-Way
3= 3-Way

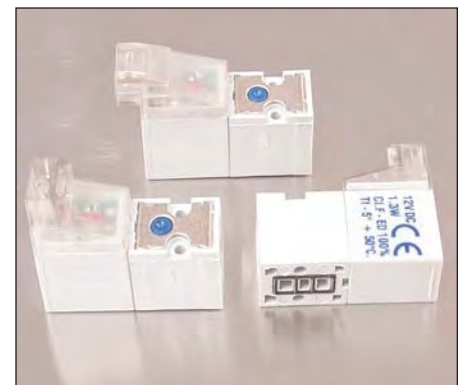
Position One
0= Normally Closed
1= Normally Open

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

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

Example:

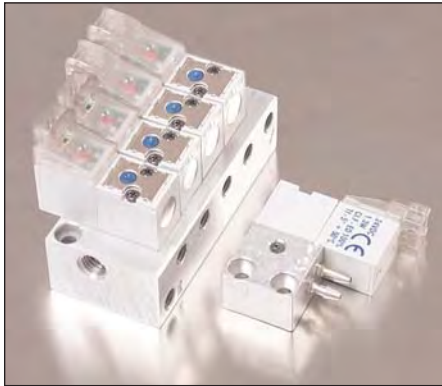
10 mm, 3-Way, Normally Closed, 12V DC, Flying Leads



90° Connectors and Line Connectors offer plumbing versatility



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



10 mm four station manifold with Line and 90° Connectors

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.
- Mounting screws provided.

Product Information 10 mm

2-Way Normally Closed

Part Number	Connection
12 DC/ 1.3 Watt/ Orifice .7mm	
S10MM-20-12-2	Flying Leads
S10MM-20-12-3	Line Connector
S10MM-20-12-4	90° Connector
24 DC/ 1.3 Watt/ Orifice .7mm	
S10MM-20-24-2	Flying Leads
S10MM-20-24-3	Line Connector
S10MM-20-24-4	90° Connector
24 LW/ .5 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

Part Number	Connection
12 DC/ 1.3 Watt/ Orifice .7mm	
S10MM-30-12-2	Flying Leads
S10MM-30-12-3	Line Connector
S10MM-30-12-4	90° Connector
24 DC/ 1.3 Watt/ Orifice .7mm	
S10MM-30-24-2	Flying Leads
S10MM-30-24-3	Line Connector
S10MM-30-24-4	90° Connector
24 LW/ .5 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

Part Number	Connection
12 DC/ 1.3 Watt/ Orifice .7mm	
S10MM-31-12-2	Flying Leads
S10MM-31-12-3	Line Connector
S10MM-31-12-4	90° Connector
24 DC/ 1.3 Watt/ Orifice .7mm	
S10MM-31-24-2	Flying Leads
S10MM-31-24-3	Line Connector
S10MM-31-24-4	90° Connector

Accessories

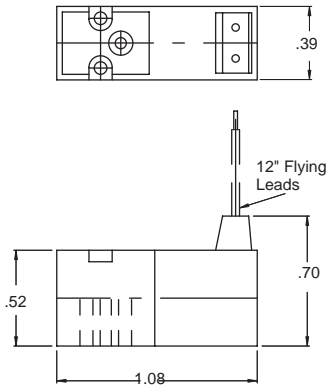
Part Number	
SMMC-300	Plug-in cable 300 mm
SMMC-600	Plug-in cable 600 mm
SMMC-1000	Plug-in cable 1000 mm
MSV10-CP	10 mm cover plate

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

10 mm Solenoid Valve

Flying Leads

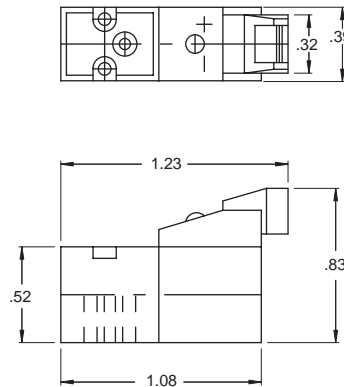
“-2” Connector



10 mm Solenoid Valve

Line Connector

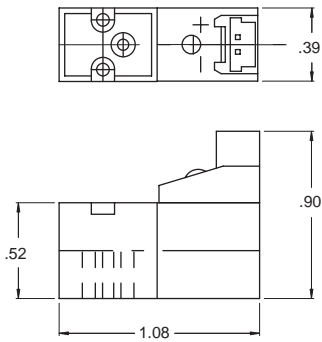
“-3” Connector



10 mm Solenoid Valve

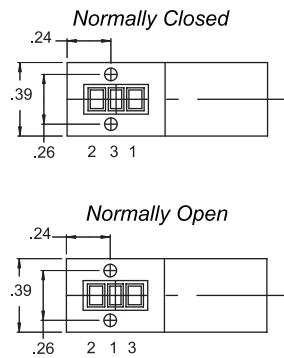
90° Connector

“-4” Connector

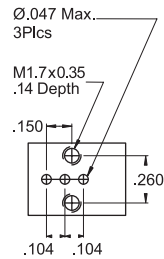


10 mm Solenoid Valve

Port Designation



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.

For use with Pneumadyne's 10 mm manifolds and bases. [See page 127 for product and ordering information.](#)

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

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 & 24 Volt DC and a low watt 24 Volt DC. 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	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		
0.8 mm NC	150 psi	.015	.60	1.75 @ 150 psi (10 bar)	.24	.23
1.1 mm NC	150 psi	.017	.72	1.90 @ 150 psi (10 bar)	.21	.20
1.6 mm NC	105 psi	.030	1.25	2.47 @ 105 psi (7 bar)	.12	.19
1.6 mm NO	75 psi	.036	1.50	2.20 @ 75 psi (5 bar)	.10	.17

Cv per ANSI / (NFPA) T3.21.3

Electrical Performance Data 15 mm

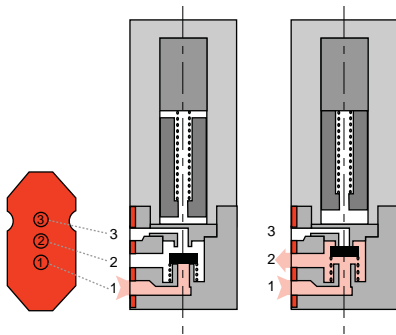
Orifice Size	Power (Watt)	Voltages	Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
0.8	1	12 DC, 24 DC, 24 DC LW	-5 % to 10%	10 ms	12 ms	F 311°F (155°C)
1.1 & 1.6 mm	2.3	12 DC, 24 DC				

Materials

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

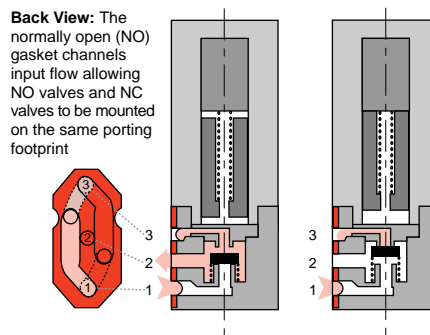
15 mm Solenoid Valve Cut-away

3-Way Normally Closed



De-energized Energized

3-Way Normally Open



De-energized Energized

Back View: The normally open (NO) gasket channels input flow allowing NO valves and NC valves to be mounted on the same porting footprint



15 mm connector options available with a variety of voltages and orifice diameters

Port Designation

1	Input Port
2	Output Port
3	Exhaust Port

Product Number Diagram 15 mm Solenoid Valve

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

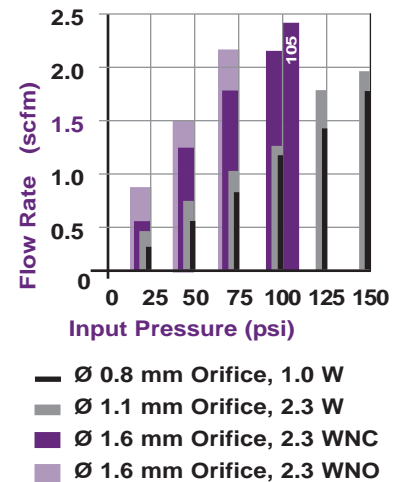
Connectors
0= Spade
2= Flying Leads
300 mm
3= Line Connector w/LED
4= 90° Connector w/LED

Voltage
12= 12V DC
24= 24V DC
24W= 24V DC
(0.8 mm orifice only)

Orifice
B= Ø 1.6 -1.6 mm
E= Ø 0.8 - 1.1 mm (NC only)
D= Ø 1.1 mm

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

15 mm Solenoid Flow Chart



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.
- Mounting screws provided.

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

<u>Part Number</u>	<u>Connection</u>
12 DC/ 2.3 Watt/ Orifice 1.6 mm	
S15MM-20-12-0B	Spade
S15MM-20-12-2B	Flying Leads
S15MM-20-12-3B	Line Connector
S15MM-20-12-4B	90° Connector
12 DC/ 2.3 Watt/ Orifice 1.1 mm	
S15MM-20-12-0D	Spade
S15MM-20-12-2D	Flying Leads
S15MM-20-12-3D	Line Connector
S15MM-20-12-4D	90° Connector
12 DC/ 1.0 Watt/ Orifice 0.8- 1.1 mm	
S15MM-20-12-0E	Spade
S15MM-20-12-2E	Flying Leads
S15MM-20-12-3E	Line Connector
S15MM-20-12-4E	90° Connector

24 DC/ 2.3 Watt/ Orifice 1.6 mm

S15MM-20-24-0B	Spade
S15MM-20-24-2B	Flying Leads
S15MM-20-24-3B	Line Connector
S15MM-20-24-4B	90° Connector

24 DC/ 2.3 Watt/ Orifice 1.1 mm

S15MM-20-24-0D	Spade
S15MM-20-24-2D	Flying Leads
S15MM-20-24-3D	Line Connector
S15MM-20-24-4D	90° Connector

24 DC/ 1.0 Watt/ Orifice 0.8- 1.1 mm

S15MM-20-24-0E	Spade
S15MM-20-24-2E	Flying Leads
S15MM-20-24-3E	Line Connector
S15MM-20-24-4E	90° Connector

24 LW/ 1.0 Watt/ Orifice 0.8- 1.1 mm

S15MM-20-24W-0E	Spade
S15MM-20-24W-2E	Flying Leads
S15MM-20-24W-3E	Line Connector
S15MM-20-24W-4E	90° Connector

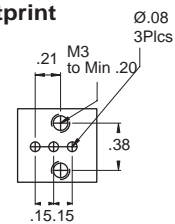
2-Way Normally Open

<u>Part Number</u>	<u>Connection</u>
12 DC/ 2.3 Watt/ Orifice 1.6 mm	
S15MM-21-12-0B	Spade
S15MM-21-12-2B	Flying Leads
S15MM-21-12-3B	Line Connector
S15MM-21-12-4B	90° Connector
24 DC/ 2.3 Watt/ Orifice 1.6 mm	
S15MM-21-24-0B	Spade
S15MM-21-24-2B	Flying Leads
S15MM-21-24-3B	Line Connector
S15MM-21-24-4B	90° Connector

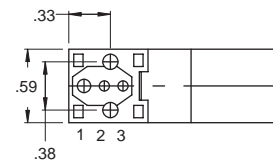
Accessories

<u>Part Number</u>	
SMMC-300	Plug-in cable 300 mm
SMMC-600	Plug-in cable 600 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)

15 mm Footprint



15 mm Port Designation



Product Information 15 mm

3-Way Normally Closed

Part Number	Connection
12 DC/ 2.3 Watt/ Orifice 1.6 mm	
S15MM-30-12-0B	Spade
S15MM-30-12-2B	Flying Leads
S15MM-30-12-3B	Line Connector
S15MM-30-12-4B	90° Connector
12 DC/ 2.3 Watt/ Orifice 1.1 mm	
S15MM-30-12-0D	Spade
S15MM-30-12-2D	Flying Leads
S15MM-30-12-3D	Line Connector
S15MM-30-12-4D	90° Connector
12 DC/ 1.0 Watt/ Orifice 0.8- 1.1 mm	
S15MM-30-12-0E	Spade
S15MM-30-12-2E	Flying Leads
S15MM-30-12-3E	Line Connector
S15MM-30-12-4E	90° Connector

24 DC/ 2.3 Watt/ Orifice 1.6 mm

S15MM-30-24-0B	Spade
S15MM-30-24-2B	Flying Leads
S15MM-30-24-3B	Line Connector
S15MM-30-24-4B	90° Connector

24 DC/ 2.3 Watt/ Orifice 1.1 mm

S15MM-30-24-0D	Spade
S15MM-30-24-2D	Flying Leads
S15MM-30-24-3D	Line Connector
S15MM-30-24-4D	90° Connector

24 DC/ 1.0 Watt/ Orifice 0.8- 1.1 mm

S15MM-30-24-0E	Spade
S15MM-30-24-2E	Flying Leads
S15MM-30-24-3E	Line Connector
S15MM-30-24-4E	90° Connector

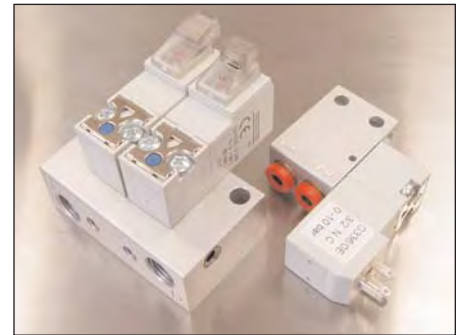
24 LW/ 1.0 Watt/ Orifice 0.8- 1.1 mm

S15MM-30-24W-0E	Spade
S15MM-30-24W-2E	Flying Leads
S15MM-30-24W-3E	Line Connector
S15MM-30-24W-4E	90° Connector

● 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.

3-Way Normally Open

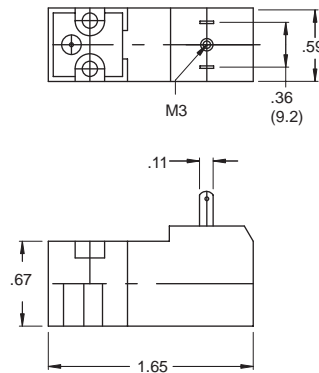
Part Number	Connection
12 DC/ 2.3 Watt/ Orifice 1.6 mm	
S15MM-31-12-0B	Spade
S15MM-31-12-2B	Flying Leads
S15MM-31-12-3B	Line Connector
S15MM-31-12-4B	90° Connector
24 DC/ 2.3 Watt/ Orifice 1.6 mm	
S15MM-31-24-0B	Spade
S15MM-31-24-2B	Flying Leads
S15MM-31-24-3B	Line Connector
S15MM-31-24-4B	90° Connector



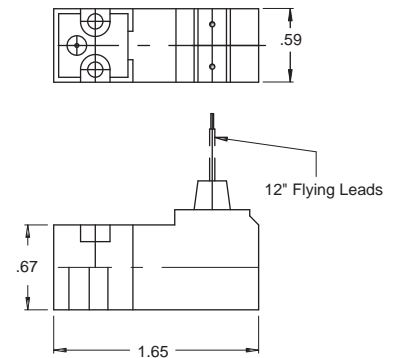
Pneumadyne's Solenoid Valves are recommended for use with our solenoid manifolds & single bases. For mounting convenience, single to 12-station manifolds are available with 10-32 (F) or M5 (F) threads. [See page 126 for product](#) and ordering information.

15 mm Solenoid Valve

**Spade
“-0” Connector**

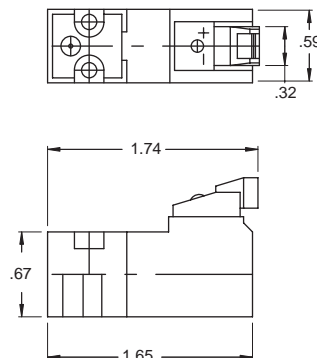


**Flying Leads
“-2” Connector**

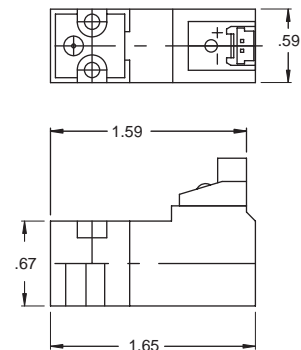


15 mm Solenoid Valve

**Line Connector
“-3” Connector**

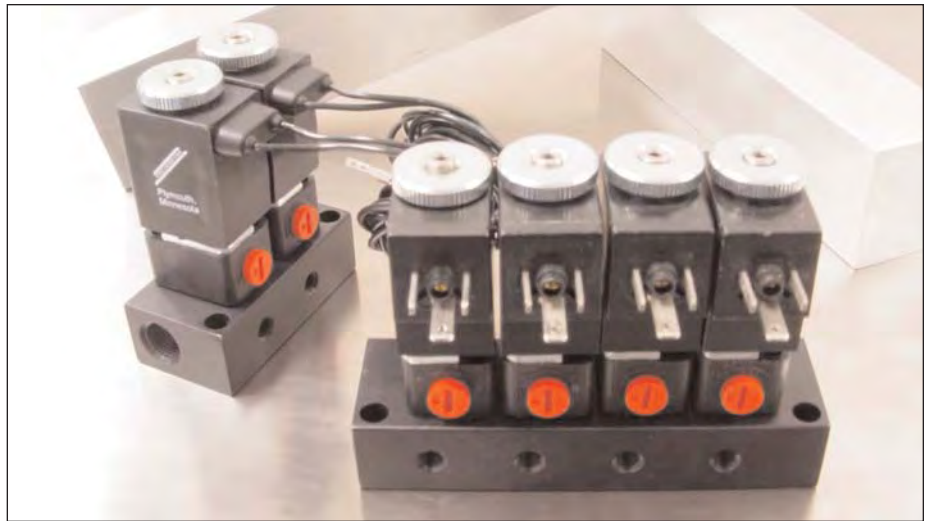


**90° Connector
“-4” Connector**



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 and consistent operation between valves. 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

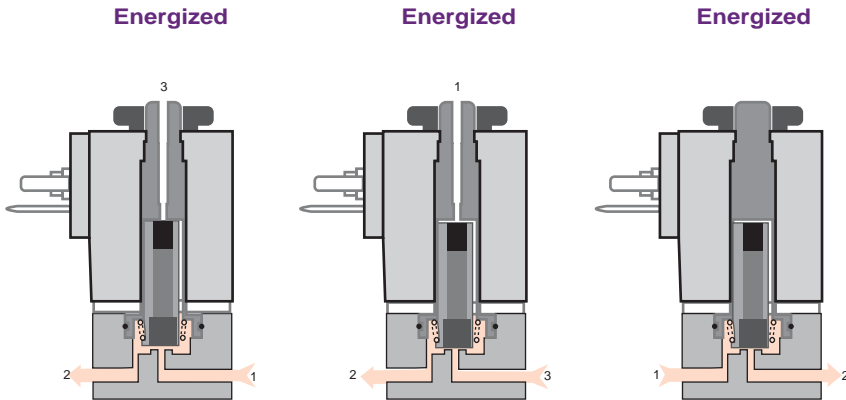
Electrical Performance Data System 6

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)

Materials

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

System 6 Solenoid Valve Cut-away 2-Way & 3-Way



3-Way
Normally
Closed

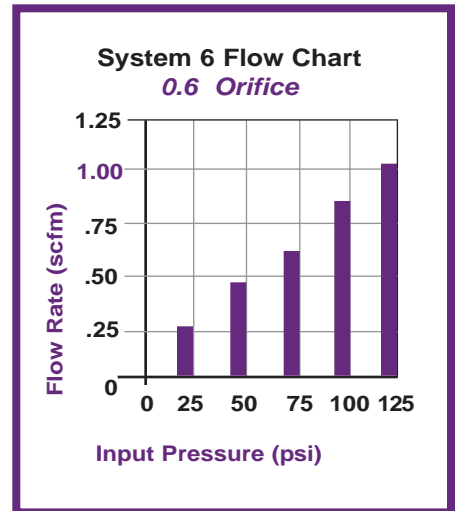
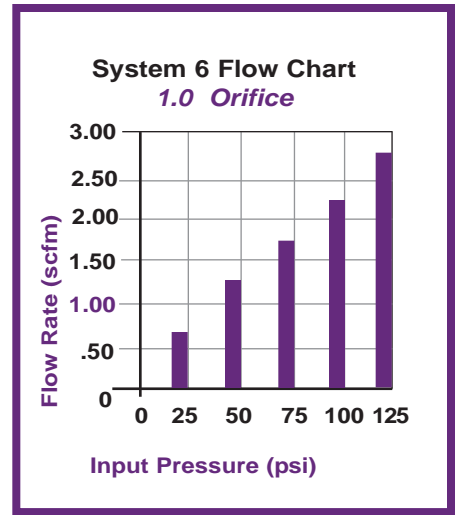
3-Way
Normally
Open

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

Part Number	Description
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

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

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

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 Solenoid Valve

S 6 - 2 0 - 2 4 - 0

Actuator

Solenoid System 6

Function

2= 2-Way
3= 3-Way

Position One

0= Normally Closed

Voltage

12= 12V DC
12LW= 12V DC *low watt*
(0.6 mm orifice only)
110= 110/120V AC
220= 220/240V AC
24AC= 24V AC
24= 24V DC
24LW= 24V DC *low watt*
(0.6 mm orifice only)

Connectors

0= Spade
2= Flying Leads 18"

Example:

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

Ordering Information

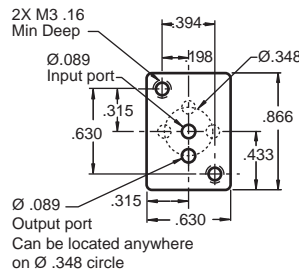
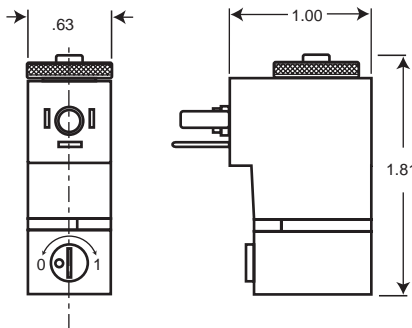
- Solenoid valve and manifold sold separately.
- To order standard product refer to Product Information listing.
- Mounting screws (2) are provided.
- Contact factory for DIN Connector with LED and/or suppression.



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, connector 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

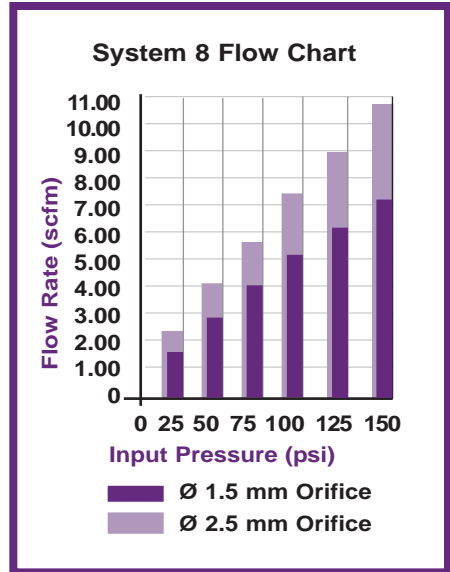
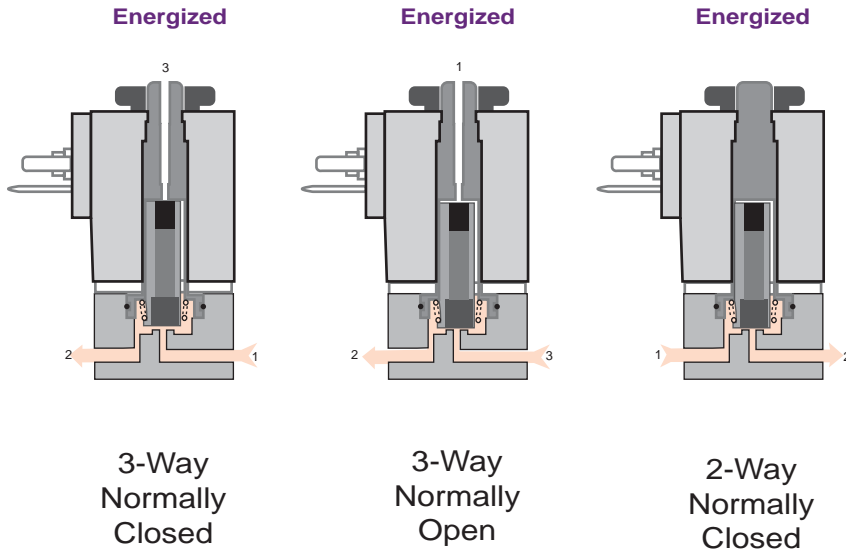
Electrical Performance Data System 8

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 Cut-away 2-Way & 3-Way



Port designation

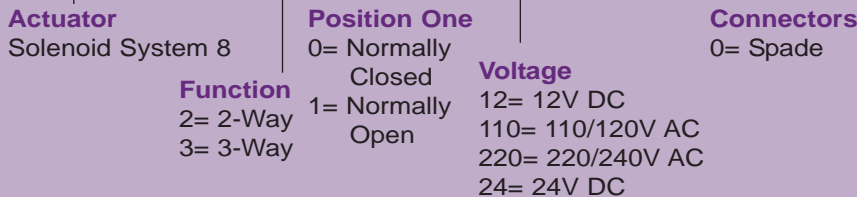
1	2	3
Input Port	Output Port	Exhaust Port



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 Solenoid Valve

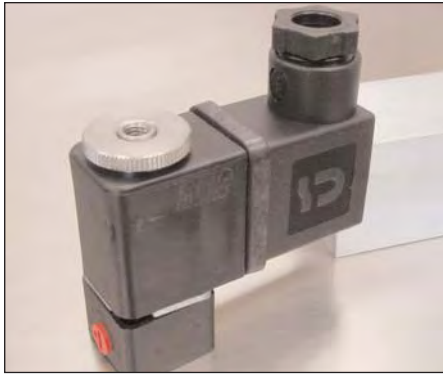
S 8 - 3 0 - 1 2 - 0



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

Orifice 2.5 mm

Part Number	Description
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 Closed

Orifice 1.5 mm

Part Number	Description
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

3-Way Normally Open

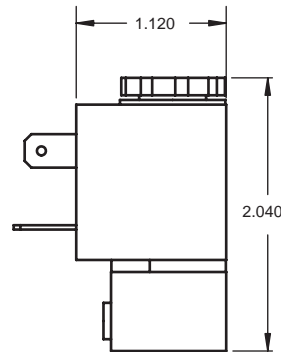
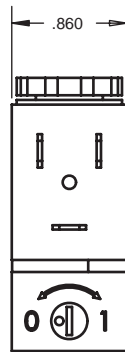
Orifice 1.5 mm

Part Number	Description
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

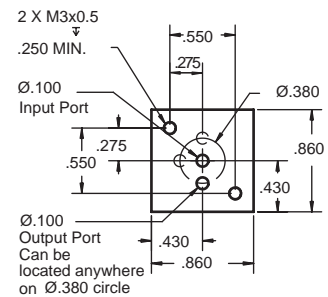
Accessories

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

System 8



Footprint

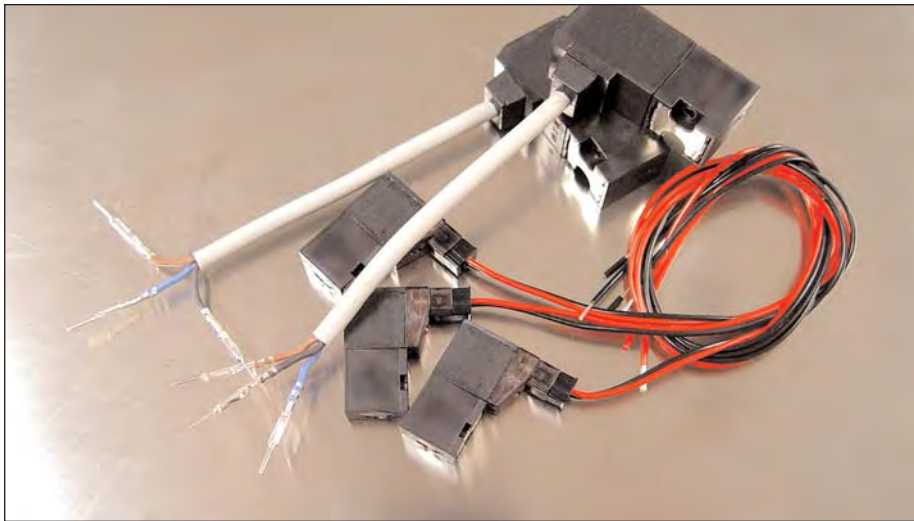


Coil orientation is independent of valve orientation

● 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	20" HG Vac to 105 psi	.016	0.62	1.22 @ 105psi (7 Bar)	.23	.30
15 mm	1.1 mm NC	20" HG Vac to 150 psi	.032	1.28	3.38 @ 150 psi (10 bar)	.11	.17
15 mm	1.6 mm NC	20" HG Vac 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	1.3	24 DC	-5 % to 10%	8 ms	10 ms	F 311°F (155°C)
15 mm	3	12 DC, 24 DC	-5 % to 10%	10 ms	12 ms	F 311°F (155°C)

Materials

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

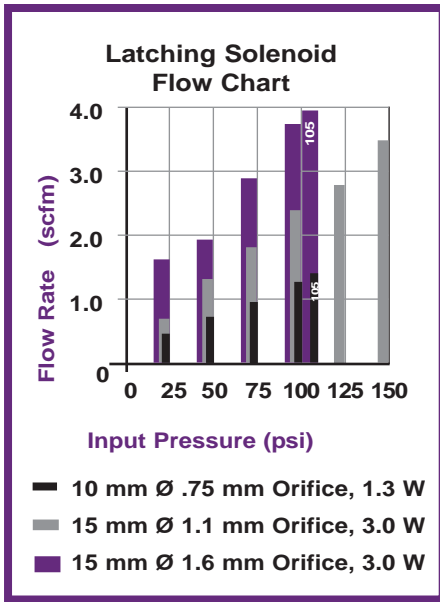
2 & 3-Way Latching Solenoid Valves 10 & 15 mm

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 energized 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.

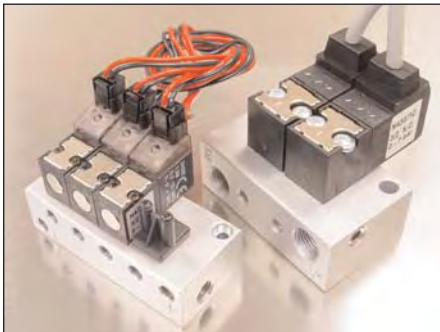
Life Expectancy

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

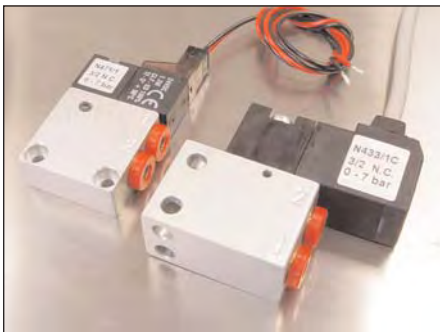
15 mm valves energize in 10 milliseconds and de-energize in 12 milliseconds



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.



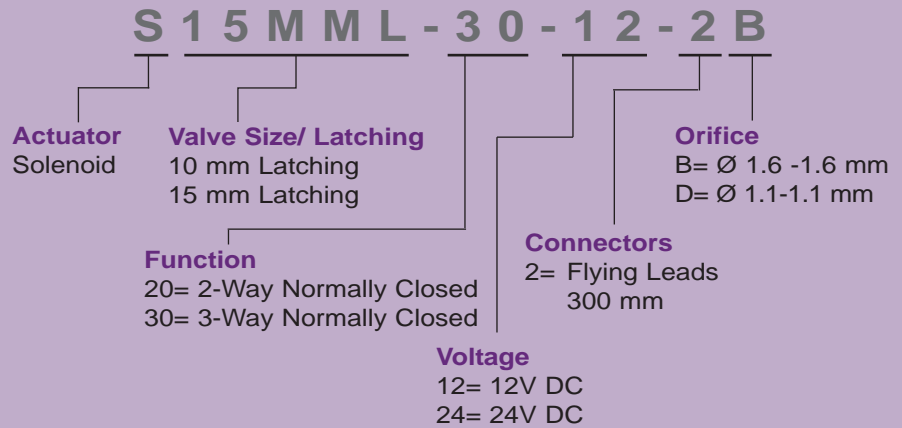
Manifolds are designed for use with specific valves. Be sure to select from the correct product grouping when [ordering manifolds and bases](#) for use with solenoid valves



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

Product Number Diagram

Latching Solenoid Valve



Example: 15 mm, Latching, 3-Way, Normally Closed, 12V DC, Flying Lead Connector, 1.6 mm Ø Orifice

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

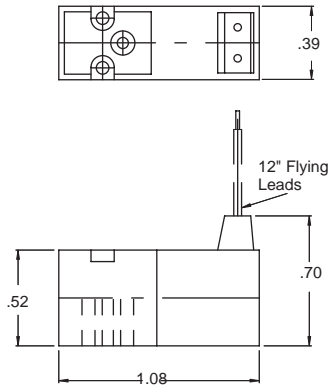
The 15 mm valves feature a 3-wire system to reverse polarity; Relays are not required. Applying an electrical signal to the Brown wire energizes (latches) the valve. The internal magnet holds the valve in the energized (open) position when the power supply is removed. Applying an electrical signal to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

3-Wire System

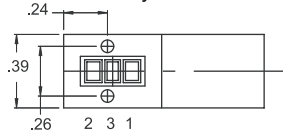
Brown – Latch / Energize
Black – Common
Blue – Unlatch / De-energize

Latching Solenoid Valve

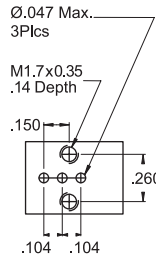
10 mm



Port Designation
Normally Closed



Footprint



Port designation

1	Input Port
2	Output Port
3	Exhaust Port

Product Information

2-Way Normally Closed

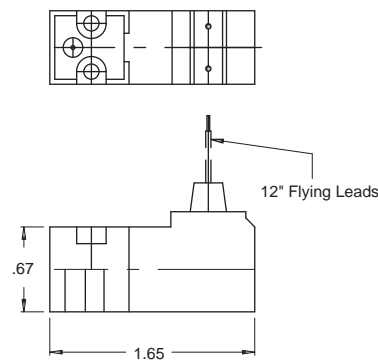
Part Number	Description
15 mm (3.0 Watt)	
Flying Leads S15MML-20-12-2B	12 DC 1.6 mm
S15MML-20-12-2D	12 DC 1.1 mm
S15MML-20-24-2B	24 DC 1.6 mm
S15MML-20-24-2D	24 DC 1.1 mm

3-Way Normally Closed

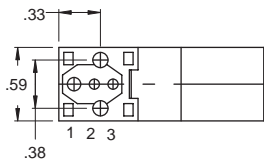
Part Number	Voltage	Orifice
10 mm (1.3 Watt) Flying Leads		
S10MML-30-24-2	24 DC	.75 mm
15 mm (3.0 Watt)		
Flying Leads S15MML-30-12-2B	12 DC	1.6 mm
S15MML-30-12-2D	12 DC	1.1 mm
S15MML-30-24-2B	24 DC	1.6 mm
S15MML-30-24-2D	24 DC	1.1 mm

Latching Solenoid Valve

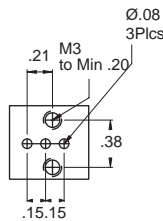
15 mm



Port Designations



Footprint



Port designation

1	Input Port
2	Output Port
3	Exhaust Port

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) or M5 (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	
		Input	Output
10 mm	● 2.5 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

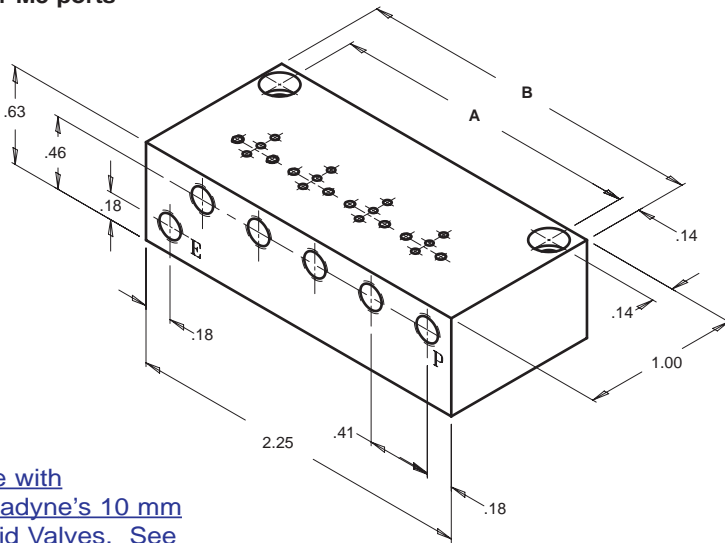
Fitting Recommendations

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 108](#) for product information.

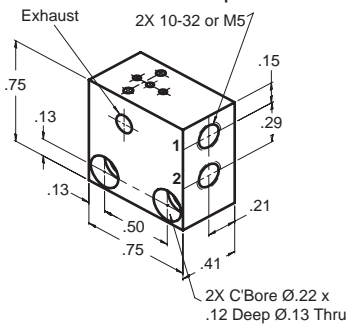
10 mm Manifolds

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

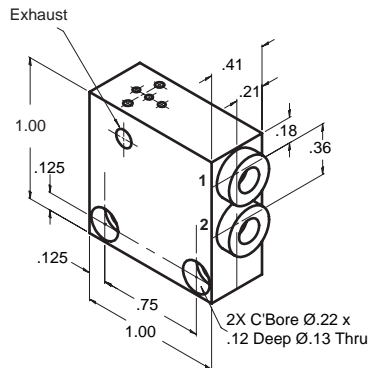
Single Station
Non-threaded exhaust

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-M25	1	.63	.41	.63
MSV10-1-156	1	1.00	.41	1.00

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

● 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.

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

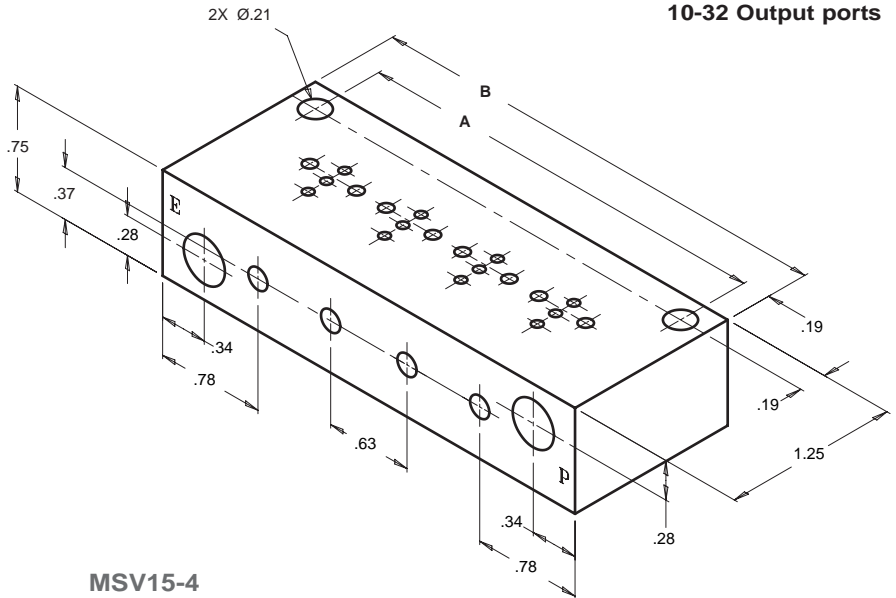


Solenoid single bases and multiple station manifolds feature a clear anodic coating which provides corrosion and wear resistance

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

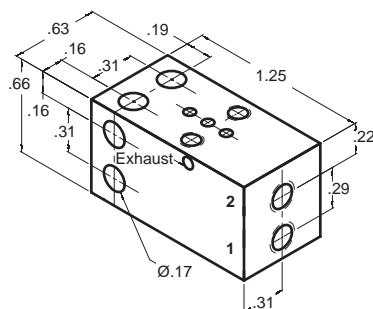


MSV15-4

15 mm Single Bases

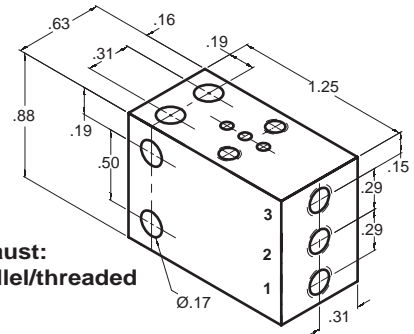
Single Station

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



● For use with 1/4 hex fittings

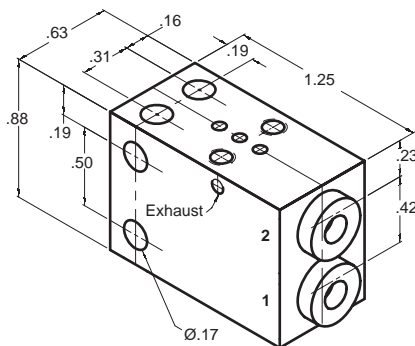
MSV15-1P 10-32 ports
MSV15-1-M5P M5 ports



Exhaust:
parallel/threaded

● For use with 1/4 hex fittings

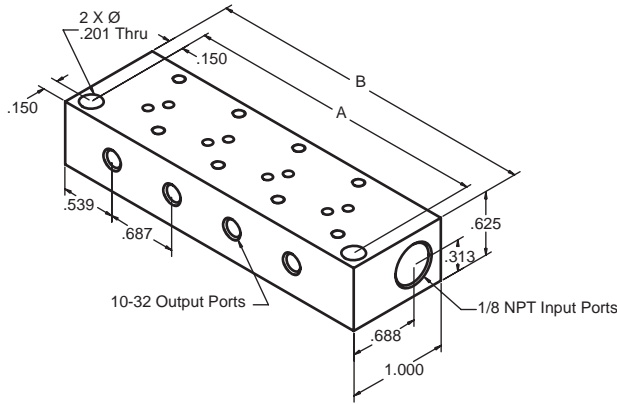
MSV15-1-156
5/32 push-to-connect ports



* Single base mount: Valve hangs over ports (pg. 115 upper photo)

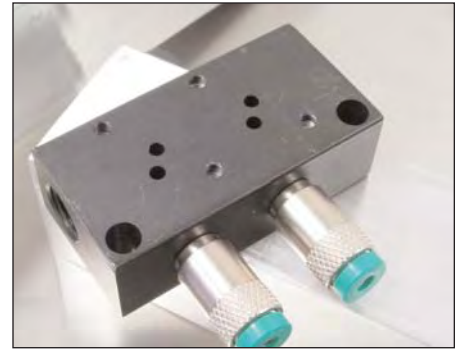
We design custom products to meet your application needs

System 6 Manifold



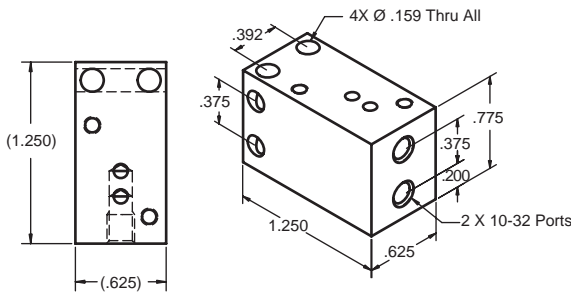
System 6 Manifolds

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

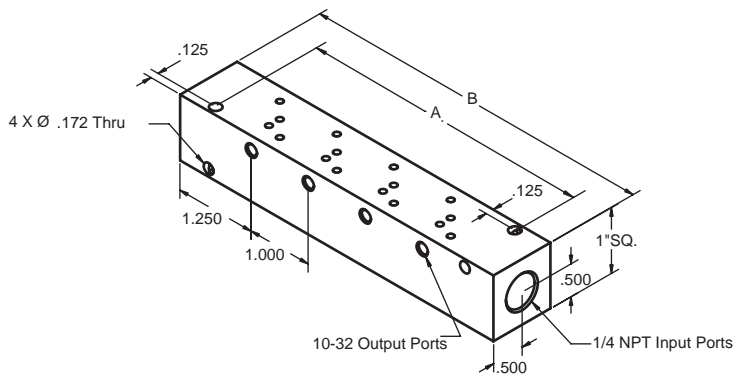
System 6 Base



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

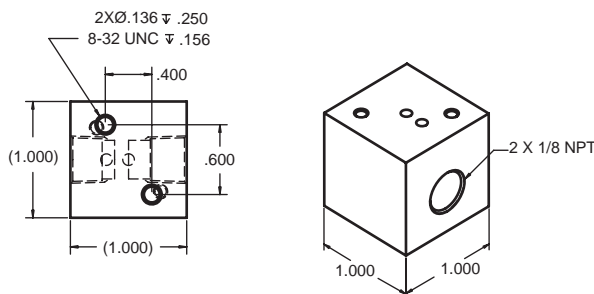
System 8 Manifold



Ordering Information

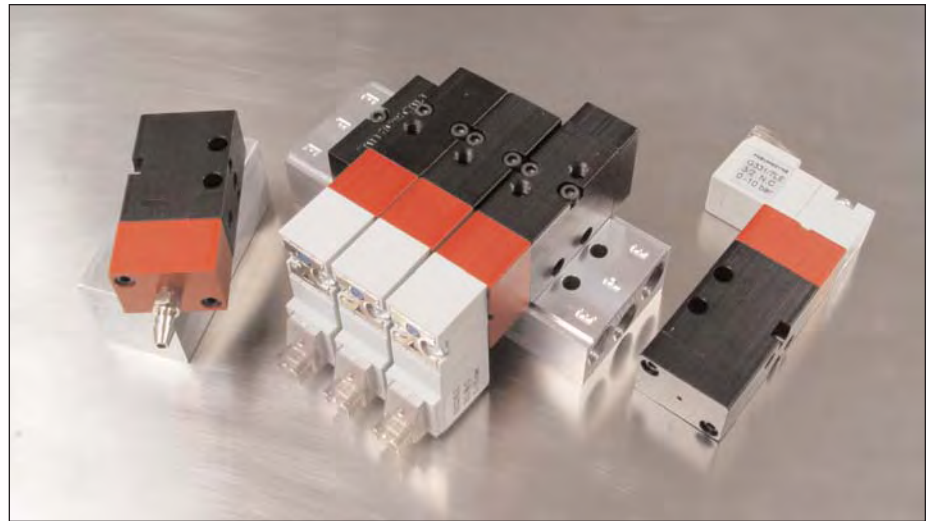
- To order standard product refer to Product Information listing.
- Contact factory for custom colors.
- Cover Plates available.
- Solenoid valves sold separately. Refer to Solenoid Valve section for ordering information.

System 8 Base



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			
0-150 psi (0-10 bar)	.15	5.8	12.1	.02	.05	15

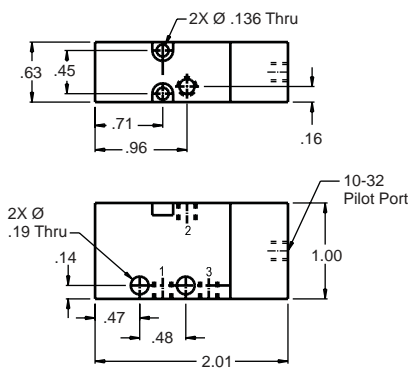
Cv per ANSI / (NFPA) T3.21.3

Electrical Performance Data Solenoid Operator

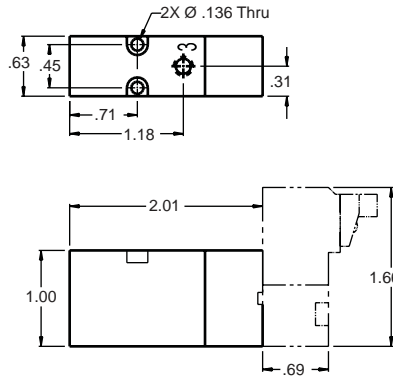
Power	Voltages	Voltage Tolerance	Response Time Energize	Response Time De-energize	Copper Wire Insulation Class
1 Watt	12 DC, 24 DC	-5% to 10%	10 ms	12 ms	F 311°F (155°C)
2.8 VA 2.5 VA holding	110 50/60Hz				

"20" Series Valves

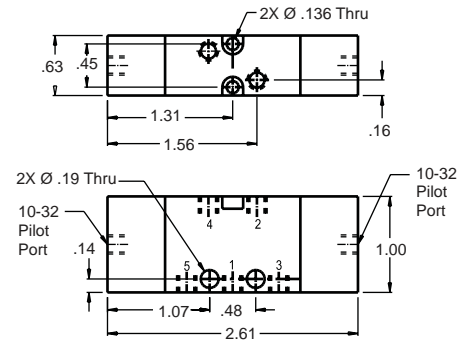
3-Way Single Air Pilot



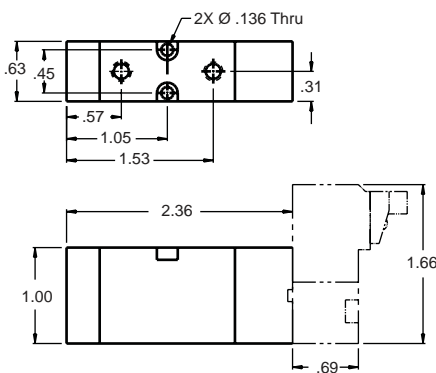
3-Way Single Solenoid



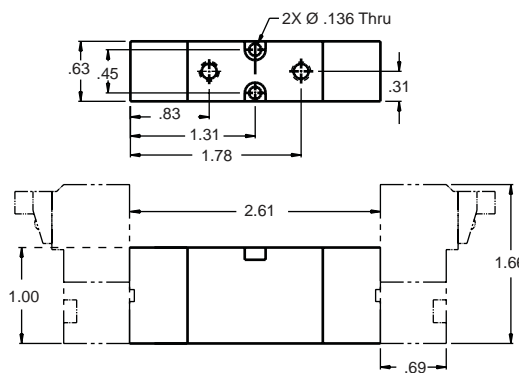
4-Way Double Air Pilot



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 Solenoid Valve

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

Body

U=Universal
M=Manifold

Function

30= 3WNC
31= 3WNO
4= 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:

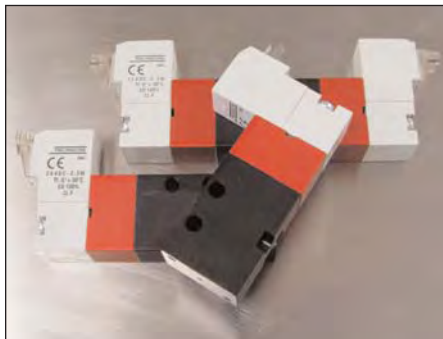
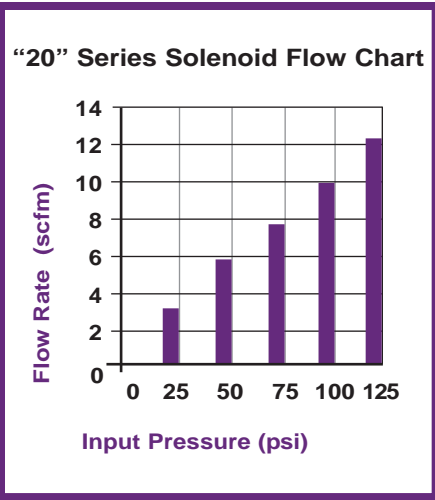
Universal body, 3WNC, Single Solenoid, 110 AC, Spade Connector

Exclusive PTFE
Impregnated Surface

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



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
S20U20-AP	2WNC
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
110 AC 2.8 VA	
S20U30-SS-11-0	Spade
S20U30-SS-11-2	Flying Leads
S20U30-SS-11-3	Line Connector
S20U30-SS-11-4	90° Connector
12 DC 1 Watt	
S20U30-SS-12-0	Spade
S20U30-SS-12-2	Flying Leads
S20U30-SS-12-3	Line Connector
S20U30-SS-12-4	90° Connector
24 DC 1 Watt	
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
110 AC	
S20M30-SS-11-0	Spade
S20M30-SS-11-2	Flying Leads
S20M30-SS-11-3	Line Connector
S20M30-SS-11-4	90° Connector
12 DC	
S20M30-SS-12-0	Spade
S20M30-SS-12-2	Flying Leads
S20M30-SS-12-3	Line Connector
S20M30-SS-12-4	90° Connector
24 DC	
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
110 AC	
S20U31-SS-11-0	Spade
S20U31-SS-11-2	Flying Leads
S20U31-SS-11-3	Line Connector
S20U31-SS-11-4	90° Connector
12 DC	
S20U31-SS-12-0	Spade
S20U31-SS-12-2	Flying Leads
S20U31-SS-12-3	Line Connector
S20U31-SS-12-4	90° Connector
24 DC	
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
110 AC	
S20M31-SS-11-0	Spade
S20M31-SS-11-2	Flying Leads
S20M31-SS-11-3	Line Connector
S20M31-SS-11-4	90° Connector
12 DC	
S20M31-SS-12-0	Spade
S20M31-SS-12-2	Flying Leads
S20M31-SS-12-3	Line Connector
S20M31-SS-12-4	90° Connector
24 DC	
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>
110 AC	
S20U42-SS-11-0	Spade
S20U42-SS-11-2	Flying Leads
S20U42-SS-11-3	Line Connector
S20U42-SS-11-4	90° Connector
12 DC	
S20U42-SS-12-0	Spade
S20U42-SS-12-2	Flying Leads
S20U42-SS-12-3	Line Connector
S20U42-SS-12-4	90° Connector
24 DC	
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>
110 AC	
S20M42-SS-11-0	Spade
S20M42-SS-11-2	Flying Leads
S20M42-SS-11-3	Line Connector
S20M42-SS-11-4	90° Connector
12 DC	
S20M42-SS-12-0	Spade
S20M42-SS-12-2	Flying Leads
S20M42-SS-12-3	Line Connector
S20M42-SS-12-4	90° Connector
24 DC	
S20M42-SS-24-0	Spade
S20M42-SS-24-2	Flying Leads
S20M42-SS-24-3	Line Connector
S20M42-SS-24-4	90° Connector

Accessories

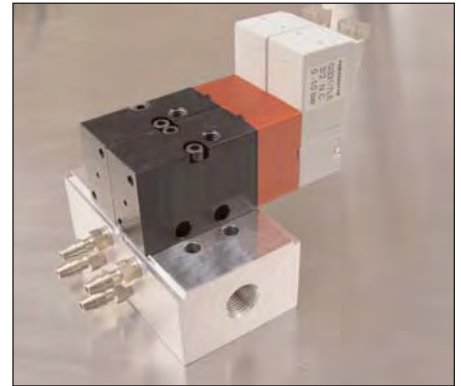
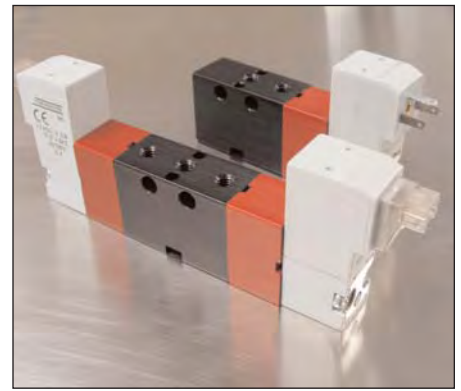
<i>Part Number</i>	
S20M-CP	Cover plate
SMMC-600	Plug-in Cable 600 MM
SMMC-1000	Plug-in Cable 1000 MM
SMM-DIN	DIN Connector
SMM-MDIN	Molded DIN Connector

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

<i>Part Number</i>	<i>Connection</i>
110 AC	
S20U42-DS-11-0	Spade
S20U42-DS-11-2	Flying Leads
S20U42-DS-11-3	Line Connector
S20U42-DS-11-4	90° Connector
12 DC	
S20U42-DS-12-0	Spade
S20U42-DS-12-2	Flying Leads
S20U42-DS-12-3	Line Connector
S20U42-DS-12-4	90° Connector
24 DC	
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>
110 AC	
S20M42-DS-11-0	Spade
S20M42-DS-11-2	Flying Leads
S20M42-DS-11-3	Line Connector
S20M42-DS-11-4	90° Connector
12 DC	
S20M42-DS-12-0	Spade
S20M42-DS-12-2	Flying Leads
S20M42-DS-12-3	Line Connector
S20M42-DS-12-4	90° Connector
24 DC	
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

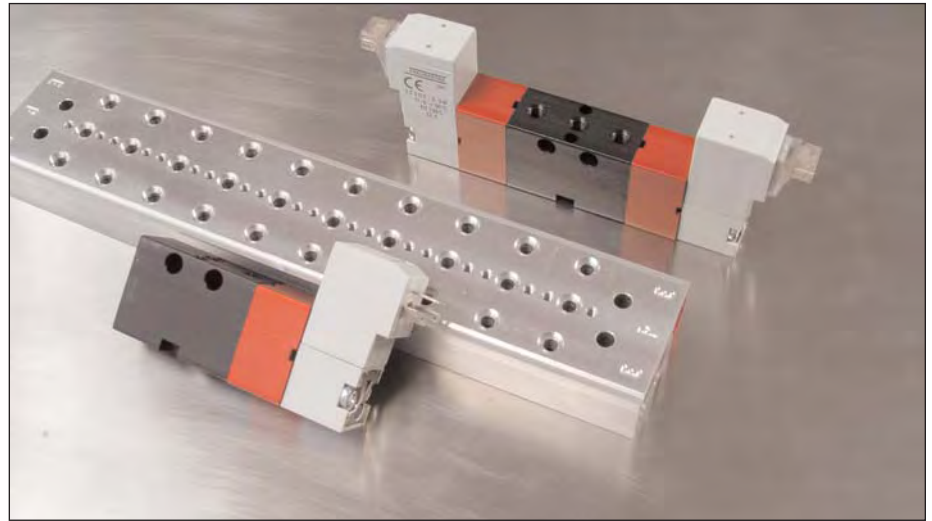
300 mm Plug-in Cable included with Line and 90° Connector

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
Input	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

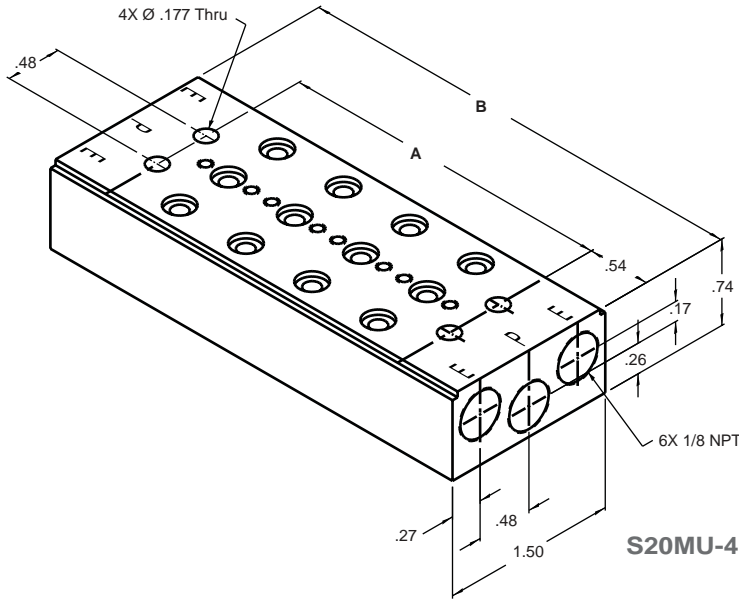
We design custom products to meet your application needs

Ordering Information

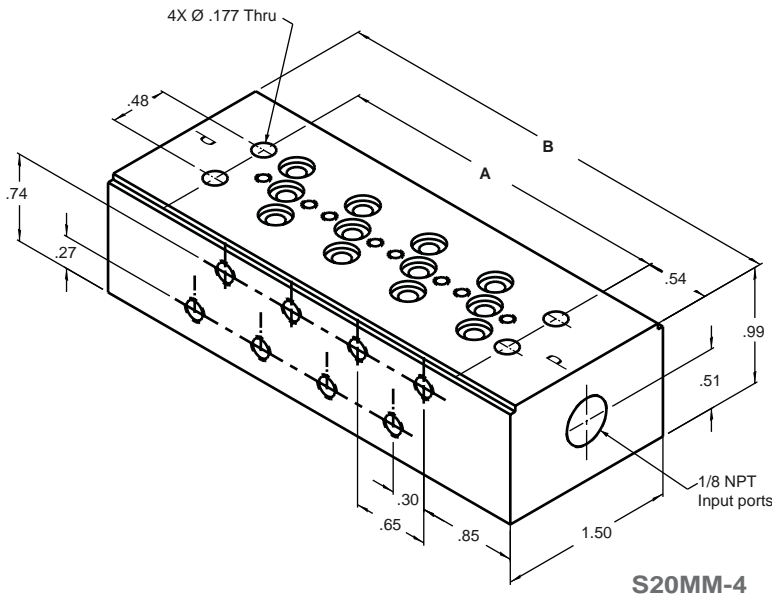
- To order standard product refer to Product Information listing.
- Contact factory for custom colors.
- Cover Plates available to conceal unused stations.
- O-rings and mounting screws included with manifolds.

“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

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

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

- 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 Valves

Pneumadyne's Solenoid Operated Cylinder Control Valves are ideal for applications requiring controlled movement of single-acting spring return cylinders. These precision machined valves were designed for use with [Pneumadyne's 15 mm Solenoid Valves \(sold separately\) see page 112.](#)

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.

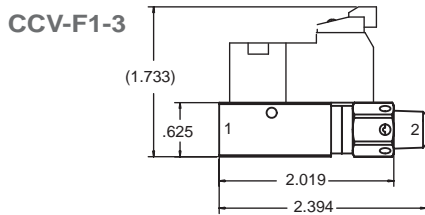
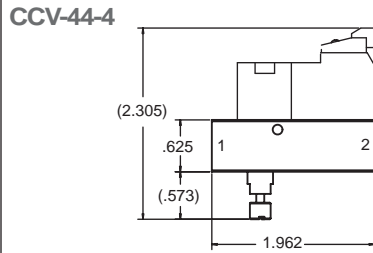
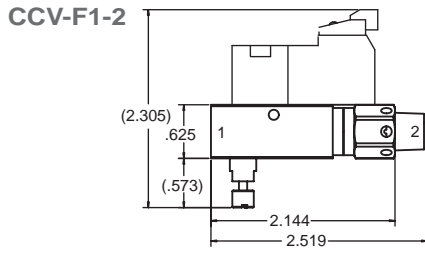
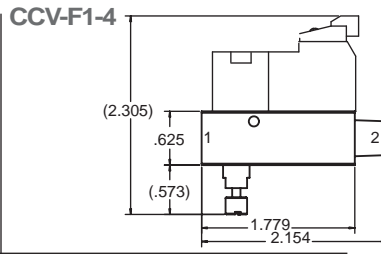
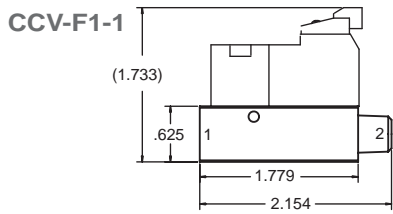
CCV-F1-2 offers the combination of a Needle Valve and Quick Exhaust providing controlled cylinder movement in both directions. A built-in Needle Valve in the input port, 10-32 (F), controls cylinder extension while the 1/8 NPT Quick Exhaust in the output port allows rapid cylinder return.

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.

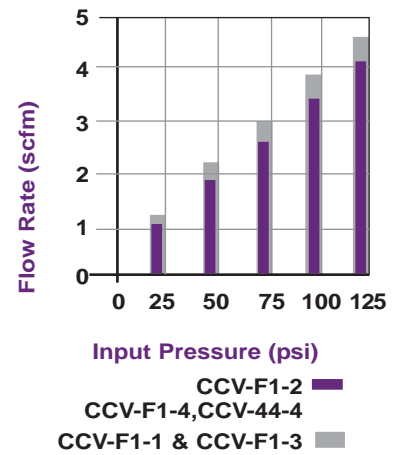
CCV-F1-4 features a built-in Needle Valve in the input port, 10-32 (F), for controlled cylinder extension. The cylinder's spring controls rod retraction.

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.

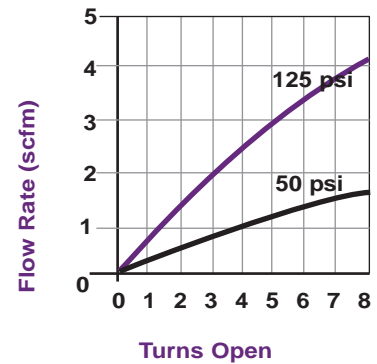
Cylinder Control Valve



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 actuates the valve resulting in the controlled rod movement determined by the Cylinder Control Valve.

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

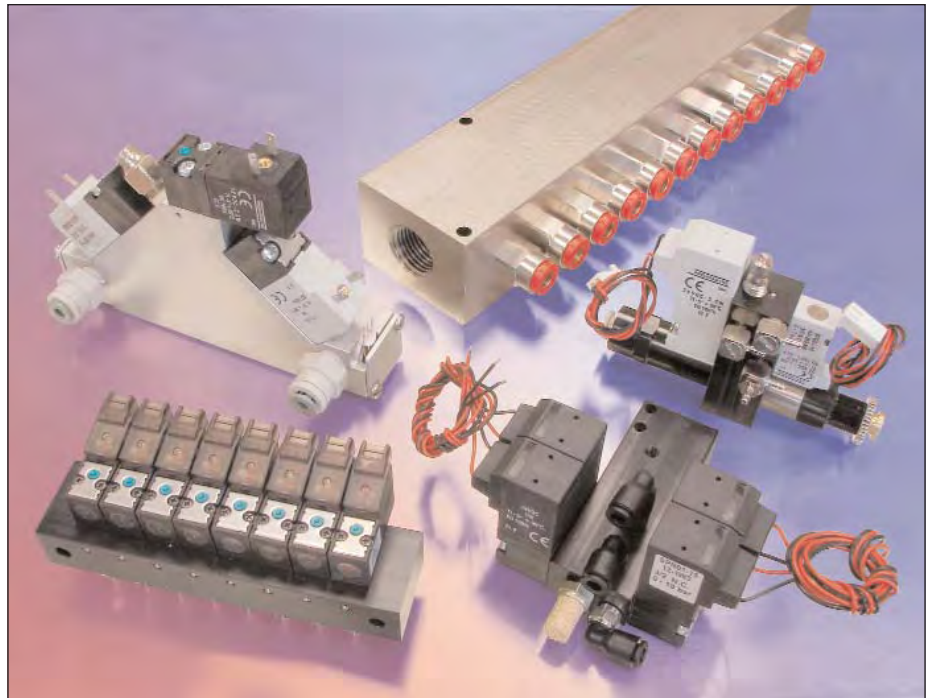
- To order standard product refer to Product Information listing.
- 15 mm Solenoid Valves sold separately.
- Contact factory for custom porting configurations.

Ideal for controlling single-acting spring return cylinders

Custom Products

Providing fluid handling solutions that meet customer 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 custom products. Our knowledge and expertise in fluid handling and precision machining are an advantage when developing custom components. We take pride in our ability to partner with our customers and develop successful solutions for their applications. Contact Pneumadyne the next time your application requires a custom component.



Product Descriptions

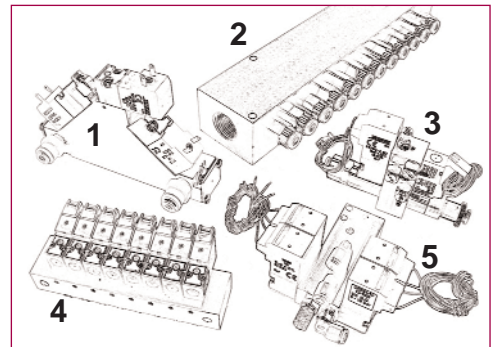
1. This unique valve block features normally-closed and normally-open solenoid valves to easily lock and unlock the position of a surgical apparatus.

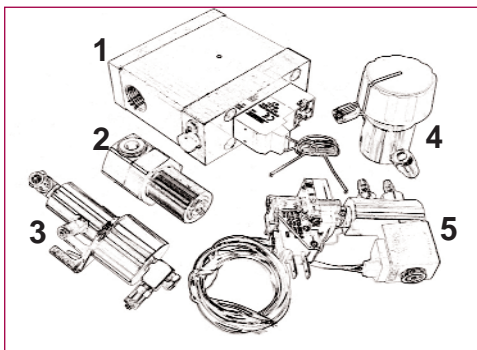
2. Developed and manufactured for dispensing liquid in food processing equipment, this custom manifold features 12 cartridge-style check valves with push-to-connect ports to ease tubing installation.

3. Designed and manufactured for a compact dental application, this distinctive valve assembly features a pressure regulator, two solenoid valves, a needle valve and fittings with precision orifices.

4. This 8-station valve bank features 10 mm solenoid valves and Pneu-Edge fittings on a custom manifold and is used to operate the sampling cylinders in a Nucleic Acid Purifier for DNA archiving.

5. Adjustable air suspension has become an important feature in the manufacture of motorcycles. This compact assembly provides four solenoid valves to inflate and deflate both the front and rear suspension of a bike.





Product Descriptions

1. Developed to indicate a leak in a water circuit, the Water Breaker valve features a 15 mm solenoid to quickly shut-off water lines preventing further damage and permitting repair.

2. Manufactured for an automotive lift application, Pneumadyne engineers condensed a fixed orifice check valve, push-to-connect ports and a right-angle bulkhead into one durable, easy-to-install brass component.

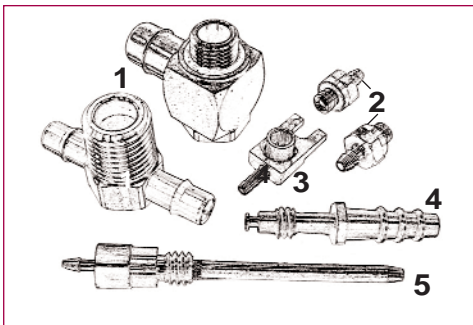
3. Developed for a disk drive manufacturer, the Sequence Interlock Device features a 2-way normally open valve with built-in check and low pressure air pilot to allow numerous cylinders to retract one at a time according to a desired sequence.

4. Originally developed to control the spray of a liquid bandage material, Pneumadyne's custom needle valve features a non-rising stem and achieves full flow in 3/4 turn of the knob.

5. To automate the manual plug located in the bottom of a therapeutic hot tub, Pneumadyne engineers designed a compact valve assembly featuring a custom base with built-in check to accommodate a 12 Volt DC Solenoid valve and pressure switch.

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***



Product Descriptions

1. Stainless steel Pneu-Edge® fittings are used throughout a self-serve shake machine to ensure the leak-proof flow of both water and sanitizer.

2. Aluminum fittings are ideal for applications in which component weight is a concern. Pneumadyne's aluminum fittings are used on vacuum cups in pick and place applications and also in the clutch management systems in race cars.

3. Sophisticated machining techniques allow us to machine a mounting bracket at the end of a barb as required in a Vapor Recovery System.

4. Developed for a medical application, this aluminum Cannula style fitting features a .013 orifice and is anodized green for identification purposes.

5. A standard air jet was modified to include a custom base for mounting as a blow off nozzle in a textile application.



...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.

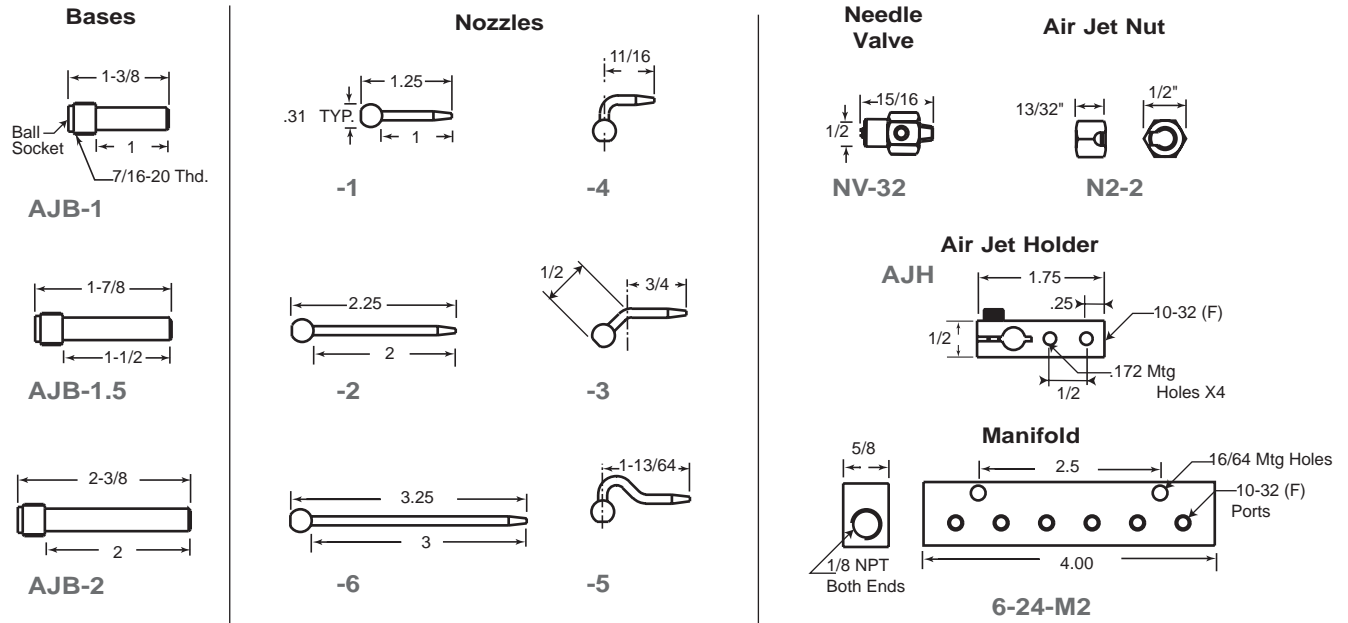
Performance Data

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.

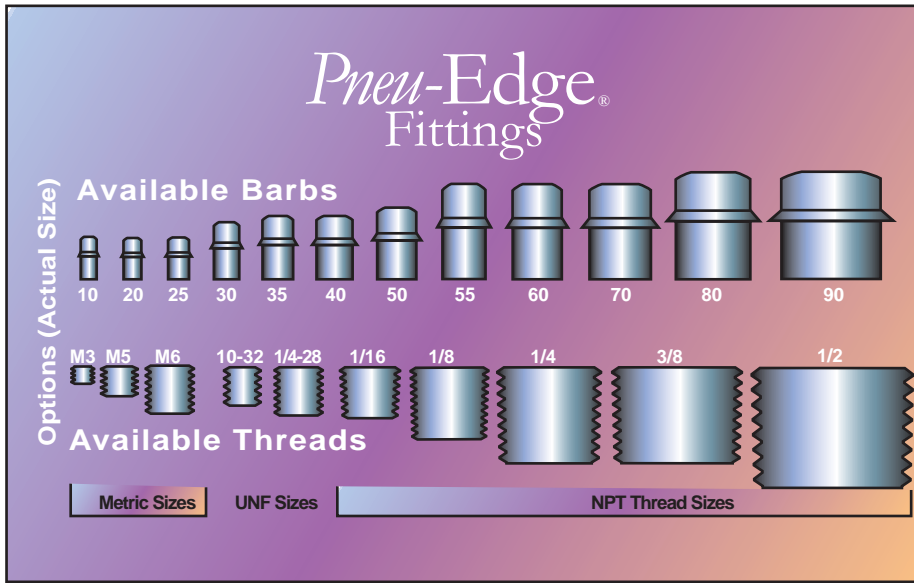
Materials

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 Thread
BK= Bulkhead
FB= Female Thread
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= Connector-Straight
L= Elbow
T= Tee
RC= Reducing Connector
RT= Reducing Tee
RX= Reducing Cross
X= Cross

Barb Size- refer to "Connector Options" below for code

Barb Size Code	Tube ID	Thru hole
10=	1/16	.055
20=	.078	.059
25=	3/32	.081
30=	1/8	.089
35=	5/32	.104
40=	.170	.125
50=	3/16	.140
55=	7/32	.156
60=	1/4	.177
70=	5/16	.250
80=	3/8	.290
*90=	1/2	.391

Connector Options

Barb Size	Thread Size
10-32=	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

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

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

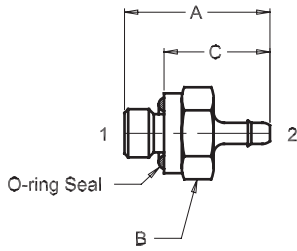
Note:
Please refer to drawings for location and size of barbs on reducer fittings-
* Contact factory for availability

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 may apply.*
- For 316 Stainless Steel add a -316 suffix to the part number- *lead times may apply.*
- For 2011 Aluminum (Black Anodized) add a -A suffix to the part number- *lead times may apply.*
- Optional O-rings available- contact factory.
- Standard package quantities:

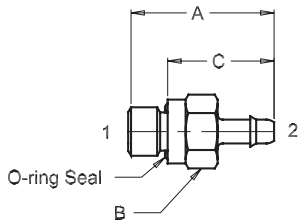
- 25 pcs per bag
- 100 pcs per box

Straight 10-32



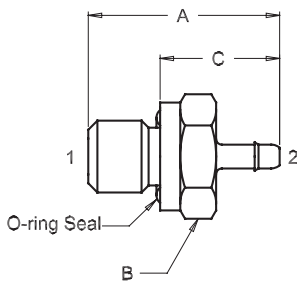
Product Number	A	B Hex	C	1	2 Tubing ID
EB10	0.571	5/16	0.416	10-32 (M)	1/16
EB20	0.571	5/16	0.416	10-32 (M)	.078
EB25	0.574	5/16	0.419	10-32 (M)	3/32
EB30	0.665	5/16	0.510	10-32 (M)	1/8
EB35	0.689	5/16	0.534	10-32 (M)	5/32
EB40	0.689	5/16	0.534	10-32 (M)	.170
EB50	0.723	5/16	0.568	10-32 (M)	3/16
EB60	0.846	5/16	0.691	10-32 (M)	1/4

Straight 1/4 Hex



Product 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)	.078
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



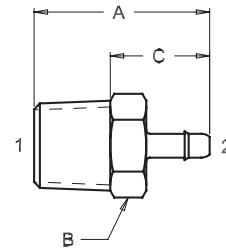
Product Number	A	B Hex	C	1	2 Tubing ID
EB10-4-28	0.666	3/8	0.416	1/4-28 (M)	1/16
EB20-4-28	0.666	3/8	0.416	1/4-28 (M)	.078
EB25-4-28	0.669	3/8	0.419	1/4-28 (M)	3/32
EB30-4-28	0.760	3/8	0.510	1/4-28 (M)	1/8
EB40-4-28	0.784	3/8	0.534	1/4-28 (M)	.170
EB50-4-28	0.618	3/8	0.568	1/4-28 (M)	3/16
EB60-4-28	0.941	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.

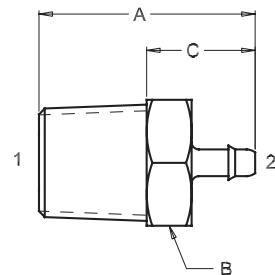


All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

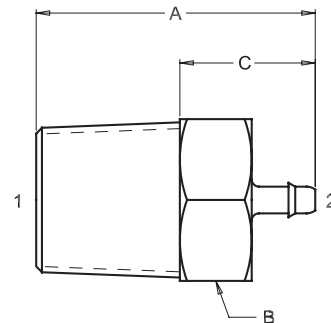
Product Number	A	B Hex	C	1	2 Tubing ID	Straight 1/16 NPT
EB10-1/16	0.611	5/16	0.346	1/16 (M)	1/16	
EB20-1/16	0.611	5/16	0.346	1/16 (M)	.078	
EB25-1/16	0.614	5/16	0.349	1/16 (M)	3/32	
EB30-1/16	0.705	5/16	0.440	1/16 (M)	1/8	
EB40-1/16	0.729	5/16	0.464	1/16 (M)	.170	
EB50-1/16	0.763	5/16	0.498	1/16 (M)	3/16	
EB60-1/16	0.886	5/16	0.621	1/16 (M)	1/4	



Product 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)	.078	
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	

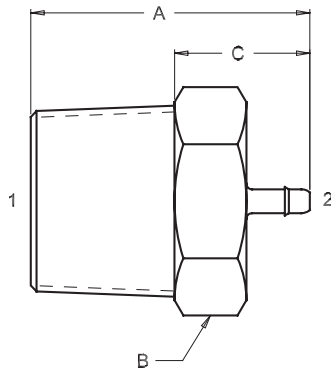


Product Number	A	B Hex	C	1	2 Tubing ID	Straight 1/4 NPT
EB10-1/4	0.971	9/16	0.471	1/4 (M)	1/16	
EB20-1/4	0.971	9/16	0.471	1/4 (M)	.078	
EB25-1/4	0.974	9/16	0.474	1/4 (M)	3/32	
EB30-1/4	1.065	9/16	0.565	1/4 (M)	1/8	
EB35-1/4	1.089	9/16	0.589	1/4 (M)	5/32	
EB40-1/4	1.089	9/16	0.589	1/4 (M)	.170	
EB50-1/4	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

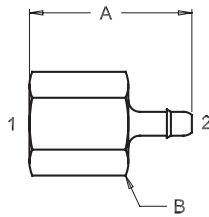
Straight 3/8 NPT



Product Number	A	B Hex	C	1	2 Tubing ID
EB20-3/8	0.971	11/16	0.471	3/8 (M)	.078
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

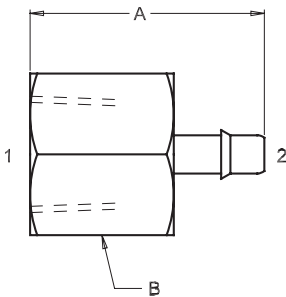
Female



Product 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)	.078
EFB30	0.659	1/4	10-32 (F)	1/8
EFB40	0.683	1/4	10-32 (F)	.170

Straight 1/8 NPT

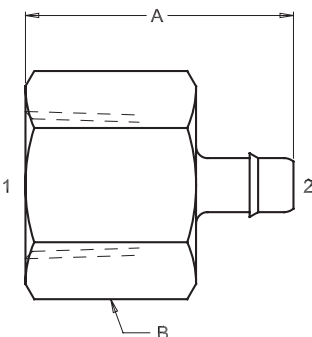
Female



Product 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)	.078
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



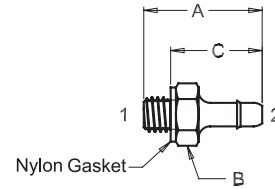
Product Number	A	B Hex	1	2 Tubing ID
EFB10-1/4	0.815	11/16	1/4 (F)	1/16
EFB20-1/4	0.815	11/16	1/4 (F)	.078
EFB30-1/4	0.909	11/16	1/4 (F)	1/8
EFB40-1/4	0.933	11/16	1/4 (F)	.170
EFB50-1/4	0.967	11/16	1/4 (F)	3/16
EFB60-1/4	1.090	11/16	1/4 (F)	1/4
EFB80-1/4	1.153	11/16	1/4 (F)	3/8



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

Straight M3

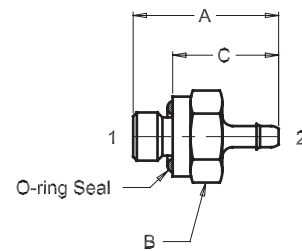
Product Number	A	B Hex	C	1	2 Tubing ID
EB10-M3*	0.412	3/16	0.300	M3 (M)	1/16
EB20-M3	0.412	3/16	0.300	M3 (M)	.078
EB25-M3	0.415	3/16	0.303	M3 (M)	3/32
EB30-M3	0.506	3/16	0.394	M3 (M)	1/8
EB40-M3	0.536	1/4	0.451	M3 (M)	.170



*Thru hole: 0.047

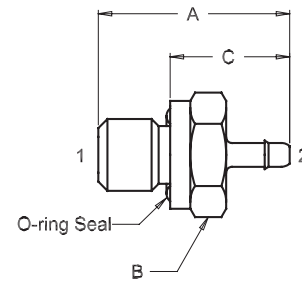
Straight M5

Product Number	A	B Hex	C	1	2 Tubing ID
EB10-M5	0.571	5/16	0.416	M5 (M)	1/16
EB20-M5	0.571	5/16	0.416	M5 (M)	.078
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



Straight M6

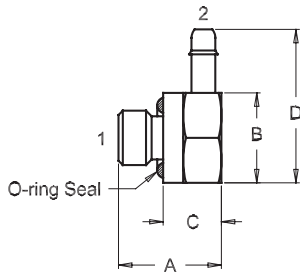
Product Number	A	B Hex	C	1	2 Tubing ID
EB10-M6	0.666	3/8	0.416	M6 (M)	1/16
EB20-M6	0.666	3/8	0.416	M6 (M)	.078
EB25-M6	0.669	3/8	0.419	M6 (M)	3/32
EB30-M6	0.760	3/8	0.510	M6 (M)	1/8
EB40-M6	0.784	3/8	0.534	M6 (M)	.170



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.

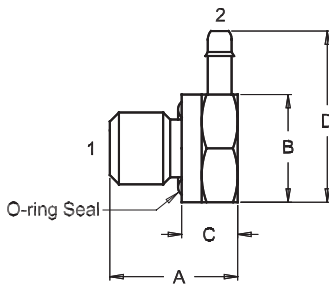
All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Elbow Fixed 10-32



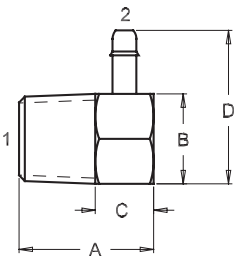
Product Number	A	B Hex	C	D	1	2 Tubing ID
ELB10	0.358	5/16	0.203	0.534	10-32 (M)	1/16
ELB20	0.358	5/16	0.203	0.534	10-32 (M)	.078
ELB25	0.358	5/16	0.203	0.537	10-32 (M)	3/32
ELB30	0.436	5/16	0.281	0.628	10-32 (M)	1/8
ELB35	0.488	5/16	0.333	0.652	10-32 (M)	5/32
ELB40	0.488	5/16	0.333	0.652	10-32 (M)	.170

Elbow Fixed 1/4-28



Product 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)	.078
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

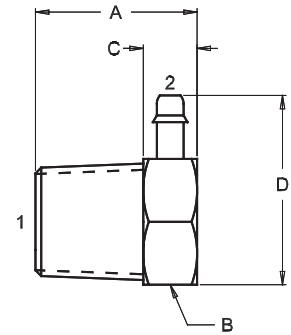


Product Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-1/16	0.468	5/16	0.203	0.534	1/16 (M)	1/16
ELB20-1/16	0.468	5/16	0.203	0.534	1/16 (M)	.078
ELB25-1/16	0.468	5/16	0.203	0.537	1/16 (M)	3/32
ELB30-1/16	0.468	5/16	0.203	0.628	1/16 (M)	1/8
ELB40-1/16	0.531	3/8	0.266	0.714	1/16 (M)	.170
ELB50-1/16	0.531	3/8	0.266	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

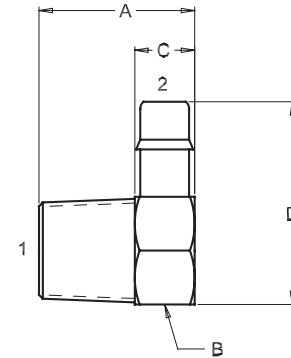
Product Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-1/8	0.563	7/16	0.300	0.659	1/8 (M)	1/16
ELB20-1/8	0.563	7/16	0.300	0.659	1/8 (M)	.078
ELB25-1/8	0.563	7/16	0.300	0.662	1/8 (M)	3/32
ELB30-1/8	0.563	7/16	0.300	0.753	1/8 (M)	1/8
ELB35-1/8	0.675	7/16	0.300	0.777	1/8 (M)	5/32
ELB40-1/8	0.625	7/16	0.355	0.777	1/8 (M)	.170
ELB50-1/8	0.625	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



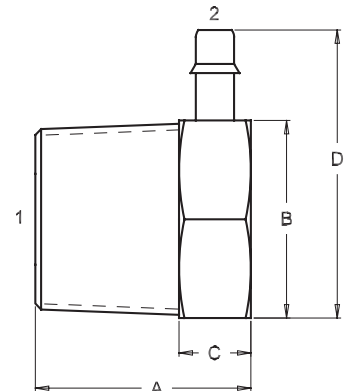
Product Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-1/4	0.750	9/16	0.250	0.784	1/4 (M)	1/16
ELB20-1/4	0.750	9/16	0.250	0.784	1/4 (M)	.078
ELB25-1/4	0.750	9/16	0.250	0.787	1/4 (M)	3/32
ELB30-1/4	0.750	9/16	0.250	0.878	1/4 (M)	1/8
ELB30-1/4-S	0.583	9/16	0.250	0.878	1/4 (M)	1/8
ELB35-1/4	0.825	9/16	0.325	0.902	1/4 (M)	5/32
ELB40-1/4-S	0.658	9/16	0.325	0.902	1/4 (M)	.170
ELB40-1/4	0.825	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




Product 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

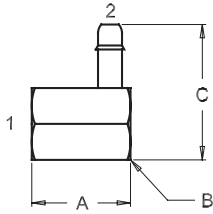


When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.

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

Elbow Fixed 10-32

Female

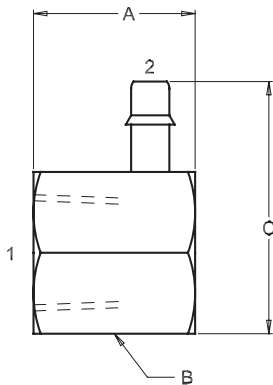


Product Number	A	B Hex	C	1	2 Tubing ID
EFLB10	0.344	1/4	0.471	10-32 (F)	1/16
EFLB20	0.344	1/4	0.471	10-32 (F)	.078
EFLB10-S	0.281	1/4	0.471	10-32 (F)	1/16
EFLB20-S	0.281	1/4	0.471	10-32 (F)	.078

S= Short

Elbow Fixed 1/8 NPT

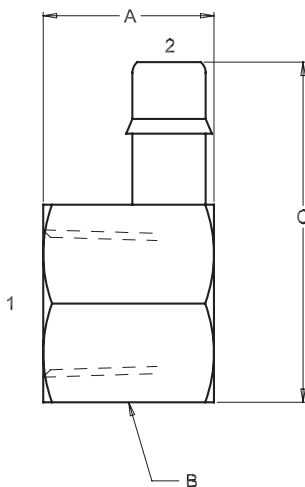
Female



Product 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)	.078
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



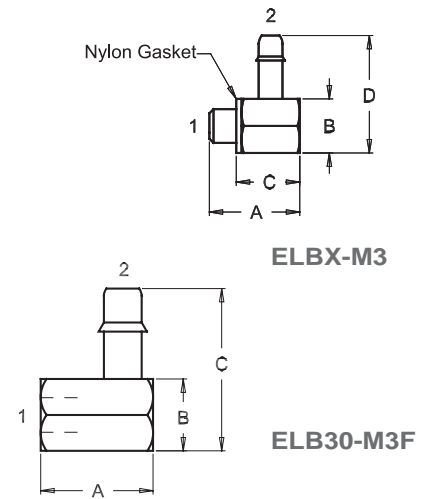
Product Number	A	B Hex	C	1	2 Tubing ID
EFLB10-1/4	0.594	11/16	0.909	1/4 (F)	1/16
EFLB20-1/4	0.594	11/16	0.909	1/4 (F)	.078
EFLB25-1/4	0.594	11/16	0.912	1/4 (F)	3/32
EFLB30-1/4	0.594	11/16	1.003	1/4 (F)	1/8
EFLB35-1/4	0.594	11/16	1.027	1/4 (F)	5/32
EFLB40-1/4	0.594	11/16	1.027	1/4 (F)	.170
EFLB50-1/4	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

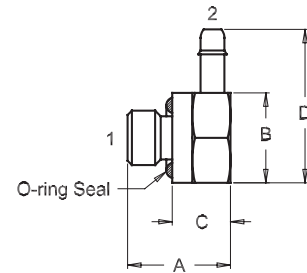
Product Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-M3	0.315	3/16	0.223	0.409	M3 (M)	1/16
ELB20-M3	0.315	3/16	0.223	0.409	M3 (M)	.078
ELB25-M3	0.315	3/16	0.223	0.412	M3 (M)	3/32
ELB30-M3F	0.391	1/4	0.565	----	M3 (F)	1/8
ELB30-M3	0.393	5/16	0.301	0.628	M3 (M)	1/8
ELB40-M3	0.393	5/16	0.301	0.652	M3 (M)	.170

Elbow Fixed M3



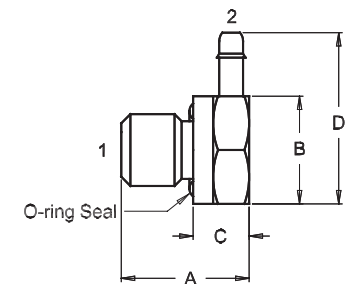
Product Number	A	B Hex	C	D	1	2 Tubing ID
ELB10-M5	0.358	5/16	0.203	0.534	M5 (M)	1/16
ELB20-M5	0.358	5/16	0.203	0.534	M5 (M)	.078
ELB25-M5	0.358	5/16	0.203	0.537	M5 (M)	3/32
ELB30-M5	0.436	5/16	0.281	0.628	M5 (M)	1/8
ELB40-M5	0.488	5/16	0.333	0.652	M5 (M)	.170

Elbow Fixed M5



Product 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)	.078
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

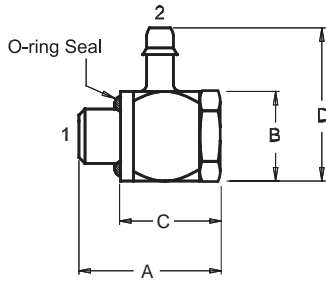
Elbow Fixed M6



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

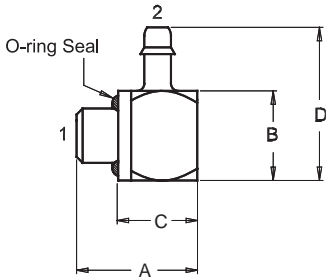
Elbow Adjustable



Product 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)	.078
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



Product 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)	.078
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



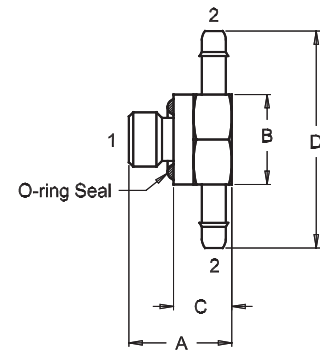
Pneu-Edge fittings feature a consistently sharp, single-barb design which provides a tighter grip and seal than standard multiple barbs



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

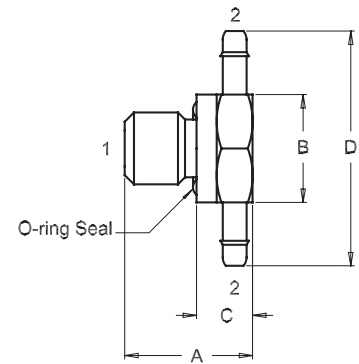
Product Number	A	B Hex	C	D	1	2 Tubing ID
ETB10	0.356	5/16	0.203	0.755	10-32 (M)	1/16
ETB20	0.356	5/16	0.203	0.755	10-32 (M)	.078
ETB25	0.356	5/16	0.203	0.761	10-32 (M)	3/32
ETB30	0.436	5/16	0.281	0.943	10-32 (M)	1/8
ETB35	0.488	5/16	0.333	0.991	10-32 (M)	5/32
ETB40	0.488	5/16	0.333	0.991	10-32 (M)	.170

Tee Fixed 10-32



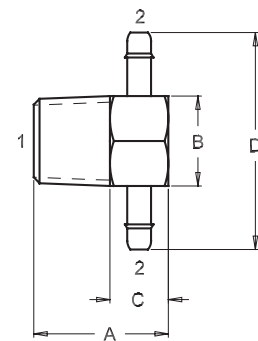
Product Number	A	B Hex	C	D	1	2 Tubing ID
ET10-4-28	0.445	3/8	0.195	0.817	1/4-28 (M)	1/16
ET20-4-28	0.445	3/8	0.195	0.817	1/4-28 (M)	.078
ET25-4-28	0.445	3/8	0.195	0.823	1/4-28 (M)	3/32
ET30-4-28	0.523	3/8	0.273	1.005	1/4-28 (M)	1/8
ET40-4-28	0.575	3/8	0.325	1.053	1/4-28 (M)	.170
ET50-4-28	0.575	3/8	0.325	1.121	1/4-28 (M)	3/16

Tee Fixed 1/4-28



Product 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)	.078
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

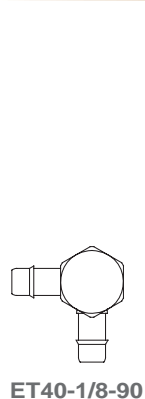
Tee Fixed 1/6 NPT



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.

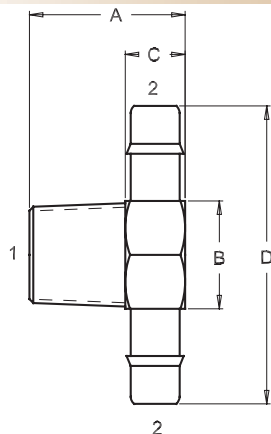
 All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Tee Fixed 1/8 NPT



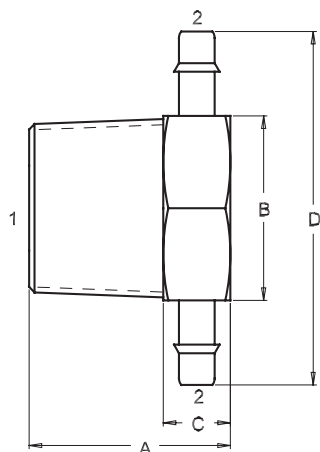
Product Number	A	B Hex	C	D	1	2 Tubing ID
ET10-1/8	0.563	7/16	0.188	0.880	1/8 (M)	1/16
ET20-1/8	0.563	7/16	0.188	0.880	1/8 (M)	.078
ET25-1/8	0.563	7/16	0.188	0.886	1/8 (M)	3/32
ET30-1/8	0.563	7/16	0.188	1.068	1/8 (M)	1/8
ET40-1/8	0.625	7/16	0.250	1.116	1/8 (M)	.170
ET40-1/8-90	0.625	7/16	0.250	1.116	1/8 (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



Product 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)	.078
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



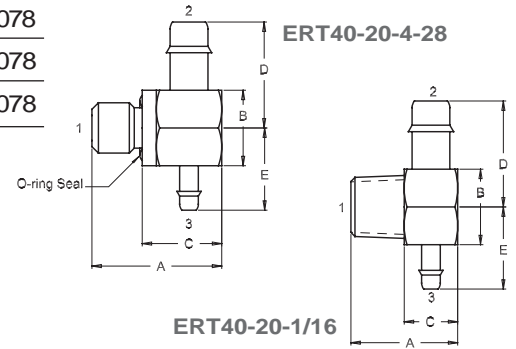
Product Number	A	B Hex	C	D	1	2 Tubing ID
ET30-3/8	0.750	11/16	0.250	1.318	3/8 (M)	1/8
ET40-3/8	0.750	11/16	0.250	1.366	3/8 (M)	.170
ET50-3/8	0.750	11/16	0.250	1.434	3/8 (M)	3/16
ET60-3/8	0.813	11/16	0.313	1.680	3/8 (M)	1/4
ET80-3/8	1.000	11/16	0.500	1.806	3/8 (M)	3/8



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

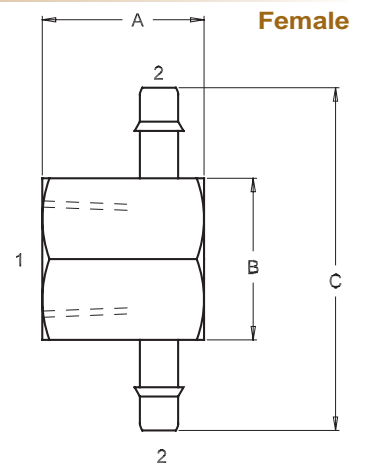
Product Number	A	B Hex	C	D	E	1	2 Tubing ID	3
ERT40-20-4-28	0.575	3/8	0.325	0.527	0.409	1/4-28 (M)	.170	.078
ERT40-20-1/16	0.531	3/8	0.266	0.527	0.409	1/16 (M)	.170	.078
ERT40-20-1/4	0.825	9/16	0.325	0.621	0.503	1/4 (M)	.170	.078

Tee Fixed Reducing



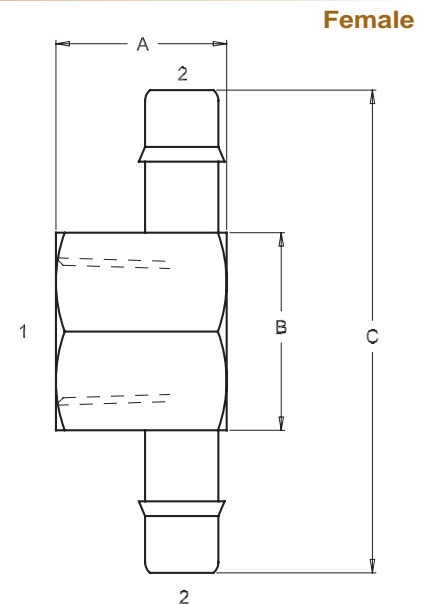
Product Number	A	B Hex	C	1	2 Tubing ID
EFT10-1/8	0.500	9/16	1.005	1/8 (F)	1/16
EFT20-1/8	0.500	9/16	1.011	1/8 (F)	.078
EFT30-1/8	0.500	9/16	1.193	1/8 (F)	1/8
EFT40-1/8	0.563	9/16	1.241	1/8 (F)	.170
EFT50-1/8	0.563	9/16	1.309	1/8 (F)	3/16
EFT60-1/8	0.563	9/16	1.561	1/8 (F)	1/4

Tee Fixed 1/8 NPT



Product 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)	.078
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

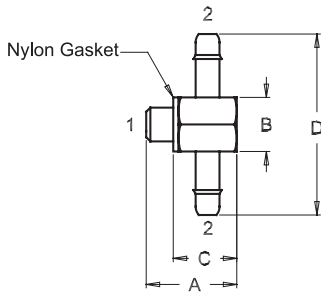
Tee Fixed 1/4 NPT



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.

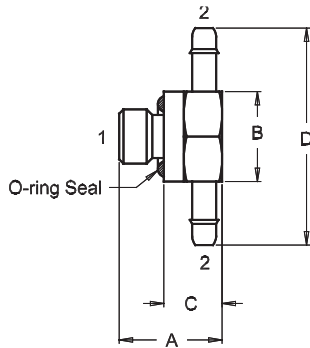
All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Tee Fixed M3



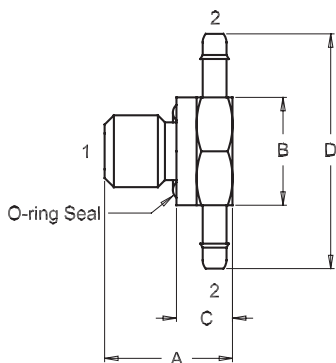
Product Number	A	B Hex	C	D	1	2 Tubing ID
ET10-M3	0.315	3/16	0.223	0.630	M3 (M)	1/16
ET20-M3	0.315	3/16	0.223	0.630	M3 (M)	.078
ET25-M3	0.315	3/16	0.223	0.636	M3 (M)	3/32
ET30-M3	0.393	5/16	0.393	0.943	M3 (M)	1/8
ET40-M3	0.393	5/16	0.393	0.991	M3 (M)	.170

Tee Fixed M5



Product 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)	.078
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



Product 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)	.078
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

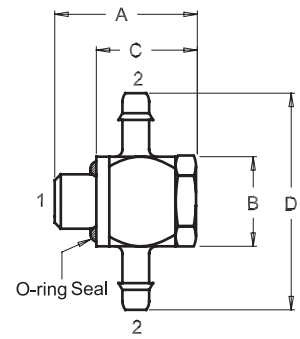
When design makes a dimension critical- contact factory for confirmation. All dimensions are in inches, unless otherwise specified and are subject to change without notice.



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

Product 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)	.078
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

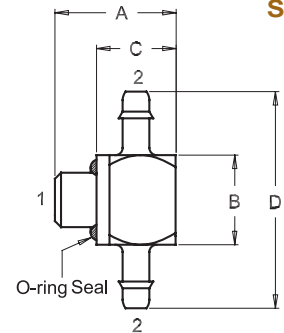
Tee Adjustable 10-32



Product 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)	.078
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



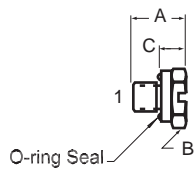
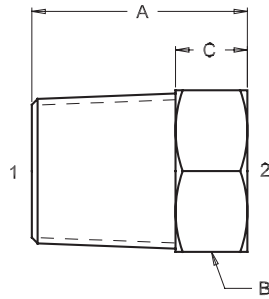
Features a screwdriver slot for fitting alignment

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

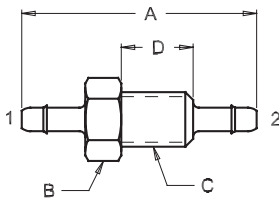
Plugs



Product 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



Product 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	.078	.078
EBK-25	0.823	1/4	10-32 (M)	0.250	3/32	3/32
EBK40-20	0.935	1/4	10-32 (M)	0.250	.170	.078
EBK40-25	0.938	1/4	10-32 (M)	0.250	.170	3/32
EBK-30-4-28	1.068	5/16	1/4-28 (M)	0.313	1/8	1/8
EBK-40-5/16	1.209	3/8	5/16-24 (M)	0.406	.170	.170
EBK-60-3/8	1.523	7/16	3/8-24 (M)	0.406	1/4	1/4
EBK-60-1/8	1.523	7/16	*1/8 (M)	0.375	1/4	1/4

Note: Locking nut included

*NPT pipe thread: locking nut not included

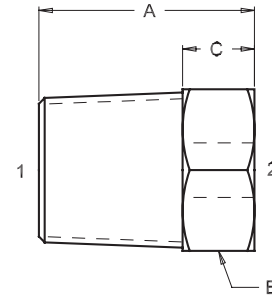


All Pneu-Edge fittings are available in 303 Stainless Steel; add a -303 suffix to the standard part number

Product Number	A	B Hex	C	1	2
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)
ERB3/8-10	0.500	7/16	0.125	3/8-24 (M)	10-32 (F)

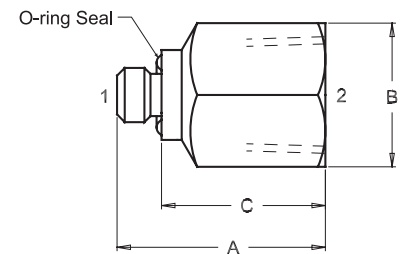
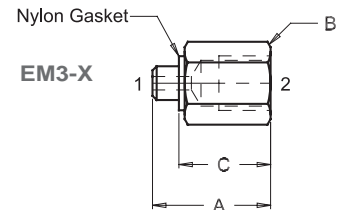
Bushings

Reducer



Product Number	A	B Hex	C	1	2
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)

Adapters



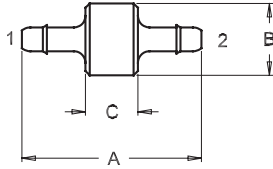
Pneumadyne's Pneu-Edge® fittings ensure a lasting tubing connection and leak-proof fit

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

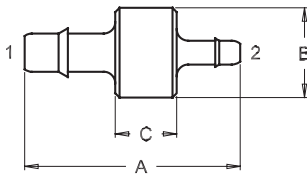


Product Number	A	B Diam.	C	1 Tubing ID	2
EC10	0.625	1/4	0.183	1/16	1/16
EC20	0.625	1/4	0.183	.078	.078
EC20-SL	0.500	5/32	0.058	.078	.078
EC25	0.641	5/16	0.193	3/32	3/32
EC30	0.884	5/16	0.214	1/8	1/8
EC35	0.879	5/16	0.214	5/32	5/32
EC40	0.938	5/16	0.245	.170	.170
EC50	1.000	3/8	0.254	3/16	3/16
EC60	1.313	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



Product Number	A	B Diam.	C	1 Tubing ID	2
ERC20-10	0.625	1/4	0.183	.078	1/16
ERC30-10	0.750	5/16	0.214	1/8	1/16
ERC30-20	0.750	5/16	0.214	1/8	.078
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	.078
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	.078
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

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



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Pneumadyne Inc. is a manufacturer of pneumatic directional control valves, circuit control valves, solenoid valves, fittings, manifolds, and custom products. Our 2 and 3-Way valves feature closed cross-over for precise control. A complete line of 4-Way valves offers multiple actuator and porting options to fit numerous applications. Swivel input or output ports ranging from 10-32 to 1/4 Push-in ensure installation alignment. Multiple configurations of o-ring and barbed fittings feature 10-32 and 1/8 NPT ports with 1/16 through 1/8 hose barbs. Additional products include air jets, quick disconnects, couplers, and tubing.

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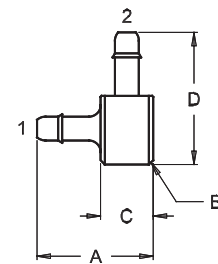


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Product Number	A	B Diam.	C	D	1 Tubing ID	2 Tubing ID
EL10	0.404	1/4	0.183	0.460	1/16	1/16
EL20	0.404	1/4	0.183	0.460	.078	.078
EL30	0.529	5/16	0.214	0.604	1/8	1/8
EL40	0.599	5/16	0.260	0.628	.170	.170
EL60	0.817	7/16	0.321	0.892	1/4	1/4
EL80	1.059	5/8	0.500	1.094	3/8	3/8

Barb-to-Barb

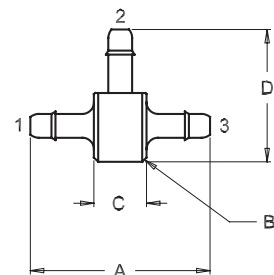
Elbows



Product 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	.078
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

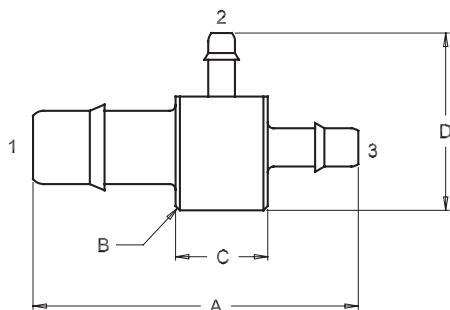
Barb-to-Barb

Tees



Barb-to-Barb


Tees- Reducing



Product 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	.078	1/16	.078
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	.078	.078
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	.078	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	.078	.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	.078
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	.078	3/16
ERT50-30-50	1.000	3/8	0.254	0.656	3/16	1/8	3/16



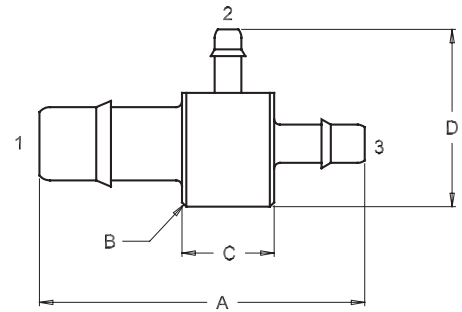
Straight connectors, tees, elbows, crosses and couplings are available in a wide variety of sizes and materials to accommodate numerous fluid handling circuits.

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


Product 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	.078	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	.078
ERT60-20-30	1.132	7/16	0.321	0.617	1/4	.078	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	.078	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

Barb-to-Barb

Tees- Reducing

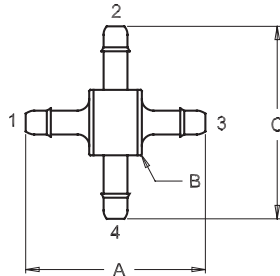


Manufacturing quality is ensured through strict process control of CNC equipment - from our "high tech" 5-axis Swiss screw machines to our basic 2-axis lathes. Employing the most sophisticated techniques available, such as 24-hour "lights out" machining, increases our ability to provide custom products 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

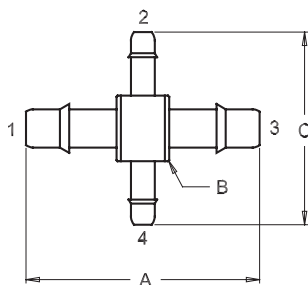
Crosses



Product 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	.078
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
EX10-303	0.625	1/4	0.670	1/16
EX20-303	0.625	1/4	0.670	.078
EX30-303	0.844	5/16	0.896	1/8
EX40-303	0.938	5/16	0.944	.170
EX50-303	1.000	3/8	1.052	3/16

Barb-to-Barb

Crosses- Reducing



Product 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	.078	1/8	.078
ERX40-20-40-20	0.892	5/16	0.708	.170	.078	.170	.078
ERX40-40-20-40	0.820	5/16	0.944	.170	.170	.078	.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

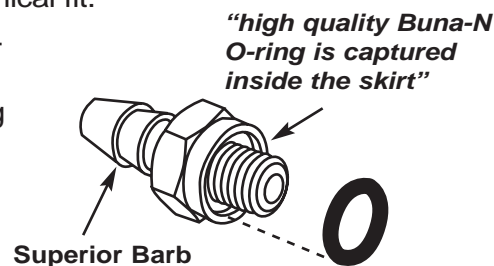
- Reliability of a metal-to-metal mechanical fit
- Captured O-ring for superior seal
- Precision machined barb design
- Electroless Nickel plated

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.



Ordering Information

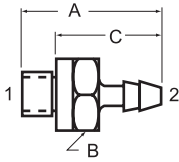
- To order standard product use part number listing.
- For 303 Stainless Steel add a -SS suffix to the part number - *lead times may apply.*
- Optional O-rings available - contact factory.
- Standard package quantities:
 - 25 pcs per bag
 - 100 pcs per box

Materials

Brass, Electroless Nickel, Stainless Steel 303, Buna-N O-Rings (standard) optional seals available -contact factory

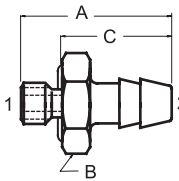
Custom designs are welcome

Straight Connector



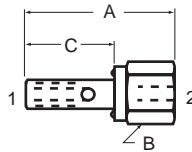
Product Number	A	B Hex	C	1	2 Tubing ID
SBF-062	.60	5/16	.44	10-32 (M)	1/16
SBF-062-LP	.49	5/16	.33	10-32 (M)	1/16
SBF-062-1/4	.59	1/4	.44	10-32 (M)	1/16
SBF-110	.58	5/16	.42	10-32 (M)	5/64
SBF-110-1/4	.58	1/4	.42	10-32 (M)	5/64
SBF-140	.66	5/16	.50	10-32 (M)	1/8
SBF-170	.72	5/16	.56	10-32 (M)	.170
SBF-170-1/4	.72	1/4	.56	10-32 (M)	.170

Straight M3



Product 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

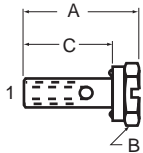


Product Number	A	B Hex	C	1	2
SFD-10	.85	5/16	.51	10-32 (M)	10-32 (F)

Stud

Product Number	A	B Hex	C	1
STD-10	.67	5/16	.51	10-32 (M)

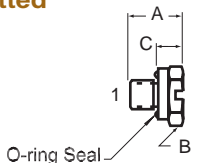
Slotted



Plug

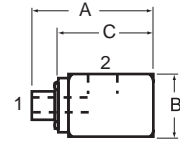
Product Number	A	B Hex	C	1
SPG-10	.31	5/16	.16	10-32 (M)
SPG-10-1/4	.31	1/4	.16	10-32 (M)

Slotted

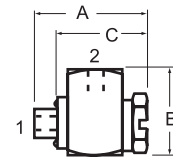


All O-ring fittings are available in 303 Stainless Steel; add a -SS suffix to the standard part number

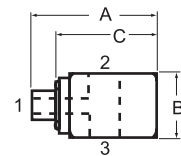
Product Number	A	B Square	C	1	2	Elbow Fixed
SBF-32-1	.61	3/8	.45	10-32 (M)	10-32 (F)	



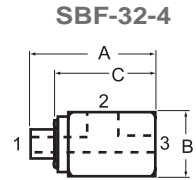
Product Number	A	B	C	1	2	Hex	Elbow Adjustable
STL-10	.67	.50	.54	10-32 (M)	10-32 (F)	5/16	
STL-10-SS	.67	.50	.54	10-32 (M)	10-32 (F)	5/16	



Product 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)	

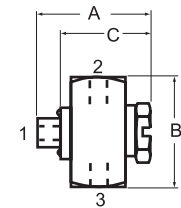


SBF-32-2

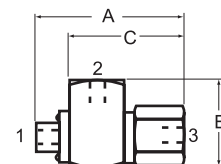


SBF-32-4

Product 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	

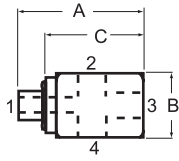


Product Number	A	B	C	1	2, 3	Hex	Run Tee Adjustable
SFL-10	.85	.50	.72	10-32 (M)	10-32 (F)	5/16	



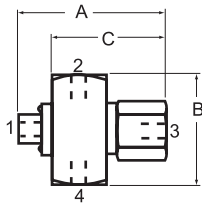
All O-ring fittings are available in 303 Stainless Steel; add a -SS suffix to the standard part number

Cross Fixed



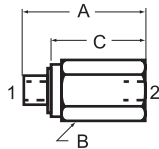
Product Number	A	B Square	C	1	2,3,4
SBF-32-3	.72	3/8	.57	10-32 (M)	10-32 (F)

Cross Adjustable



Product Number	A	B	C	1	2, 3,4	Hex
SFT-10	.85	.63	.72	10-32 (M)	10-32 (F)	5/16

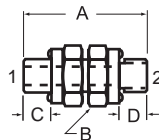
Adapter



Product Number	A	B Hex	C	1	2
SSP-10	.72	5/16	.56	10-32 (M)	10-32 (F)

Nipple

Universal Adjustable



Product 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

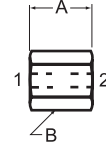
All dimensions and specifications are subject to change without notice



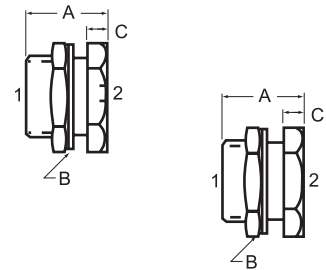
All O-ring fittings are available in 303 Stainless Steel; add a -SS suffix to the standard part number

Product 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

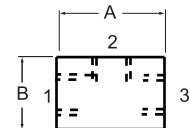


Product Number	A	B	C	1	2	Bulkhead
SBH-10	.45	9/16	.11	15/32-32 x10-32 (F)	10-32 (F)	
SBH-125	.45	9/16	.11	15/32-32 x10-32 (F)	1/8 (F)	



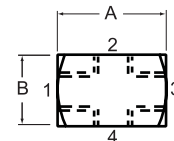
Product Number	A	B Square	1	2	3	Tee
02-3	.562	3/8	10-32 (F)	10-32 (F)	10-32(F)	Female

*Standard product is brass, contact factory for Electroless Nickel finish



Product 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

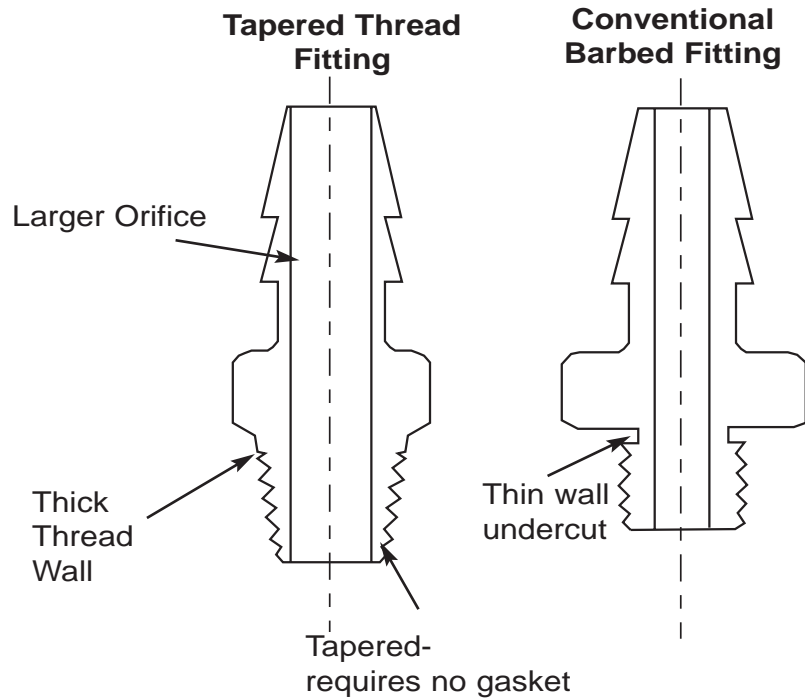
Features

- 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

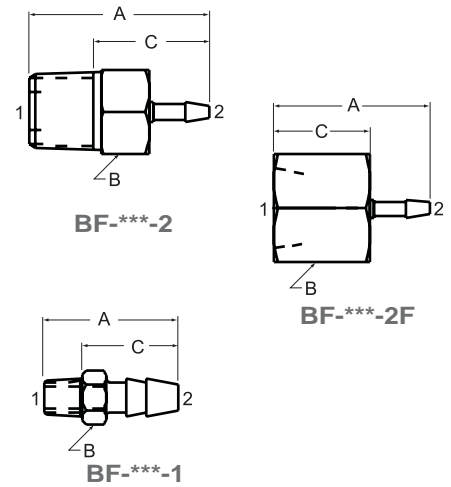
Custom Designs are Welcome

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

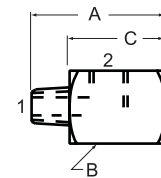
Product Number	A	B Hex	C	1	2 Tubing ID
BF-062	.57	1/4	.370	10-32 (M)	1/16
BF-062-2	.94	7/16	.565	1/8 (M)	1/16
BF-062-2F	.75	1/2	.815	1/8 (F)	1/16
BF-110-2	.88	7/16	.510	1/8 (M)	5/64
BF-140	.70	1/4	.500	10-32 (M)	1/8
BF-170-1	.70	1/4	.500	10-32 (M)	.170
BF-170-2	.90	7/16	.530	1/8 (M)	.170
BF-170-2F	.88	1/2	.875	1/8 (F)	.170

Straight Connector



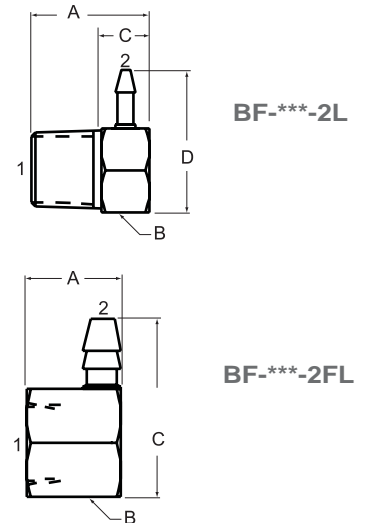
Product Number	A	B Square	C	1	2
32-1	.70	3/8	.50	10-32 (M)	10-32 (F)

Elbow Fixed



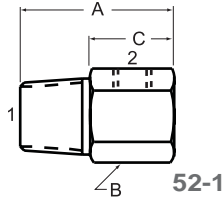
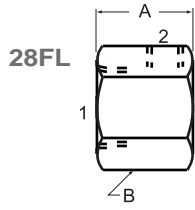
Product Number	A	B Hex	C	D	1	2 Tubing ID
BF-062-2FL	.50	9/16	.50	-	1/8 (F)	1/16
BF-062-2L	.62	7/16	.25	.752	1/8 (M)	1/16
BF-110-2L	.62	7/16	.25	.936	1/8 (M)	5/64
BF-140-2L	.625	7/16	.25	.815	1/8 (M)	1/8
BF-170-2FL	.50	9/16	.50	-	1/8 (F)	.170
BF-170-2L	.62	7/16	.25	.938	1/8 (M)	.170

Elbow Tapered to Barb



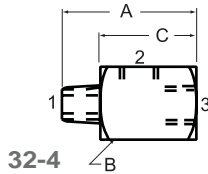
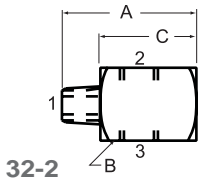
All dimensions and specifications are subject to change without notice

Elbow Reducing



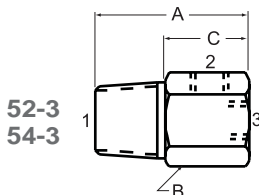
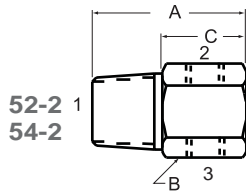
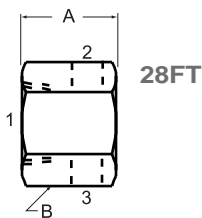
Product Number	A	B Hex	C	1	2
28FL	.50	9/16	-	1/8 (F)	10-32 (F)
29L	.85	11/16	.48	3/8 (M)	10-32 (F)
52-1	.81	7/16	.44	1/8 (M)	10-32 (F)
54-1	.87	9/16	.37	1/4 (M)	10-32 (F)

Tee



Product 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

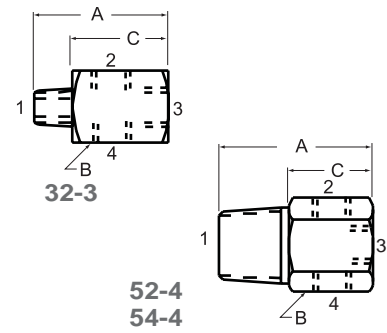


Product Number	A	B Hex	C	1	2	3
28FT	.50	9/16	-	1/8 (F)	10-32 (F)	10-32 (F)
52-2	.81	7/16	.44	1/8 (M)	10-32 (F)	10-32 (F)
52-3	.90	7/16	.53	1/8 (M)	10-32 (F)	10-32 (F)
54-2	.87	9/16	.37	1/4 (M)	10-32 (F)	10-32 (F)
54-3	.87	9/16	.37	1/4 (M)	10-32 (F)	10-32 (F)

All dimensions and specifications are subject to change without notice

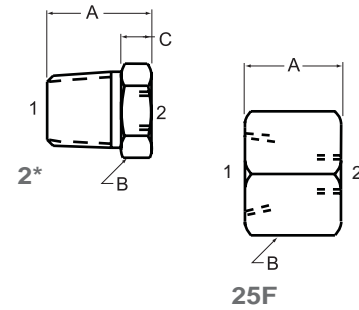
Product Number	A	B	C	1	2, 3, 4
32-3	.70	3/8 Square	.50	10-32 (M)	10-32 (F)
52-4	.90	7/16 Hex	.53	1/8 (M)	10-32 (F)
54-4	.87	9/16 Hex	.37	1/4 (M)	10-32 (F)

Crosses



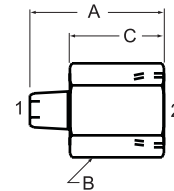
Product Number	A	B Hex	C	1	2
25	.53	7/16	.16	1/8 (M)	10-32 (F)
25F	.50	7/16	.50	1/8 (F)	10-32 (F)
26	.68	9/16	.18	1/4 (M)	10-32 (F)
27	.41	3/8	.14	1/16 (M)	10-32 (F)

Reducer Bushing



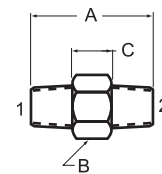
Product Number	A	B Hex	C	1	2
34	.70	7/16	.50	10-32 (M)	1/8 (F)
34A	.75	7/16	.50	1/16 (M)	1/8 (F)

Adapters



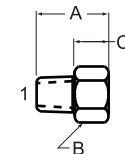
Product Number	A	B Hex	C	1, 2
33	.56	1/4	.16	10-32 (M)

Nipple



Product Number	A	B Hex	C	1
30	.37	1/4	.17	10-32 (M)

Plug



All dimensions and specifications are subject to change without notice

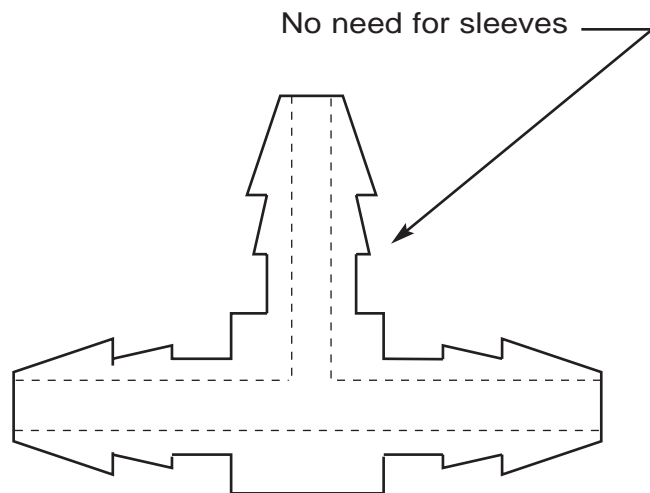
Features

- 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.

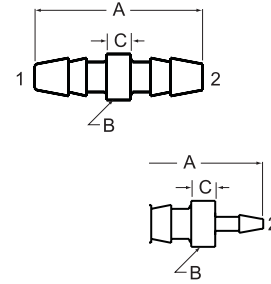
- Please refer to [tubing recommendations](#), [performance data](#) and [Ordering Information](#).

Ordering Information

- To order standard product use part number listing.
- Standard package quantities:
 - 25 pcs per bag
 - 100 pcs per box

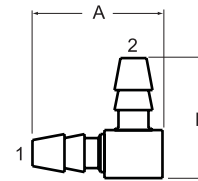
Product Number	A	B Diam.	C	1 Tubing ID	2 Tubing ID
SBF-1616	.63	.125	.125	1/16	1/16
SBF-1810	.73	.25	.125	.170	5/64
SBF-1816	.75	.25	.125	.170	1/16
SBF-1818	.88	.25	.125	.170	.170

Barb-to-Barb
Couplings



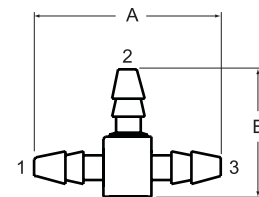
Product Number	A	B	1 Tubing ID	2 Tubing ID
SBF-18L	.78	.63	.170	.170

Barb-to-Barb
Elbow



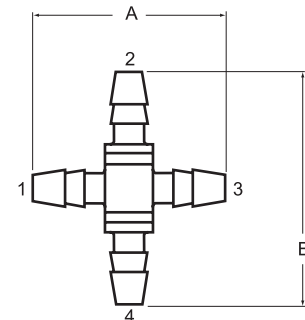
Product Number	A	B	1 Tubing ID	2 Tubing ID	3 Tubing ID
SBF-10T	.72	.78	5/64	5/64	5/64
SBF-14T	.876	.721	1/8	1/8	1/8
SBF-1410T	.87	.64	1/8	5/64	1/8
SBF-16T	.79	.47	1/16	1/16	1/16
SBF-18T	1.00	.78	.170	.170	.170
SBF-1810T	1.00	.64	.170	5/64	.170
SBF-1816T	1.00	.66	.170	1/16	.170

Barb-to-Barb
Tee



Product 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

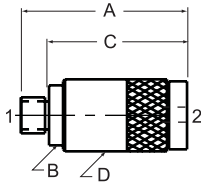
- Push-to-connect
- Precision machined
- Acetal release button
- Captured o-ring seal (threaded ONLY)
- Electroless Nickel plated



Push-to-Connect Straight Connector Fittings

Push-to-Connect style fittings ease tubing connection and disconnection without the use of tools. Threaded and cartridge styles are available with a red release button as standard (contact factory for optional colors). Push-to-Connect fittings are recommended for use with 95A Durometer Polyurethane tubing.

Push-to-Connect



Product 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

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



Features

- Push-to-connect
- Precision machined
- Acetal release button
- Captured o-ring seal
- Low profile
- Screwdriver slot
- Electroless Nickel plated

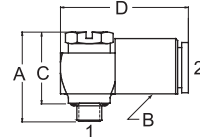
Low profile Push-to-Connect Elbows and Tees are ideal in limited space applications and feature a screwdriver slot to aid in tubing alignment. Our captured o-ring design was incorporated to provide the reliability of a metal-to-metal mechanical fit and ensure a superior seal. Pneumadyne’s push-to-connect fittings are recommended for use with 95A Durometer Polyurethane tubing.

Push-to-Connect Elbow & Tee Fittings

Product Number	A	B Diam.	C	D	1	2 Tube OD	Hex
SFL-125PI	.67	.43	.53	.98	10-32 (M)	1/8	5/16
SFL-156PI	.67	.43	.53	.98	10-32 (M)	5/32	5/16

Push-to-Connect

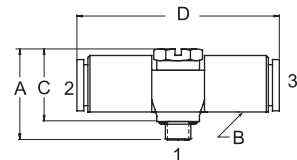
Elbow



Product Number	A	B Diam.	C	D	1	2, 3 Tube OD	Hex
SFT-125PI	.67	.43	.53	1.54	10-32 (M)	1/8	5/16
SFT-156PI	.67	.43	.53	1.54	10-32 (M)	5/32	5/16

Push-to-Connect

Tee



All dimensions and specifications are subject to change without notice

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

Materials

Brass, Electroless Nickel Plating, Acetal, Buna-N Seals



All dimensions and specifications are subject to change without notice

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

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

Standard Double Barb

Barb Size	OD/ID	C _v	Flow Rate (scfm)	
			50 psi	125 psi
062	.100/ .046	0.06	1.8	4.0
110	.140/ .078	0.20	5.2	12.0
140	.172/ .078	0.20	5.2	12.0
170 O-ring	.200/ .093	0.28	7.3	16.5
170 Tapered	.200/ .108	0.40	10.5	23.5

Pneu-Edge®

Barb Size	OD/ID	C _v	Flow Rate (scfm)	
			50 psi	125 psi
10	.083/ .055	0.08	2.4	5.5
20	.093/ .059	0.09	2.8	6.8
25	.104/ .081	0.18	5.0	12.0
30	.133/ .089	0.24	6.0	14.5
35	.160/ .104	0.31	7.8	19.0
40	.188/ .125	0.48	11.5	27.0
50	.204/ .140	0.60	14.0	33.0
60	.255/ .177	1.07	22.0	52.0
70	.320/ .250	1.62	35.0	82.0
80	.388/ .280	3.40	59.0	140.0

- All Flow Rates are approximate

Tubing Recommendation Chart

Barb	Tubing: OD/ID
062	1/8 x 1/16 Polyurethane
110	5/32 x 5/64 Polyurethane or 5/32 x 7/64 Nylon
140	1/4 x 1/8 Polyurethane or 3/16 x 9/64 Nylon
170	1/4 x .170 Polyurethane or 1/4 x .170 Polyethylene

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.



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

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.

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)

Pneumadyne has been an innovator in the design and manufacture of pneumatic and hydraulic manifolds since 1976

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.

Materials

Brass
Aluminum/ Black Anodize
303 Stainless Steel

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.

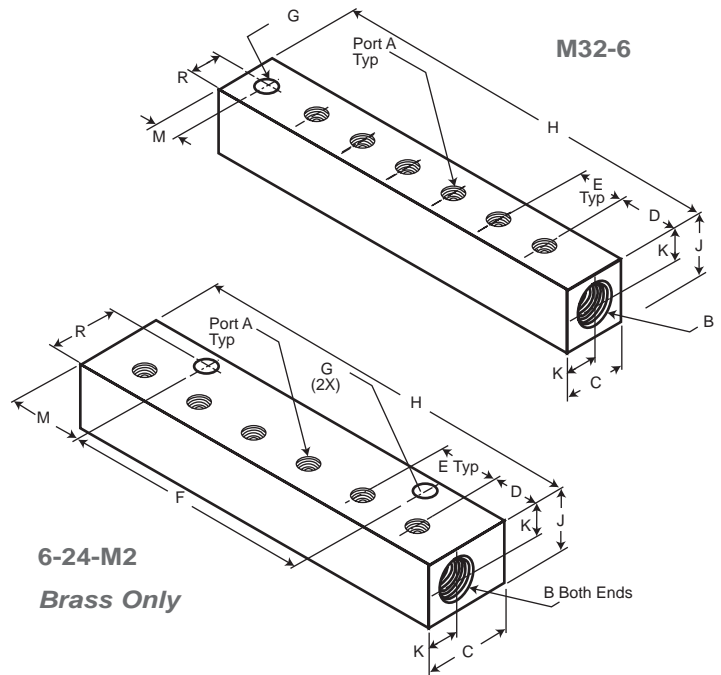


- 10-32 output ports
- 3 Porting configurations
- Convenient junction point
- Multiple branches
- One input

Inline Manifolds

Port Options

- Input**
- 1/8 NPT (F)
- Output**
- 10-32 UNF(F)

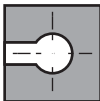


Port Configuration

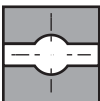
Cross Section

Part Number

M32-*



MS32-*



MT32-*



Product Information

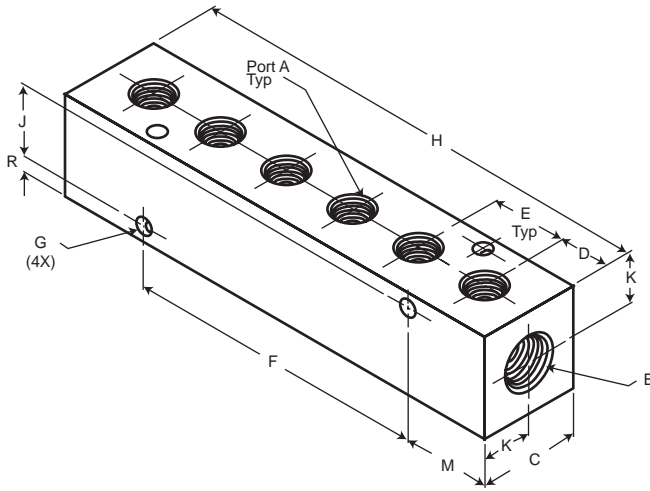
1/8 NPT (F) Input x 10-32 (F) Output

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	.87	.43	.62	2.50	.20	4.00	.62	.31	.25	.31
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

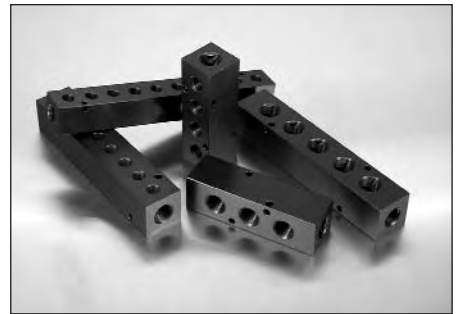
All measurements are given in inches unless otherwise specified.

- 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	A	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	A	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

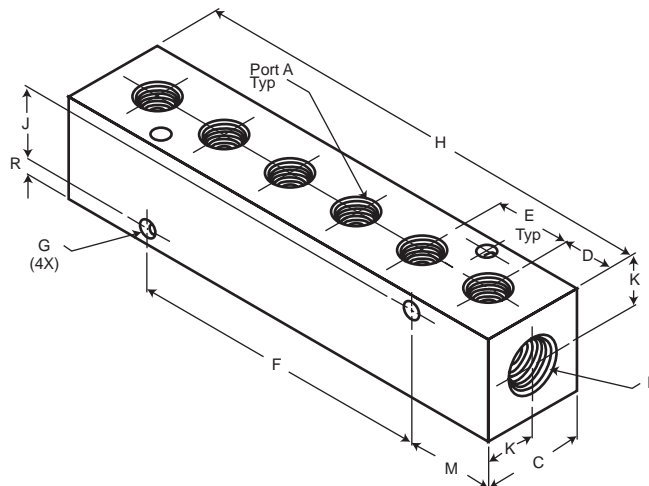
Port Options

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



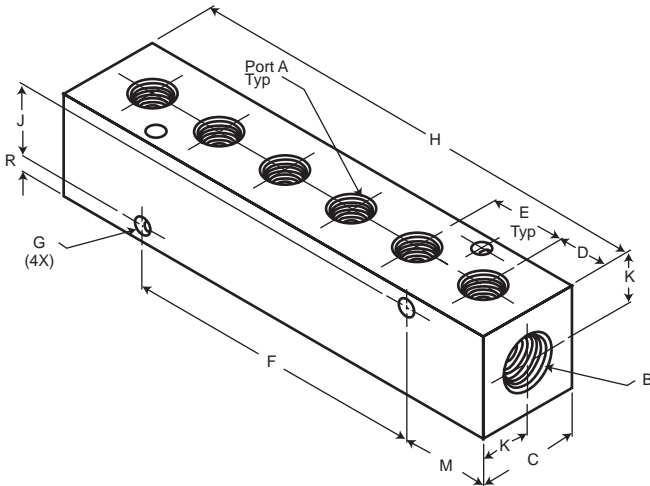
System 11 is a unique valve consolidation method using custom manifolds that house components for use only on System 11 manifolds
[\(Click for additional information\)](#)

● 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)

All dimensions and specifications are subject to change without notice

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

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

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

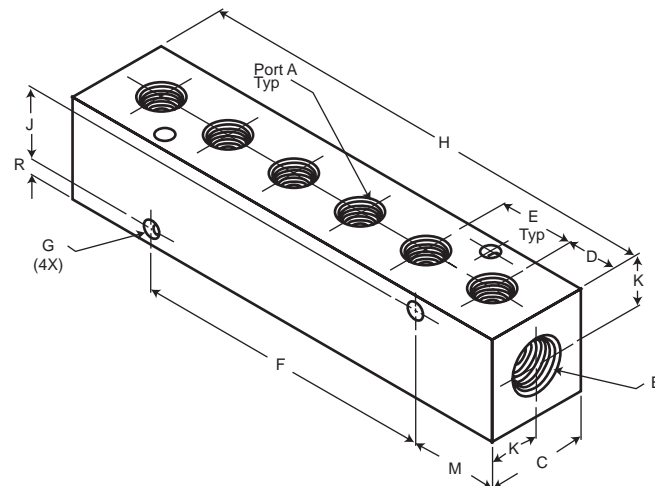
Port Options

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

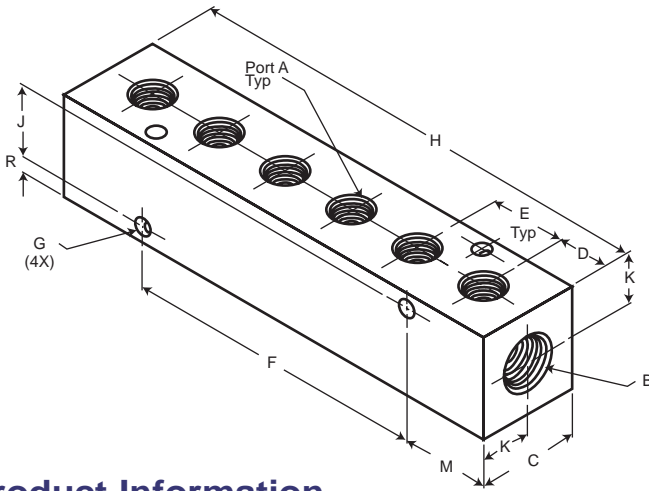
Part Number	*	NPT		C	D	E	F	G	H	J	K	M	R
		A	B										
M35-375-2	2	3/8	3/4	1.50	1.75	1.13	2.13	.20	4.63	1.14	.75	1.25	.18
M35-375-3	3	3/8	3/4	1.50	1.75	1.13	3.25	.20	5.75	1.14	.75	1.25	.18
M35-375-4	4	3/8	3/4	1.50	1.75	1.13	4.38	.20	6.88	1.14	.75	1.25	.18
M35-375-5	5	3/8	3/4	1.50	1.75	1.13	5.50	.20	8.00	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-Brass & 303 Stainless Steel



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

BRASS

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-BRS	2	1/8	1/4	1.00	.50	.75	N/A	.17	1.75	.70	.50	.88	.15
M10-125-4-BRS	4	1/8	1/4	1.00	.50	.75	1.50	.17	3.25	.70	.50	.88	.15
M10-125-6-BRS	6	1/8	1/4	1.00	.50	.75	3.00	.17	4.75	.70	.50	.88	.15
M10-125-8-BRS	8	1/8	1/4	1.00	.50	.75	4.50	.17	6.25	.70	.50	.88	.15
M10-125-10-BRS	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

M20-250-2-BRS	2	1/4	3/8	1.25	.63	.88	N/A	.20	2.13	.89	.63	1.06	.18
M20-250-4-BRS	4	1/4	3/8	1.25	.63	.88	1.75	.20	3.88	.89	.63	1.06	.18
M20-250-6-BRS	6	1/4	3/8	1.25	.63	.88	3.50	.20	5.63	.89	.63	1.06	.18
M20-250-8-BRS	8	1/4	3/8	1.25	.63	.88	5.25	.20	7.38	.89	.63	1.06	.18
M20-250-10-BRS	10	1/4	3/8	1.25	.63	.88	7.00	.20	9.13	.89	.63	1.06	.18

303 STAINLESS STEEL

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-SS	2	1/8	1/4	1.00	.50	.75	N/A	.17	1.75	.70	.50	.88	.15
M10-125-4-SS	4	1/8	1/4	1.00	.50	.75	1.50	.17	3.25	.70	.50	.88	.15
M10-125-6-SS	6	1/8	1/4	1.00	.50	.75	3.00	.17	4.75	.70	.50	.88	.15
M10-125-8-SS	8	1/8	1/4	1.00	.50	.75	4.50	.17	6.25	.70	.50	.88	.15
M10-125-10-SS	10	1/8	1/4	1.00	.50	.75	6.00	.17	7.75	.70	.50	.88	.15

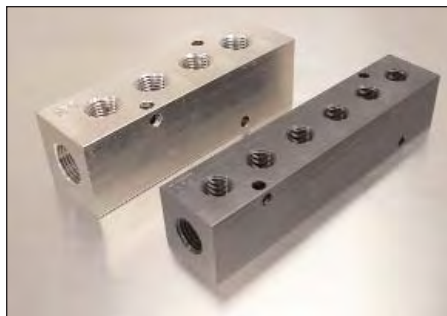
3/8 NPT (F) Input x 1/4 NPT (F) Output

M20-250-2-SS	2	1/4	3/8	1.25	.63	.88	N/A	.20	2.13	.89	.63	1.06	.18
M20-250-4-SS	4	1/4	3/8	1.25	.63	.88	1.75	.20	3.88	.89	.63	1.06	.18
M20-250-6-SS	6	1/4	3/8	1.25	.63	.88	3.50	.20	5.63	.89	.63	1.06	.18
M20-250-8-SS	8	1/4	3/8	1.25	.63	.88	5.25	.20	7.38	.89	.63	1.06	.18
M20-250-10-SS	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.



- Output port spacing is 1.5" center-to-center
- 2 to 10 stations
- Mounting versatility

Inline Manifolds- 1.5" Spacing

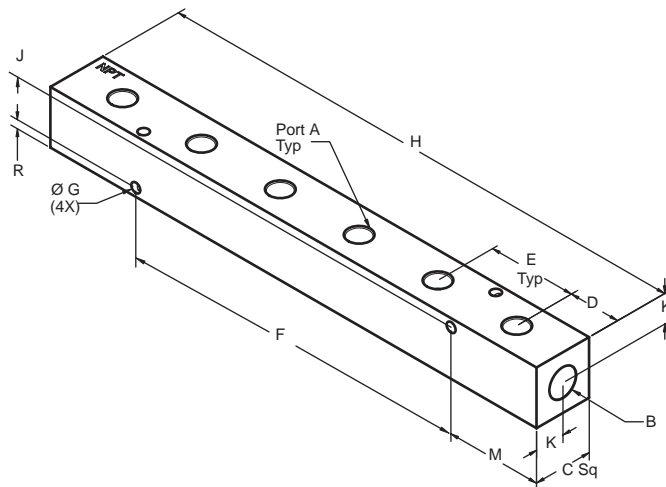
Port Options

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	1.75	.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	1.75	.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 9001:2000
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	1.75	.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	1.75	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	1.75	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

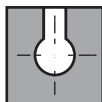


- Output ports at 90° for plumbing convenience
- 2 to 10 Stations
- Two input ports
- Aluminum with black anodize for corrosion and wear resistance

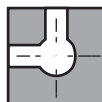
Port Configuration

Cross Section

Inline Manifold



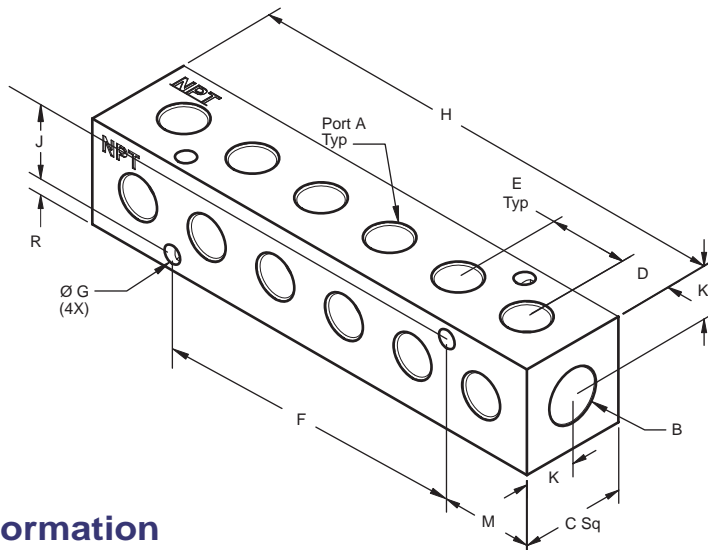
90° Manifold



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	1.75	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	1.75	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

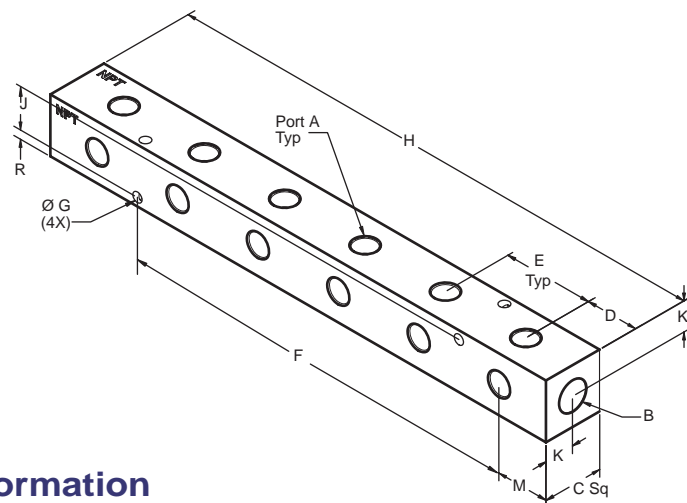
Port Options

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	1.75	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	1.75	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	1.75	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

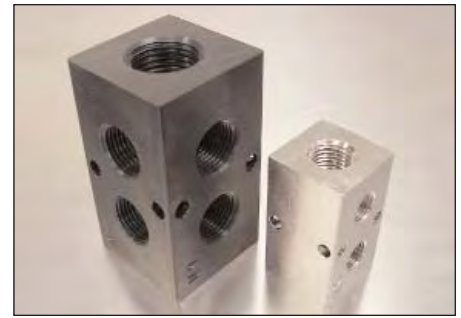
1/2 NPT (F) Input x 1/4 NPT (F) Output

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	1.75	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	1.75	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 allow for plumbing convenience and 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.

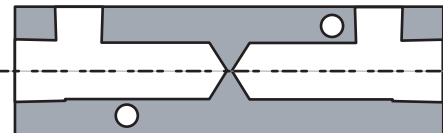


- Two separate manifolds in one block
- Two independent flow paths (ie: pressure one side vacuum on the other)
- Aluminum with black anodizing for corrosion resistance and appearance
- Mounting versatility

Port Configuration

Cross Section
Part Number

DA*-*



A variety of custom manifolds have been designed by Pneumadyne.

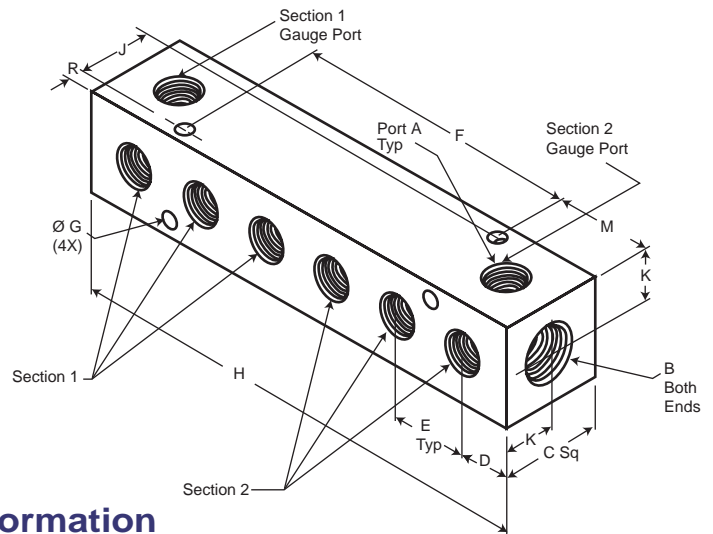
Features include:

- 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

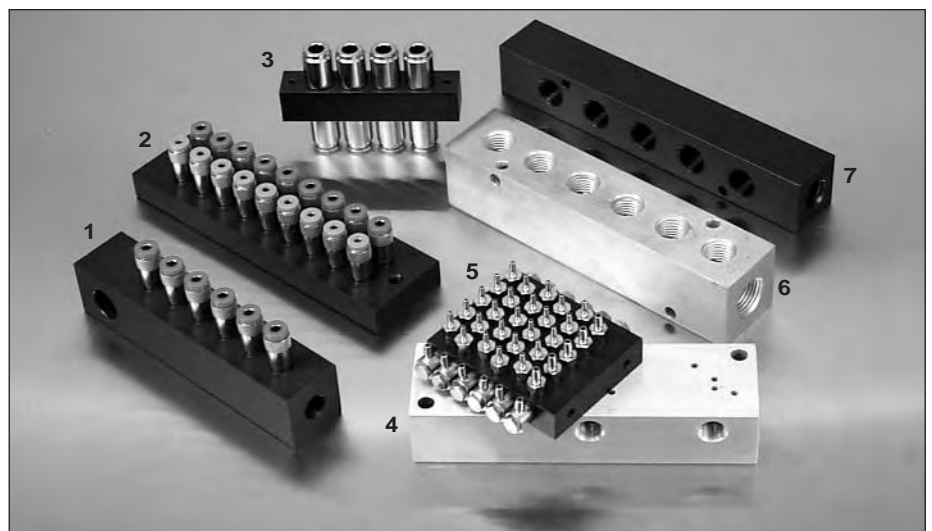
Part Number	Ports per Section	A	B	C	D	E	F	G	H	J	K	M	R
DA10-125-22	2	1/8	1/4	1.00	.50	.75	1.50	.17	3.25	.70	.50	.87	.15
DA10-125-33	3	1/8	1/4	1.00	.50	.75	3.00	.17	4.75	.70	.50	.87	.15
DA10-125-44	4	1/8	1/4	1.00	.50	.75	4.50	.17	6.25	.70	.50	.87	.15
DA10-125-55	5	1/8	1/4	1.00	.50	.75	6.00	.17	7.75	.70	.50	.87	.15

3/8 NPT (F) Input x 1/4 NPT (F) Output

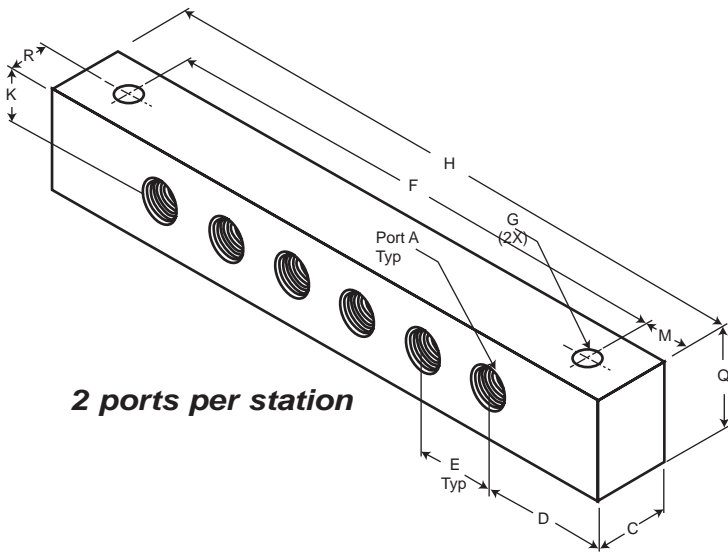
DA20-250-22	2	1/4	3/8	1.25	.62	.87	1.75	.20	3.87	.89	.62	1.06	.18
DA20-250-33	3	1/4	3/8	1.25	.62	.87	3.50	.20	5.62	.89	.62	1.06	.18
DA20-250-44	4	1/4	3/8	1.25	.62	.87	5.25	.20	7.37	.89	.62	1.06	.18
DA20-250-55	5	1/4	3/8	1.25	.62	.87	7.00	.20	9.12	.89	.62	1.06	.18

- Measurements in inches

Custom Products

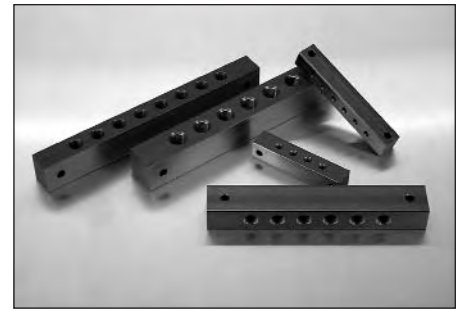


Junction Blocks™



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

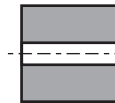
● Measurements in inches

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.

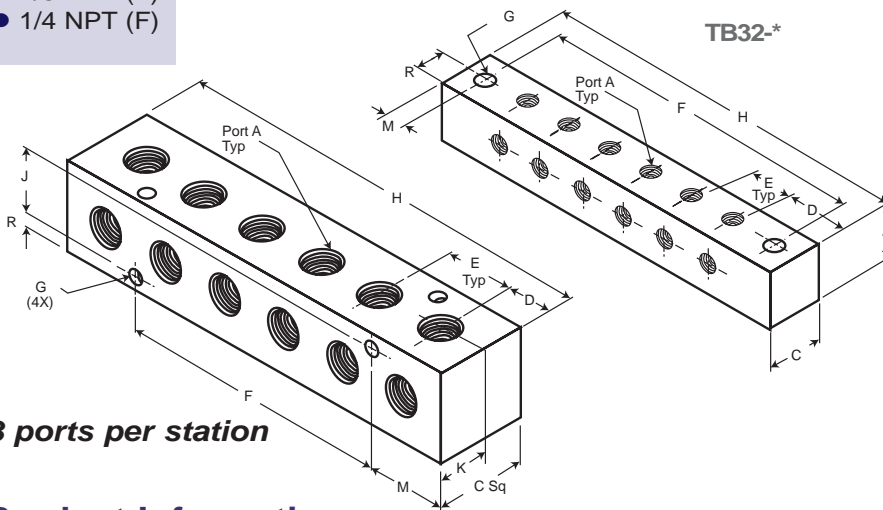


- Tee configuration
- Three available port options 10-32, 1/8 NPT (F), 1/4 NPT (F)
- 4 to 10 stations
- Mounting versatility
- Aluminum with black anodizing for corrosion resistance and appearance

Terminal Blocks™

Port Options

- 10-32 UNF(F)
- 1/8 NPT (F)
- 1/4 NPT (F)



3 ports per station

Product Information

Part Number	No. Stations	A	C	D	E	F	G	H	J	K	M	R
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
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

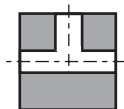
● Measurements in inches

Port Configuration

Cross Section

Part Number

TB*-*



Bookmark
pneumadyne.com
 for standard and new
 product information and
 useful links

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



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	0,2
PU4-250*-L	1/4 X 1/8	50' box	85A	150	
PU6-125*-L	1/8 X 1/16	50' box	85A	125	0,2
PU6-250*-L	1/4 X 1/8	50' box	85A	150	

* 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.

● See **Product Number Diagram** for Color Code information

Product Group	OD/ID	Pkg	Working Pressure psi @ 75° F	Standard Colors*
PUMC4-125-M		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		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		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		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		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
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

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.

- F= 95A PB= 90A R= 70A

Transparent

- 25= Red
- 26= Green
- 27= Blue
- 28= Yellow
- 29= Orange
- 32= Purple

● 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

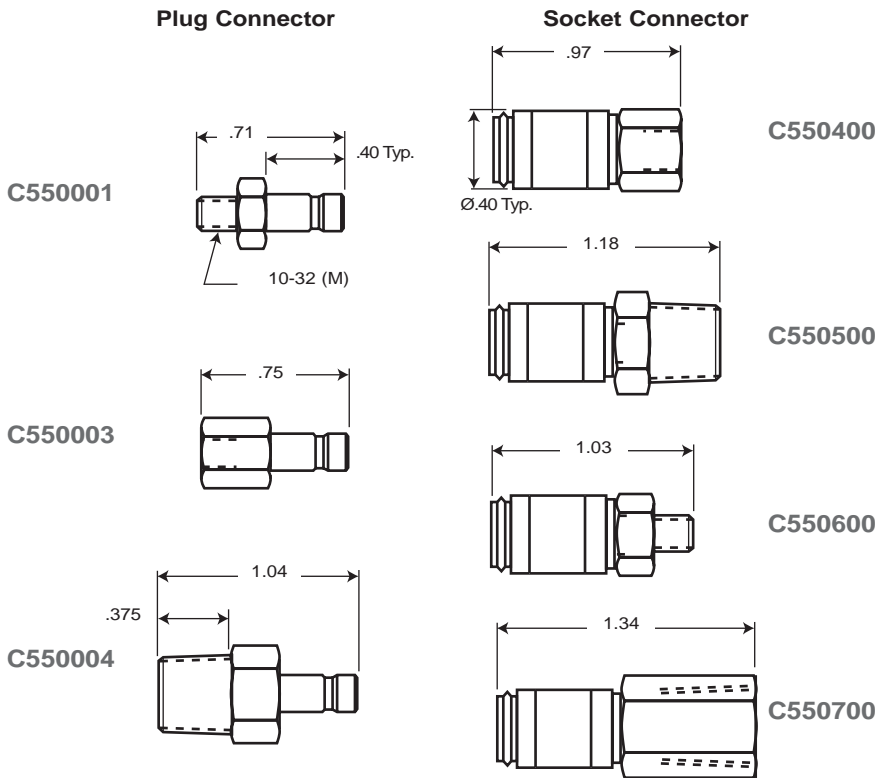
Plug Connectors	Socket Connectors
10-32 (M)	10-32 (M)
10-32 (F)	10-32 (F)
1/8 NPT (M)	1/8 NPT (F)
	1/8 NPT (M)

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

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

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.

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.

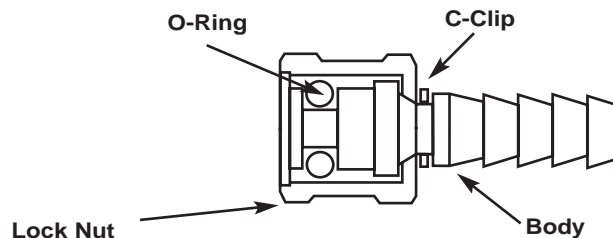
The compact **straight-thru socket connector** is used on systems where unrestricted flow is required. When coupled with the plug connector the overall length is only 5/8"- ideal for limited space applications.

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.

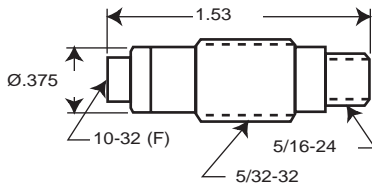
The **bulkhead socket connector** with shut-off valve provides the durability and convenience often required for use on test equipment. This miniature coupler (1.53 OAL) can be mounted on a control panel via the 15/32-32 thread, two (2) jam nuts and a lock washer are provided to secure the component in place.



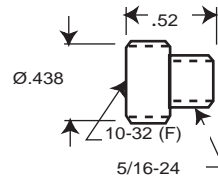
Lock Nut
Protects O-ring from damage and contamination while disconnected.

Micro Coupler

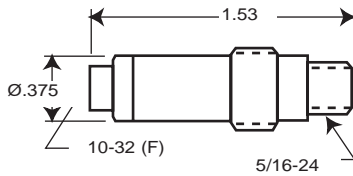
Socket Connectors



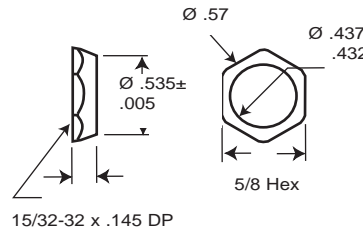
PMCBH-*
Valved Bulkhead Socket



PMCM-*
Straight-thru Socket

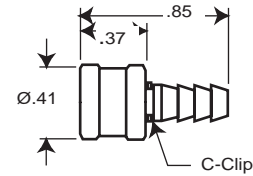


PMCIL-*
Valved Inline Socket

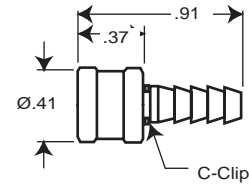


DP-22
DP-11

Plug Connectors



PMC-110



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

- 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](#)

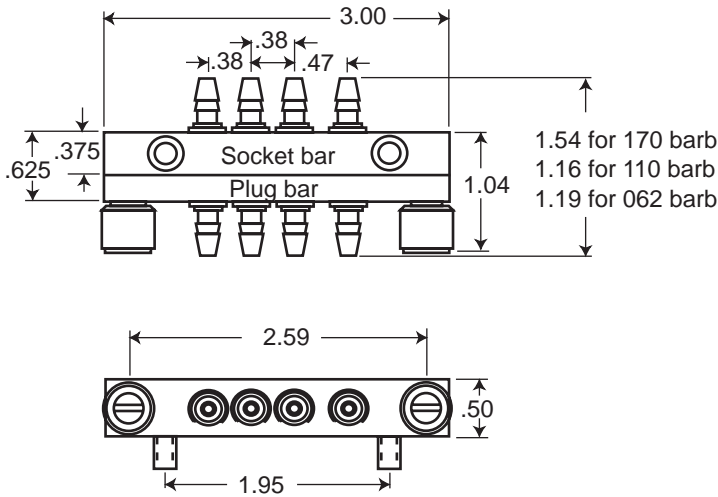
When additional lines are required, more connectors can be stacked to accommodate the additional tubing lines.

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

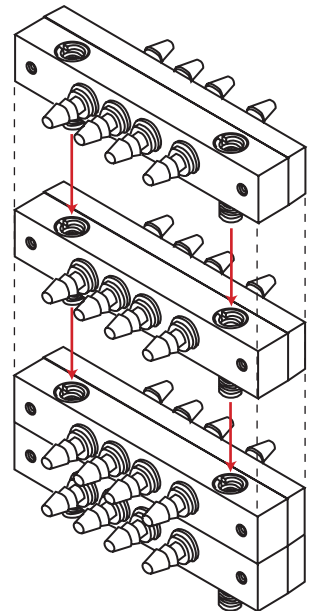
The plug barb assembly and socket assembly are sold separately and are available with all barbs of one size. Separate components of the Ribbon Tube Connector are also available for applications requiring assorted barb sizes.

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)

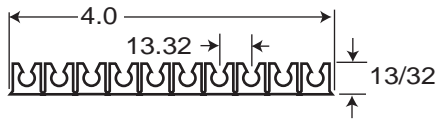
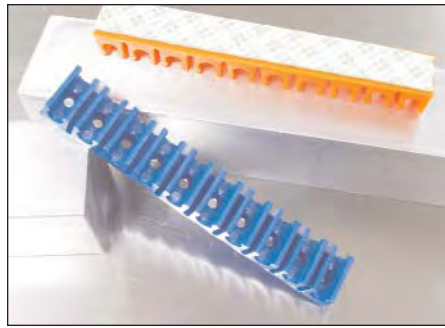
Retained in a recessed area near the end of the plug is a Buna N O-ring. Often a face seal requires placement and realignment after each connection and disconnection, this design keeps the O-ring in place. This high quality seal ensures a leakproof fit between the plug and the socket.



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 Racks

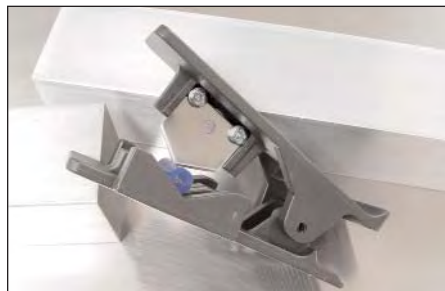


Product Group	Tubing OD	Description	Standard Colors
MTR-250-10*	1/4	non-adhesive	2, 3, 4, 5, 6, 7, 8 & 9
MTR-250-11*	1/4	adhesive	2, 3, 4, 5, 6, 7, 8 & 9
MTR-187-10*	3/16	non-adhesive	2
MTR-187-11*	3/16	adhesive	2
MTR-156-10*	5/32	non-adhesive	2
MTR-156-11*	5/32	adhesive	2

* Please refer to [Color Code information](#)

Tube racks are available with 10 channels. The molded design makes them easy to customize, simply hand separate down to single holders. Select tube rack with adhesive fastener or use No. 4 machine screws for mounting.

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

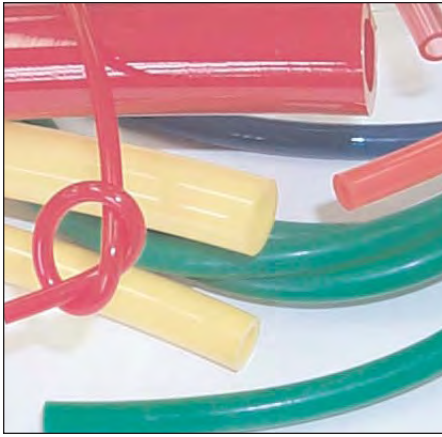
Chemical Resistance Information (Tubing Information)

	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 Napthalene	-	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	-	-	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



Polyurethane tubing characteristics include minimal water absorption, high flexibility and opaque color pigments

Durometer Defined

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.

Working Pressure Information

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:

$$\frac{450 \text{ psi @ 75°F}}{3 \text{ to 1 safety factor}} = 150 \text{ psi Working pressure}$$

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 an 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.

Warranty

Pneumadyne guarantees each product against defects in material and workmanship for 90 days 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 products fail 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 and 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 ANSIB40.1-1974 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

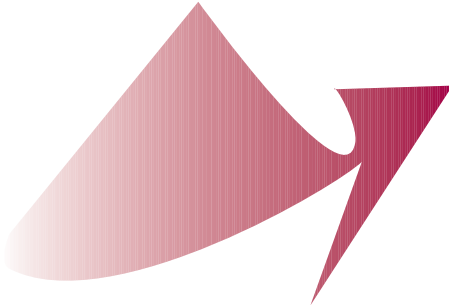
Pneumadyne strongly advises that all installation and repair of components be performed by FPS certified personnel. The installer is cautioned to observe all electrical, mechanical and other codes applicable to the installation and operation of these products.

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.



Pneumadyne manufactures a full line of miniature pneumatic components—contact our customer service department or the authorized Pneumadyne distributor in your area.



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Custom Designed Products
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.

02-3	A0-31-2	A11-31-47	AP-2	C021703
02-4	A0-31-3	A11-31-64	AP45-1/8-DP	C021705
22	A0-31-4	A11-31-66	AP45-1/8-SR	C021707
25	A0-31-5	A11-31-67	AP45-100-DP	C021721
25F	A0-31-6	A11-31-74	AP45-100-SR	C021723
26	A0-31-7	A11-31-76	APLP-1	C021725
27	A11-20-14	A11-31-77	BA-1	C021727
28FL	A11-20-16	A3-30-1	BF-062	C030101
28FT	A11-20-17	A3-30-2	BF-062-2	C030103
29L	A11-20-41	A3-30-3	BF-062-2F	C030105
30	A11-20-44	A3-30-4	BF-062-2FL	C030107
32-1	A11-20-46	A3-30-5	BF-062-2L	C030109
32-2	A11-20-47	A3-30-6	BF-110-2	C030121
32-3	A11-20-64	A3-30-7	BF-110-2L	C030123
32-4	A11-20-66	A4C-1/8-DP	BF-140	C030125
33	A11-20-67	A4C-1/8-PK	BF-170-1	C030127
34	A11-20-74	A4C-1/8-SR	BF-170-2	C030201
34A	A11-20-76	A4C-100-DP	BF-170-2F	C030203
52-1	A11-20-77	A4C-100-PK	BF-170-2FL	C030205
52-2	A11-21-14	A4C-100-SR	BF-170-2L	C030207
52-3	A11-21-16	A4C-125-DP	BFC-32	C030209
52-4	A11-21-17	A4C-125-PK	BFC-32P	C030210
54-1	A11-21-44	A4C-125-SR	BFCR-32	C030219
54-2	A11-21-46	A4C-157-DP	BFCR-32P	C030221
54-3	A11-21-47	A4C-157-PK	C021401	C030223
54-4	A11-21-64	A4C-157-SR	C021403	C030225
6-24-M2	A11-21-66	A4C-250-DP	C021405	C030227
A0-20-1	A11-21-67	A4C-250-PK	C021407	C030301
A0-20-2	A11-21-74	A4C-250-SR	C021421	C030303
A0-20-3	A11-21-76	A4N-100-DP	C021423	C030305
A0-20-4	A11-21-77	A4N-100-PK	C021425	C030307
A0-20-5	A11-21-78	A4N-100-SR	C021427	C030310
A0-20-6	A11-30-14	AB-1	C021501	C030321
A0-20-7	A11-30-16	AB-2	C021503	C030323
A0-21-1	A11-30-17	AJB-1	C021505	C030325
A0-21-2	A11-30-44	AJB-1.5	C021507	C030327
A0-21-3	A11-30-46	AJB-2	C021521	C030401
A0-21-4	A11-30-47	AJH	C021523	C030403
A0-21-5	A11-30-64	AJK-AN	C021525	C030405
A0-21-6	A11-30-66	AJK-HAN	C021527	C030407
A0-21-7	A11-30-67	AM45-1/8-SR	C021601	C030421
A0-30-1	A11-30-74	AM45-100-SR	C021603	C030423
A0-30-2	A11-30-76	AN-1	C021605	C030425
A0-30-3	A11-30-77	AN-2	C021607	C030427
A0-30-4	A11-31-14	AN-3	C021621	C030501
A0-30-5	A11-31-16	AN-4	C021623	C030503
A0-30-6	A11-31-17	AN-5	C021625	C030505
A0-30-7	A11-31-44	AN-6	C021627	C030507
A0-31-1	A11-31-46	AP-1	C021701	C030509

C030510	C032103	C040401	C042503	CA-4
C030521	C032105	C040403	C042601	CCV-44-4
C030523	C032107	C040405	C042602	CCV-F1-1
C030525	C032121	C040407	C042603	CCV-F1-2
C030527	C032123	C040421	C042801	CCV-F1-3
C030601	C032125	C040423	C042802	CCV-F1-4
C030603	C032127	C040425	C042803	DA10-125-22
C030605	C032201	C040427	C042901	DA10-125-33
C030607	C032203	C040501	C042903	DA10-125-44
C030610	C032205	C040503	C050101	DA10-125-55
C030621	C032207	C040505	C050102	DA20-250-22
C030623	C032221	C040507	C050104	DA20-250-33
C030625	C032223	C040521	C050201	DA20-250-44
C030627	C032225	C040523	C050202	DA20-250-55
C030701	C032227	C040525	C050204	DP-11
C030703	C032301	C040527	C050205	DP-22
C030705	C032303	C040601	C050206	E1/8-1/4
C030707	C032305	C040603	C050210	E10-1/8
C030721	C032307	C040605	C050301	EA-LB10
C030723	C032310	C040621	C050302	EA-LB10-SLOT
C030725	C032321	C040623	C050401	EA-LB20
C030727	C032323	C040625	C050501	EA-LB20-SLOT
C030901	C032325	C040701	C050502	EA-LB25
C030903	C032327	C040703	C050503	EA-LB25B-SLOT
C030905	C032401	C040705	C050504	EA-LB25-SLOT
C030907	C032403	C040721	C050601	EA-LB30
C030910	C032405	C040723	C050602	EA-LB30-SLOT
C030921	C032407	C040725	C050603	EA-LB40
C030923	C032410	C040901	C050604	EA-LB40-SLOT
C030925	C032421	C040903	C050605	EA-LB50
C030927	C032423	C040905	C070301	EA-LB50-SLOT
C031001	C032425	C040907	C070303	EA-T10
C031003	C032427	C040921	C070501	EA-T10-SLOT
C031005	C040101	C040923	C070503	EA-T20
C031007	C040103	C040925	C070505	EA-T20-SLOT
C031021	C040105	C040927	C070601	EA-T25
C031023	C040107	C041001	C070603	EA-T25-SLOT
C031025	C040121	C041003	C520101	EA-T30
C031027	C040123	C041005	C520102	EA-T30-SLOT
C032001	C040125	C041007	C550001	EA-T40
C032003	C040127	C041021	C550003	EA-T40-SLOT
C032005	C040201	C041023	C550004	EA-T50
C032007	C040203	C041025	C550400	EA-T50-SLOT
C032010	C040205	C041027	C550500	EB10
C032021	C040207	C042401	C550600	EB10-1/16
C032023	C040221	C042402	C550700	EB10-1/4
C032025	C040223	C042403	C570501	EB10-1/8
C032027	C040225	C042501	CA-1	EB10-250
C032101	C040227	C042502	CA-2	EB10-4-28

EB10-M3	EB60	EFB60-1/8	ELB10-M3	ELB50-4-28
EB10-M5	EB60-1/16	EFB80-1/4	ELB10-M5	ELB50-M6
EB10-M6	EB60-1/4	EFB80-1/8	ELB10-M6	ELB60-1/16
EB20	EB60-1/8	EFLB10	ELB20	ELB60-1/4
EB20-1/16	EB60-3/8	EFLB10-1/4	ELB20-1/16	ELB60-1/8
EB20-1/4	EB60-4-28	EFLB10-1/8	ELB20-1/4	ELB60-3/8
EB20-1/8	EB70-1/4	EFLB10-S	ELB20-1/8	ELB80-1/4
EB20-250	EB70-1/8	EFLB20	ELB20-4-28	ELB80-1/8
EB20-3/8	EB80-1/4	EFLB20-1/4	ELB20-M3	ELB80-3/8
EB20-4-28	EB80-1/8	EFLB20-1/8	ELB20-M5	EM3-10
EB20-M3	EB80-3/8	EFLB20-S	ELB20-M6	EM3-M6
EB20-M5	EBK-10	EFLB25-1/4	ELB25	EM5-1/8
EB20-M6	EBK-20	EFLB25-1/8	ELB25-1/16	EM5-10
EB25	EBK-25	EFLB30-1/4	ELB25-1/4	EM6-1/8
EB25-1/16	EBK-30	EFLB30-1/8	ELB25-1/8	EM6-M6
EB25-1/4	EBK-30-4-28	EFLB35-1/4	ELB25-4-28	ERB1/4-1/16
EB25-1/8	EBK40-20	EFLB35-1/8	ELB25-M3	ERB1/4-1/8
EB25-250	EBK40-25	EFLB40-1/4	ELB25-M5	ERB1/4-10
EB25-3/8	EBK-40-5/16	EFLB40-1/8	ELB25-M6	ERB1/8-1/16
EB25-4-28	EBK-60-1/8	EFLB50-1/4	ELB30	ERB3/8-10
EB25-M3	EBK-60-3/8	EFLB50-1/8	ELB30-1/16	ERB4-28-10
EB25-M5	EC10	EFLB60-1/4	ELB30-1/4	ERC20-10
EB25-M6	EC20	EFLB60-1/8	ELB30-1/4-S	ERC30-10
EB30	EC20-SL	EFLB80-1/4	ELB30-1/8	ERC30-20
EB30-1/16	EC25	EFT10-1/4	ELB30-3/8	ERC30-25
EB30-1/4	EC30	EFT10-1/8	ELB30-4-28	ERC40-10
EB30-1/8	EC35	EFT20-1/4	ELB30-M3	ERC40-20
EB30-250	EC40	EFT20-1/8	ELB30-M3F	ERC40-25
EB30-3/8	EC50	EFT25-1/4	ELB30-M5	ERC40-30
EB30-4-28	EC60	EFT30-1/4	ELB30-M6	ERC50-30
EB30-M3	EC70	EFT30-1/8	ELB35	ERC50-35
EB30-M5	EC80	EFT40-1/4	ELB35-1/4	ERC60-20
EB30-M6	EFB10	EFT40-1/8	ELB35-1/8	ERC60-30
EB35	EFB10-1/4	EFT50-1/4	ELB35-4-28	ERC60-40
EB40	EFB10-1/8	EFT50-1/8	ELB35-M6	ERC80-60
EB40-1/16	EFB20	EFT60-1/4	ELB40	ERT10-30-10
EB40-1/4	EFB20-1/4	EFT60-1/8	ELB40-1/16	ERT20-10-20
EB40-1/8	EFB20-1/8	EFT80-1/4	ELB40-1/4	ERT30-10-10
EB40-250	EFB25-1/8	EL10	ELB40-1/4-S	ERT30-10-30
EB40-3/8	EFB30	EL20	ELB40-1/8	ERT30-20-20
EB40-4-28	EFB30-1/4	EL30	ELB40-3/8	ERT30-20-30
EB40-M3	EFB30-1/8	EL40	ELB40-4-28	ERT30-25-30
EB40-M5	EFB35-1/8	EL60	ELB40-M3	ERT30-30-10
EB40-M6	EFB40	EL80	ELB40-M5	ERT30-40-30
EB50	EFB40-1/4	ELB10	ELB40-M6	ERT40-10-40
EB50-1/16	EFB40-1/8	ELB10-1/16	ELB50-1/16	ERT40-20-1/16
EB50-1/4	EFB50-1/4	ELB10-1/4	ELB50-1/4	ERT40-20-1/4
EB50-1/8	EFB50-1/8	ELB10-1/8	ELB50-1/8	ERT40-20-40
EB50-4-28	EFB60-1/4	ELB10-4-28	ELB50-3/8	ERT40-20-4-28

ERT40-30-30	ET30	EX60	F11-21-66	H0-20-3
ERT40-30-40	ET30-1/16	EX80	F11-21-67	H0-20-4
ERT40-40-20	ET30-1/4	F0-20-1	F11-21-74	H0-20-5
ERT40-40-30	ET30-1/8	F0-20-2	F11-21-76	H0-20-6
ERT50-20-50	ET30-3/8	F0-20-3	F11-21-77	H0-20-7
ERT50-30-50	ET30-4-28	F0-20-4	F11-30-14	H0-21-1
ERT60-20-30	ET30-M3	F0-20-5	F11-30-16	H0-21-2
ERT60-20-60	ET30-M5	F0-20-6	F11-30-17	H0-21-3
ERT60-30-20	ET30-M6	F0-20-7	F11-30-44	H0-21-4
ERT60-30-30	ET35	F0-21-1	F11-30-46	H0-21-5
ERT60-30-40	ET35-M6	F0-21-2	F11-30-47	H0-21-6
ERT60-30-60	ET40	F0-21-3	F11-30-64	H0-21-7
ERT60-40-30	ET40-1/16	F0-21-4	F11-30-66	H0-30-1
ERT60-40-60	ET40-1/4	F0-21-5	F11-30-67	H0-30-2
ERT60-60-30	ET40-1/8	F0-21-6	F11-30-74	H0-30-3
ERT60-60-40	ET40-1/8-90	F0-21-7	F11-30-76	H0-30-4
ERT60-80-60	ET40-3/8	F0-30-1	F11-30-77	H0-30-5
ERT80-20-80	ET40-4-28	F0-30-2	F11-31-14	H0-30-6
ERT80-30-80	ET40-M3	F0-30-3	F11-31-16	H0-30-7
ERT80-60-80	ET40-M5	F0-30-4	F11-31-17	H0-31-1
ERX30-10-10-10	ET40-M6	F0-30-5	F11-31-44	H0-31-2
ERX30-10-30-10	ET50	F0-30-6	F11-31-46	H0-31-3
ERX30-20-30-20	ET50-1/16	F0-30-7	F11-31-47	H0-31-4
ERX40-20-40-20	ET50-1/4	F0-31-1	F11-31-64	H0-31-5
ERX40-40-20-40	ET50-1/8	F0-31-2	F11-31-66	H0-31-6
ERX80-40-80-40	ET50-3/8	F0-31-3	F11-31-67	H0-31-7
ET10	ET50-4-28	F0-31-4	F11-31-74	H11-20-14
ET10-1/16	ET50-M6	F0-31-5	F11-31-76	H11-20-16
ET10-1/4	ET60	F0-31-6	F11-31-77	H11-20-17
ET10-1/8	ET60-1/4	F0-31-7	F3-30-1	H11-20-44
ET10-4-28	ET60-1/8	F11-20-14	F3-30-2	H11-20-46
ET10-M3	ET60-3/8	F11-20-16	F3-30-3	H11-20-47
ET10-M5	ET70	F11-20-17	F3-30-4	H11-20-64
ET10-M6	ET80	F11-20-44	F3-30-5	H11-20-66
ET20	ET80-1/4	F11-20-46	F3-30-6	H11-20-67
ET20-1/16	ET80-1/8	F11-20-47	F3-30-7	H11-20-68
ET20-1/4	ET80-3/8	F11-20-64	F4C-1/8-SR	H11-20-74
ET20-1/8	ETB10	F11-20-66	F4C-100-SR	H11-20-76
ET20-4-28	ETB20	F11-20-67	F4C-125-SR	H11-20-77
ET20-M3	ETB25	F11-20-74	F4C-157-SR	H11-21-14
ET20-M5	ETB30	F11-20-76	F4C-250-SR	H11-21-16
ET20-M6	ETB35	F11-20-77	F4N-100-SR	H11-21-17
ET25-1/16	ETB40	F11-21-14	FC-32	H11-21-41
ET25-1/4	EX10	F11-21-16	FC-52	H11-21-44
ET25-1/8	EX20	F11-21-17	FP45-1/8-SR	H11-21-46
ET25-4-28	EX25	F11-21-44	FP45-100-SR	H11-21-47
ET25-M3	EX30	F11-21-46	FPA	H11-21-64
ET25-M5	EX40	F11-21-47	H0-20-1	H11-21-66
ET25-M6	EX50	F11-21-64	H0-20-2	H11-21-67

H11-21-74	HAN-6	M10-125-8	M20-125-10-90	M20-375-2
H11-21-76	HDO	M10-125-8-90	M20-125-10-90W	M20-375-3
H11-21-77	HDOL	M10-125-8-90W	M20-125-10W	M20-375-4
H11-30-06	HM45-1/8-DT	M10-125-8-BRS	M20-250-2	M20-375-5
H11-30-11	HM45-100-DT	M10-125-8-SS	M20-250-2-90	M20-375-6
H11-30-14	HP45-1/8-DT	M10-125-8W	M20-250-2-90W	M20-375-7
H11-30-16	HP45-100-DT	M10-125-9	M20-250-2-BRS	M20-375-8
H11-30-17	JB125-4	M10-125-9-90	M20-250-2-SS	M20-375-9
H11-30-44	JB125-6	M10-125-9-90W	M20-250-2W	M20-375-10
H11-30-46	JB125-8	M10-125-9W	M20-250-3	M30-250-2
H11-30-47	JB125-10	M10-125-10	M20-250-3-90	M30-250-2-90
H11-30-61	JB250-4	M10-125-10-90	M20-250-3-90W	M30-250-2-90W
H11-30-64	JB250-6	M10-125-10-90W	M20-250-3W	M30-250-2W
H11-30-66	JB250-8	M10-125-10-BRS	M20-250-4	M30-250-3
H11-30-67	JB250-10	M10-125-10-SS	M20-250-4-90	M30-250-3-90
H11-30-71	JB32-4	M10-125-10W	M20-250-4-90W	M30-250-3-90W
H11-30-74	JB32-6	M20-125-2	M20-250-4-BRS	M30-250-3W
H11-30-76	JB32-8	M20-125-2-90	M20-250-4-SS	M30-250-4
H11-30-77	JB32-10	M20-125-2-90W	M20-250-4W	M30-250-4-90
H11-31-14	M10-125-2	M20-125-2W	M20-250-5	M30-250-4-90W
H11-31-16	M10-125-2-90	M20-125-3	M20-250-5-90	M30-250-4W
H11-31-17	M10-125-2-90W	M20-125-3-90	M20-250-5-90W	M30-250-5
H11-31-44	M10-125-2-BRS	M20-125-3-90W	M20-250-5W	M30-250-5-90
H11-31-46	M10-125-2-SS	M20-125-3W	M20-250-6	M30-250-5-90W
H11-31-47	M10-125-2W	M20-125-4	M20-250-6-90	M30-250-5W
H11-31-64	M10-125-3	M20-125-4-90	M20-250-6-90W	M30-250-6
H11-31-66	M10-125-3-90	M20-125-4-90W	M20-250-6-BRS	M30-250-6-90
H11-31-67	M10-125-3-90W	M20-125-4W	M20-250-6-SS	M30-250-6-90W
H11-31-74	M10-125-3W	M20-125-5	M20-250-6W	M30-250-6W
H11-31-76	M10-125-4	M20-125-5-90	M20-250-7	M30-250-7
H11-31-77	M10-125-4-90	M20-125-5-90W	M20-250-7-90	M30-250-7-90
H3-30-1	M10-125-4-90W	M20-125-5W	M20-250-7-90W	M30-250-7-90W
H3-30-2	M10-125-4-BRS	M20-125-6	M20-250-7W	M30-250-7W
H3-30-3	M10-125-4-SS	M20-125-6-90	M20-250-8	M30-250-8
H3-30-4	M10-125-4W	M20-125-6-90W	M20-250-8-90	M30-250-8-90
H3-30-5	M10-125-5	M20-125-6W	M20-250-8-90W	M30-250-8-90W
H3-30-6	M10-125-5-90	M20-125-7	M20-250-8-BRS	M30-250-8W
H3-30-7	M10-125-5-90W	M20-125-7-90	M20-250-8-SS	M30-250-9
H4C-1/8-DT	M10-125-5W	M20-125-7-90W	M20-250-8W	M30-250-9-90
H4C-100-DT	M10-125-6	M20-125-7W	M20-250-9	M30-250-9-90W
H4C-125-DT	M10-125-6-90	M20-125-8	M20-250-9-90	M30-250-9W
H4C-157-DT	M10-125-6-90W	M20-125-8-90	M20-250-9-90W	M30-250-10
H4C-250-DT	M10-125-6-BRS	M20-125-8-90W	M20-250-9W	M30-250-10-90
H4N-100-DT	M10-125-6-SS	M20-125-8W	M20-250-10	M30-250-10-90W
HAN-1	M10-125-6W	M20-125-9	M20-250-10-90	M30-250-10W
HAN-2	M10-125-7	M20-125-9-90	M20-250-10-90W	M30-375-2
HAN-3	M10-125-7-90	M20-125-9-90W	M20-250-10-BRS	M30-375-2-90
HAN-4	M10-125-7-90W	M20-125-9W	M20-250-10-SS	M30-375-2-90W
HAN-5	M10-125-7W	M20-125-10	M20-250-10W	M30-375-2W

M30-375-3	M35-375-6	MSV6-2	PBV-2	PMG-60
M30-375-3-90	M35-375-7	MSV6-3	PBV-4	PNV0-0
M30-375-3-90W	M35-375-8	MSV6-4	PFC0-1	PNV0-1
M30-375-3W	M35-375-9	MSV6-5	PFC0-2	PNV0-1/8
M30-375-4	M35-375-10	MSV8-1	PFC0-3	PNV0-2
M30-375-4-90	MB-1	MSV8-2	PFC0-4	PNV0-3
M30-375-4-90W	MB-1F	MSV8-3	PFC0-5	PNV0-4
M30-375-4W	MPS-6-100	MSV8-4	PFC0-6	PNV0-5
M30-375-5	MPS-6-100-S	MSV8-5	PFC0-7	PNV0-6
M30-375-5-90	MS32-4	MSV8-6	PFC11-14	PNV0-7
M30-375-5-90W	MS32-6	MSV8-7	PFC11-16	PNV11-14
M30-375-5W	MS32-8	MSV8-8	PFC11-17	PNV11-16
M30-375-6	MS32-10	MSV8-9	PFC11-44	PNV11-17
M30-375-6-90	MSV10-1	MSV8-10	PFC11-46	PNV11-44
M30-375-6-90W	MSV10-10	MT32-4	PFC11-47	PNV11-46
M30-375-6W	MSV10-10-M5	MT32-6	PFC11-64	PNV11-47
M30-375-7	MSV10-1-156	MT32-8	PFC11-66	PNV11-64
M30-375-7-90	MSV10-12	MT32-10	PFC11-67	PNV11-66
M30-375-7-90W	MSV10-12-M5	MTR-156-102	PFC11-74	PNV11-67
M30-375-7W	MSV10-1-M5	MTR-156-112	PFC11-76	PNV11-74
M30-375-8	MSV10-1P	MTR-187-102	PFC11-77	PNV11-76
M30-375-8-90	MSV10-2	MTR-187-112	PFC11R-14	PNV11-77
M30-375-8-90W	MSV10-2-M5	MTR-250-102	PFC11R-16	PPC11-14
M30-375-8W	MSV10-4	MTR-250-103	PFC11R-17	PPC11-16
M30-375-9	MSV10-4-M5	MTR-250-104	PFC11R-44	PPC11-17
M30-375-9-90	MSV10-6	MTR-250-105	PFC11R-46	PPC11-18
M30-375-9-90W	MSV10-6-M5	MTR-250-106	PFC11R-47	PPC11-41
M30-375-9W	MSV10-8	MTR-250-107	PFC11R-64	PPC11-44
M30-375-10	MSV10-8-M5	MTR-250-108	PFC11R-66	PPC11-46
M30-375-10-90	MSV10-CP	MTR-250-109	PFC11R-67	PPC11-47
M30-375-10-90W	MSV15-1	MTR-250-112	PFC11R-74	PPC11-48
M30-375-10W	MSV15-10	MTR-250-113	PFC11R-76	PPC11-61
M32-4	MSV15-10-M5	MTR-250-114	PFC11R-77	PPC11-64
M32-6	MSV15-1-156	MTR-250-115	PMC-110	PPC11-66
M32-8	MSV15-12	MTR-250-116	PMC-170	PPC11-67
M32-10	MSV15-12-M5	MTR-250-117	PMCBH-062	PPC11-68
M35-250-2	MSV15-1-M5	MTR-250-118	PMCBH-10/32	PPC11-71
M35-250-3	MSV15-1-M5P	MTR-250-119	PMCBH-110	PPC11-74
M35-250-4	MSV15-1P	N2-2	PMCBH-170	PPC11-76
M35-250-5	MSV15-2	NV-32	PMCIL-062	PPC11-77
M35-250-6	MSV15-2-M5	NV-52	PMCIL-10/32	PPC11-78
M35-250-7	MSV15-4	PAV-10	PMCIL-110	PPCJ-2
M35-250-8	MSV15-4-M5	PBF-2	PMCIL-170	PPCJ-2-156
M35-250-9	MSV15-6	PBF-3	PMCM-062	PPCJ-2-250
M35-250-10	MSV15-6-M5	PBF-5	PMCM-10/32	PPCJ-3
M35-375-2	MSV15-8	PBR-2	PMCM-110	PPCJ-3-156
M35-375-3	MSV15-8-M5	PBR-3	PMCM-170	PPCJ-3-250
M35-375-4	MSV15-CP	PBR-5	PMG-100	PPCJ-4
M35-375-5	MSV6-1	PBV-10/32	PMG-160	PPCJ-4-156

PPCJ-4-250	PUMC8-250*	QE11-S-18	R11-NK-17	RTCP-110
PPCJ-5	QE10-5G5	QE11-S-41	R11-NK-44	RTCP-170
PPCJ-5-156	QE10-7MF	QE11-S-44	R11-NK-46	RTCPB
PPCJ-5-250	QE10-FAF	QE11-S-46	R11-NK-47	RTCS-062
PPCJ-6	QE10-FMF	QE11-S-47	R11-NK-64	RTCS-110
PPCJ-6-156	QE11-M-11	QE11-S-48	R11-NK-66	RTCS-170
PPCJ-6-250	QE11-M-14	QE11-S-61	R11-NK-67	RTCSB
PU-125*	QE11-M-16	QE11-S-64	R11-NK-74	RTPB-062
PU-125*-LR	QE11-M-17	QE11-S-66	R11-NK-76	RTPB-110
PU-125*-R	QE11-M-18	QE11-S-67	R11-NK-77	RTPB-170
PU-125*-XR	QE11-M-41	QE11-S-68	R11-NP-14	RTSB-062
PU-125F*	QE11-M-44	QE11-S-71	R11-NP-16	RTSB-110
PU-156*	QE11-M-46	QE11-S-74	R11-NP-17	RTSB-170
PU-156*-LR	QE11-M-47	QE11-S-76	R11-NP-44	S10MM-20-12-2
PU-156*-R	QE11-M-48	QE11-S-77	R11-NP-46	S10MM-20-12-3
PU-156F*	QE11-M-61	QE11-S-78	R11-NP-47	S10MM-20-12-4
PU2-125*-C	QE11-M-64	QE-MI	R11-NP-64	S10MM-20-24-2
PU2-125*-C	QE11-M-66	QE-MS	R11-NP-66	S10MM-20-24-3
PU2-250*-C	QE11-M-67	QE-S	R11-NP-67	S10MM-20-24-4
PU-250*	QE11-M-68	R0-NK-1	R11-NP-74	S10MM-20-24LW-2
PU-250*-LR	QE11-M-71	R0-NK-2	R11-NP-76	S10MM-20-24LW-3
PU-250*-R	QE11-M-74	R0-NK-3	R11-NP-77	S10MM-20-24LW-4
PU-250F*	QE11-M-76	R0-NK-4	R11-RK-14	S10MM-30-12-2
PU-250PB*	QE11-M-77	R0-NK-5	R11-RK-16	S10MM-30-12-3
PU-250R*	QE11-M-78	R0-NK-6	R11-RK-17	S10MM-30-12-4
PU-312*	QE11-P-11	R0-NK-7	R11-RK-44	S10MM-30-24-2
PU-312*-R	QE11-P-14	R0-NP-1	R11-RK-46	S10MM-30-24-3
PU3-250*-L	QE11-P-16	R0-NP-2	R11-RK-47	S10MM-30-24-4
PU-375*	QE11-P-17	R0-NP-3	R11-RK-61	S10MM-30-24LW-2
PU-375*-R	QE11-P-18	R0-NP-4	R11-RK-64	S10MM-30-24LW-3
PU-375F*	QE11-P-41	R0-NP-5	R11-RK-66	S10MM-30-24LW-4
PU-375PB*	QE11-P-44	R0-NP-6	R11-RK-67	S10MM-31-12-2
PU-375R*	QE11-P-46	R0-NP-7	R11-RK-74	S10MM-31-12-3
PU4-125*-C	QE11-P-47	R0-RK-1	R11-RK-76	S10MM-31-12-4
PU4-250*-L	QE11-P-48	R0-RK-2	R11-RK-77	S10MM-31-24-2
PU-468F*	QE11-P-61	R0-RK-3	R11-RP-14	S10MM-31-24-3
PU-562F*	QE11-P-64	R0-RK-4	R11-RP-16	S10MM-31-24-4
PU6-125*-L	QE11-P-66	R0-RK-5	R11-RP-17	S10MML-30-24-2
PU6-250*-L	QE11-P-67	R0-RK-6	R11-RP-44	S15MM-20-12-0A
PU-750F*	QE11-P-68	R0-RK-7	R11-RP-46	S15MM-20-12-0B
PUC-125*	QE11-P-71	R0-RP-1	R11-RP-47	S15MM-20-12-0D
PUC2-125*	QE11-P-74	R0-RP-2	R11-RP-64	S15MM-20-12-0E
PUC2-250*	QE11-P-76	R0-RP-3	R11-RP-66	S15MM-20-12-2B
PUC-250*	QE11-P-77	R0-RP-4	R11-RP-67	S15MM-20-12-2D
PUMC4-125*	QE11-P-78	R0-RP-5	R11-RP-74	S15MM-20-12-2E
PUMC4-250*	QE11-S-11	R0-RP-6	R11-RP-76	S15MM-20-12-3B
PUMC6-125*	QE11-S-14	R0-RP-7	R11-RP-77	S15MM-20-12-3D
PUMC6-250*	QE11-S-16	R11-NK-14	RLN-40	S15MM-20-12-3E
PUMC8-125*	QE11-S-17	R11-NK-16	RTCP-062	S15MM-20-12-4B

S15MM-20-12-4D	S15MM-30-24-4D	S20M31-SS-12-2	S20U30-SS-12-0	S6-20-12-0
S15MM-20-12-4E	S15MM-30-24-4E	S20M31-SS-12-3	S20U30-SS-12-2	S6-20-12-2
S15MM-20-24-0B	S15MM-30-24W-0E	S20M31-SS-12-4	S20U30-SS-12-3	S6-20-12LW-0
S15MM-20-24-0D	S15MM-30-24W-2E	S20M31-SS-24-0	S20U30-SS-12-4	S6-20-12LW-2
S15MM-20-24-0E	S15MM-30-24W-3E	S20M31-SS-24-2	S20U30-SS-24-0	S6-20-220-0
S15MM-20-24-2B	S15MM-30-24W-4E	S20M31-SS-24-3	S20U30-SS-24-2	S6-20-220-2
S15MM-20-24-2D	S15MM-31-12-0B	S20M31-SS-24-4	S20U30-SS-24-3	S6-20-24-0
S15MM-20-24-2E	S15MM-31-12-0E	S20M42-AP	S20U30-SS-24-4	S6-20-24-2
S15MM-20-24-3B	S15MM-31-12-2B	S20M42-DP	S20U31-AP	S6-20-24AC-0
S15MM-20-24-3D	S15MM-31-12-2E	S20M42-DS-11-0	S20U31-SS-11-0	S6-20-24AC-2
S15MM-20-24-3E	S15MM-31-12-3B	S20M42-DS-11-2	S20U31-SS-11-2	S6-20-24LW-0
S15MM-20-24-4B	S15MM-31-12-3E	S20M42-DS-11-3	S20U31-SS-11-3	S6-20-24LW-2
S15MM-20-24-4D	S15MM-31-12-4B	S20M42-DS-11-4	S20U31-SS-11-4	S6-30-110-0
S15MM-20-24-4E	S15MM-31-12-4E	S20M42-DS-12-0	S20U31-SS-12-0	S6-30-110-2
S15MM-20-24W-0E	S15MM-31-24-0B	S20M42-DS-12-2	S20U31-SS-12-2	S6-30-12-0
S15MM-20-24W-2E	S15MM-31-24-0E	S20M42-DS-12-3	S20U31-SS-12-3	S6-30-12-2
S15MM-20-24W-3E	S15MM-31-24-2B	S20M42-DS-12-4	S20U31-SS-12-4	S6-30-12LW-0
S15MM-20-24W-4E	S15MM-31-24-2E	S20M42-DS-24-0	S20U31-SS-24-0	S6-30-12LW-2
S15MM-21-12-0B	S15MM-31-24-3B	S20M42-DS-24-2	S20U31-SS-24-2	S6-30-220-0
S15MM-21-12-0E	S15MM-31-24-3E	S20M42-DS-24-3	S20U31-SS-24-3	S6-30-220-2
S15MM-21-12-2B	S15MM-31-24-4B	S20M42-DS-24-4	S20U31-SS-24-4	S6-30-24-0
S15MM-21-12-3B	S15MM-31-24-4E	S20M42-SS-11-0	S20U42-AP	S6-30-24-2
S15MM-21-12-4B	S15MML-20-12-2B	S20M42-SS-11-2	S20U42-DP	S6-30-24AC-0
S15MM-21-24-0B	S15MML-20-12-2D	S20M42-SS-11-3	S20U42-DS-11-0	S6-30-24AC-2
S15MM-21-24-2B	S15MML-20-24-2B	S20M42-SS-11-4	S20U42-DS-11-2	S6-30-24LW-0
S15MM-21-24-3B	S15MML-20-24-2D	S20M42-SS-12-0	S20U42-DS-11-3	S6-30-24LW-2
S15MM-21-24-4B	S15MML-30-12-2B	S20M42-SS-12-2	S20U42-DS-11-4	S6-DIN
S15MM-30-12-0B	S15MML-30-12-2D	S20M42-SS-12-3	S20U42-DS-12-0	S8-20-110-0
S15MM-30-12-0D	S15MML-30-24-2B	S20M42-SS-12-4	S20U42-DS-12-2	S8-20-12-0
S15MM-30-12-0E	S15MML-30-24-2D	S20M42-SS-24-0	S20U42-DS-12-3	S8-20-220-0
S15MM-30-12-2B	S20M30-AP	S20M42-SS-24-2	S20U42-DS-12-4	S8-20-24-0
S15MM-30-12-2D	S20M30-SS-11-0	S20M42-SS-24-3	S20U42-DS-24-0	S8-30-110-0
S15MM-30-12-2E	S20M30-SS-11-2	S20M42-SS-24-4	S20U42-DS-24-2	S8-30-12-0
S15MM-30-12-3B	S20M30-SS-11-3	S20M-CP	S20U42-DS-24-3	S8-30-220-0
S15MM-30-12-3D	S20M30-SS-11-4	S20MM-10	S20U42-DS-24-4	S8-30-24-0
S15MM-30-12-3E	S20M30-SS-12-0	S20MM-2	S20U42-SS-11-0	S8-31-110-0
S15MM-30-12-4B	S20M30-SS-12-2	S20MM-4	S20U42-SS-11-2	S8-31-12-0
S15MM-30-12-4D	S20M30-SS-12-3	S20MM-6	S20U42-SS-11-3	S8-31-220-0
S15MM-30-12-4E	S20M30-SS-12-4	S20MM-8	S20U42-SS-11-4	S8-31-24-0
S15MM-30-24-0B	S20M30-SS-24-0	S20MU-10	S20U42-SS-12-0	S8-DIN
S15MM-30-24-0D	S20M30-SS-24-2	S20MU-2	S20U42-SS-12-2	SBF-062
S15MM-30-24-0E	S20M30-SS-24-3	S20MU-4	S20U42-SS-12-3	SBF-062-1/4
S15MM-30-24-2B	S20M30-SS-24-4	S20MU-6	S20U42-SS-12-4	SBF-062-LP
S15MM-30-24-2D	S20M31-AP	S20MU-8	S20U42-SS-24-0	SBF-10T
S15MM-30-24-2E	S20M31-SS-11-0	S20U30-AP	S20U42-SS-24-2	SBF-110
S15MM-30-24-3B	S20M31-SS-11-2	S20U30-SS-11-0	S20U42-SS-24-3	SBF-110-1/4
S15MM-30-24-3D	S20M31-SS-11-3	S20U30-SS-11-2	S20U42-SS-24-4	SBF-140
S15MM-30-24-3E	S20M31-SS-11-4	S20U30-SS-11-3	S6-20-110-0	SBF-1410T
S15MM-30-24-4B	S20M31-SS-12-0	S20U30-SS-11-4	S6-20-110-2	SBF-14T

SBF-1616	SMMC-300	SSV-10A-BCC	SSV-10A-FCD	SV11-125-67
SBF-16T	SMMC-600	SSV-10A-BCD	SSV-10A-FDD	SV11-125-77
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SBF-18T	SPG-4-28	SSV-10A-CCC	SSV-10A-MCD	SV11-5/32 PI-77
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SBF-32-2	SPG-M6	SSV-10A-CDD	SSV-10A-MFC	TB10-125-2
SBF-32-3	SSP-10	SSV-10A-CDF	SSV-10A-MFD	TB10-125-4
SBF-32-4	SSV-10A-ABB	SSV-10A-CFF	SSV-10A-MFF	TB10-125-6
SBH-10	SSV-10A-ABC	SSV-10A-DBB	STD-10	TB10-125-8
SBH-125	SSV-10A-ABD	SSV-10A-DBC	STL-10	TB20-250-10
SF-125PI	SSV-10A-ABF	SSV-10A-DBD	STT-10	TB20-250-2
SF-156PI	SSV-10A-ACC	SSV-10A-DBF	SV11-1/4 PI-44	TB20-250-4
SF-22	SSV-10A-ACF	SSV-10A-DCC	SV11-1/4 PI-46	TB20-250-6
SFD-10	SSV-10A-ADC	SSV-10A-DCD	SV11-1/4 PI-66	TB20-250-8
SFL-10	SSV-10A-ADD	SSV-10A-DCF	SV11-1/4 PI-74	TB32-10
SFL-125PI	SSV-10A-ADF	SSV-10A-DDD	SV11-1/4 PI-76	TB32-4
SFL-156PI	SSV-10A-AFD	SSV-10A-DDF	SV11-1/4 PI-77	TB32-6
SFT-10	SSV-10A-AFF	SSV-10A-DFF	SV11-125-14	TB32-8
SFT-125PI	SSV-10A-BBB	SSV-10A-FBB	SV11-125-44	TCR
SFT-156PI	SSV-10A-BBC	SSV-10A-FBC	SV11-125-46	TC-1000
SFU-22	SSV-10A-BBD	SSV-10A-FBD	SV11-125-47	
SMMC-1000	SSV-10A-BBF	SSV-10A-FCC	SV11-125-66	

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