Parker Pneumatic

Flow Controls & Accessories

Section G

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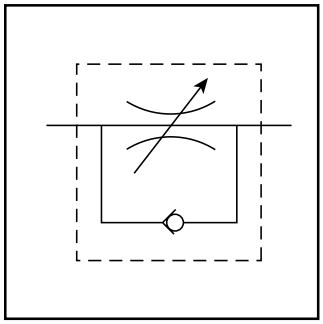
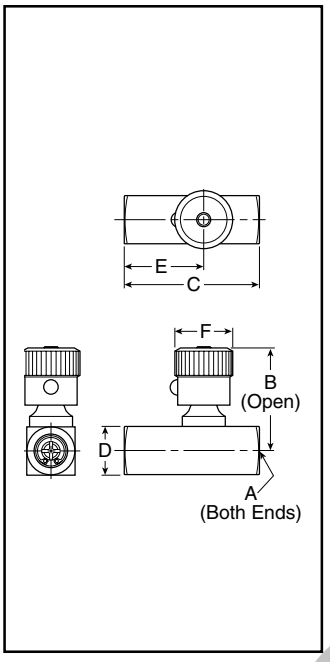




General Information

The "SPF" Series Flow Control Valves meter flow of air or oil in one direction and allow free flow in the reverse direction.

"SPF" Series valves are manufactured with a two step needle. Fine metering is accomplished over the initial adjustment turns and nominal metering is provided over the remaining turns. Once the desired flow is selected, a set screw can be tightened to maintain the setting.

These valves are available with NPTF ports in 1/8", 1/4", 3/8", and 1/2" sizes.

Valve Specifications

Maximum Operating Pressure
2000 PSI Non-Shock

Cracking pressure for return check poppet – 5 PSI Nominal

Operating Temperature
Standard: 0° to 140° F*
-40° to 140° F (Hydraulic service)

Extended Temperature: 0° to 400°F*

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

Body Material: Brass

Needle: Stainless Steel

Poppet: Stainless Steel

Poppet Style: Soft Seal Standard

Check Retainer: Stainless Steel

Seals: Nitrile (Standard), Fluorocarbon (Optional)

Knob: Steel with Zinc Plating

Spring: Stainless Steel

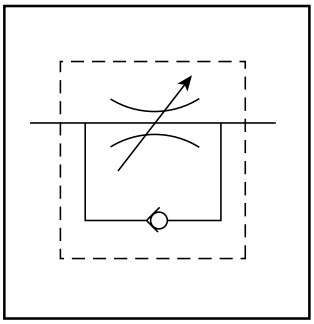
Model Selection and Dimensions

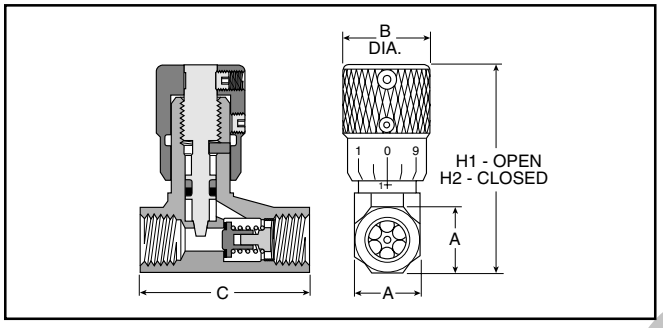
Model Number	A Port Size	B	C	D	E	F
SPF200B	1/8-27 NPTF	1.54	2.00	0.63	1.28	0.75
SPF400B	1/4-18 NPTF	1.79	2.63	0.81	1.66	0.81
SPF600B	3/8-18 NPTF	2.18	2.75	1.00	1.75	1.00
SPF800B	1/2-14 NPTF	2.70	3.44	1.25	2.23	1.19

For units with Fluorocarbon seals, add suffix "V". *Example:* SPF200BV

Performance Data - Flow

Model Number	Controlled Flow Needle Full Open/Check Closed			Free Flow Needle Full Open		
	Flow - SCFM @ 100 PSI Full DP	C_V	Effective Area Sq. Inches	Flow - SCFM @ 100 PSI Full DP	C_V	Effective Area Sq. Inches
SPF200B	8.8	.16	.006	25.4	0.53	0.018
SPF400B	19.3	.35	.013	55.2	1.56	0.038
SPF600B	33.1	.60	.023	99.3	2.27	0.070
SPF800B	55.2	1.00	.038	138.0	5.11	0.096





General Information

The "337" Series Flow Control Valves meter flow of air in one direction and allow free flow in the reverse direction.

The "337" Series valves are manufactured with a fine tapered needle providing precise flow control, even at low flow rates. The perimeter of the adjustment knob features numerical micrometer position markings providing a visual indication of the setting. Once the desired flow is selected, a set screw can be tightened to maintain the setting.

These valves are available with NPTF ports in 1/8", 1/4", 3/8", 1/2", and 3/4" sizes. This series is recommended for pneumatic service.

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Valve Specifications

Maximum Operating Pressure
250 PSI

Cracking pressure for return check poppet – 1 to 2 PSIG

Operating Temperature
Standard: 0° to 180°F*

Extended Temperature: 0° to 300°F* (consult factory)

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

Body Material: Brass
Needle: Stainless Steel
Check Seal: Urethane
Needle Seals: Buna N (Fluorocarbon optional – consult factory)
Knob: Aluminum
Spring: Stainless Steel
Retainer: Zinc- Plated Steel
Set Screw: Steel

Model Selection and Dimensions

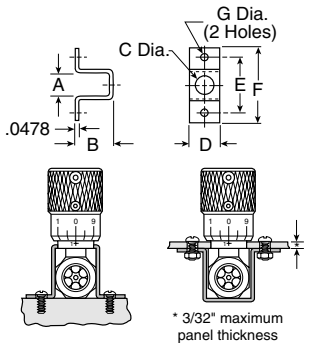
Port Size	Model	Flow (SCFM†)		Dimensions					Service Kit
		Adj.	Free Flow	A	B	C	H1	H2	
1/8"	00337 1000	15	32	9/16"	0.75	1.47	2.03	1.81	00337 8000
1/4"	00337 1001	28	75	11/16"	0.75	1.47	2.28	2.03	00337 8001
3/8"	00337 1002	59	139	7/8"	0.88	2.31	2.84	2.53	00337 8002
1/2"	00337 1003	126	183	1-3/16"	1.06	3.25	3.62	3.22	00337 8003
3/4"	00337 1004	140	327	1-3/8"	1.06	3.25	3.72	3.31	00337 8004

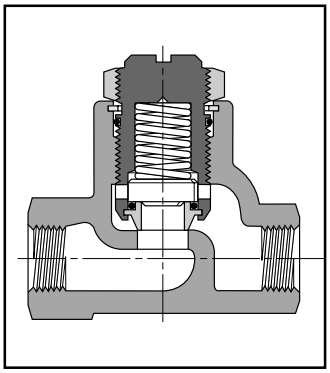
† At 100 PSIG inlet pressure with full pressure drop.

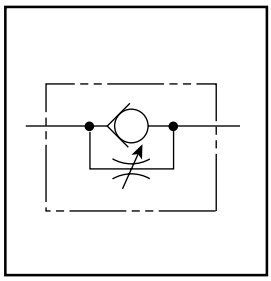
Mounting Bracket Model Selection and Dimensions

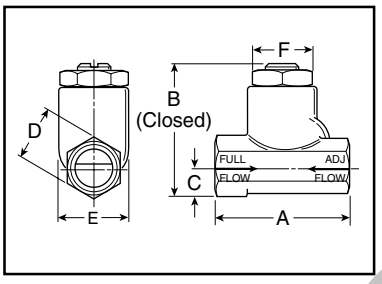
Port Size	Mounting Bracket Model No.	Dimensions						
		A	B	C	D	E	F	G
1/8"	00337 8100	0.66	0.66	0.505	0.75	1.38	1.88	0.22
1/4"	00337 8101	0.75	0.89	0.505	0.75	1.50	2.00	0.22
3/8"	00337 8102	0.94	1.12	0.630	1.25	1.75	2.31	0.27
1/2"	00337 8103	1.25	1.62	0.755	1.75	2.06	2.62	0.27
3/4"	00337 8104	1.44	1.72	0.755	1.75	2.25	2.81	0.27

Mounting Bracket









Application

The "3250" Series Flow Control Valves are specifically designed to accurately meter the flow of air in one direction and allow free flow in the opposite direction. The "3250" Series Flow Control Valves are also suitable for low pressure hydraulic service.

Operation

When air is moving in the free flow direction through the valve, it forces the poppet off its seat and unrestricted air flow is permitted.

When air is moving in the metered direction through the valve, air pressure and the force of the poppet spring causes the poppet to close. Flow must then be through the orifice that is controlled by the metering screw. Opening this screw allows more flow; closing it, less flow.

Technical Specifications

Body: Brass

Port Size: 1/8", 1/4", 3/8", 1/2", 3/4"

Internal Components: Brass, Stainless Steel

Seals: Buna N

Operating Temperature:
Standard: 0°F to 180°F
Extended Options: 0°F to 300°F

Operating Pressures:
Air: 400 PSIG
Hydraulic: 800 PSIG

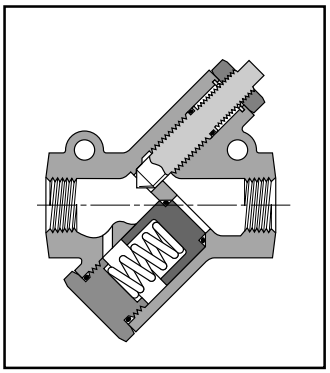
Valve will operate mounted in any position. Lock nut on metering screw prevents change in setting during operation.

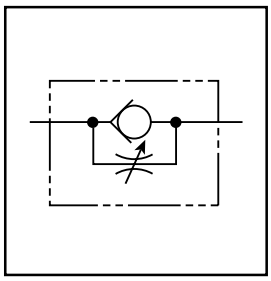
Flow Rating (SCFM)

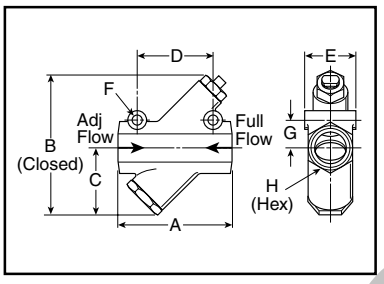
Flow Path	Valve Port Size				
	1/8"	1/4"	3/8"	1/2"	3/4"
Maximum Flow in Metered Direction	70	130	220	295	420
Maximum Flow in Free Flow Direction	60	120	205	346	615

Model Selection Information and Dimensions

Model Number	03250 0119		03250 0219		03250 0319		03250 0419		03250 0519	
Port Size NPTF	1/8"		1/4"		3/8"		1/2"		3/4"	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
A	1.75	45	2.33	59	2.66	68	3.11	79	3.56	90
B	1.56	40	1.97	50	2.44	62	3.06	78	3.69	94
C	0.37	9	0.44	11	0.56	14	0.75	19	0.88	22
D	0.62	16	0.75	19	1.00	25	1.25	32	1.50	38
E	0.81	21	1.09	28	1.38	35	1.63	41	2.00	51
F	0.68	17	0.94	24	1.19	30	1.38	35	1.75	44







Application

These extra large flow control valves have been developed to provide effective flow settings for large diameter cylinders and for other similar air applications. Each valve has a fine screw adjustment allowing precise settings which are secured by a sturdy lock nut.

Operation

Large internal port passages coupled with unique soft seal poppet and inline design provide maximum full flow capacity and minimum pressure drop in the free flow direction. Their cone shaped brass metering valve will provide consistent cylinder speed by regulating cylinder exhaust.

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Technical Specifications

Body: Cast Aluminum

Port Size: 1", 1-1/4", 1-1/2"

Internal Components: Brass, Aluminum

Seals: Buna N, Urethane

Spring: Stainless Steel

Operating Temperature:
Standard: – 40°F to 180°F
Extended Options: – 40°F to 350°F

Operating Pressures:
Maximum Air: 250 PSIG

Flow Capacity In Full Flow Direction

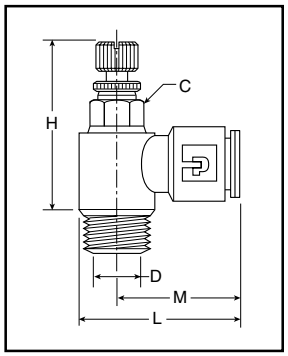
Port Size (NPTF)	Max. Flow (Needle Open)		Model Number
	SCFM**	Cv	
1	1000	12.3	03250 1000
1-1/4	1200	13.8	03250 1250
1-1/2	1800	17.5	03250 1500

** At 100 PSIG inlet pressure with full pressure drop.

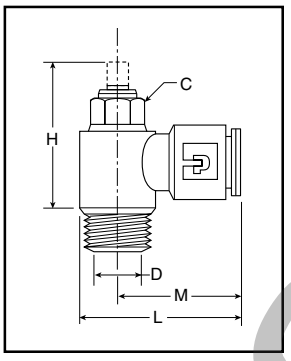
Model Selection Information and Dimensions

Model Number	03250 1000		03250 1250		03250 1500	
Port Size NPTF	1"		1-1/4"		1-1/2"	
	Inches	mm	Inches	mm	Inches	mm
A	5.00	127	5.00	127	5.88	149
B	6.50	165	6.50	165	8.00	203
C	3.00	76	3.00	76	3.75	95
D	3.25	83	3.25	83	3.50	89
E	2.25	57	2.25	57	2.50	64
F	0.39	10	0.39	10	0.39	10
G	1.31	33	1.31	33	1.50	38
H	2.13	54	2.13	54	2.38	60

FCM701



FCM703



General Information

Miniature right angle flow controls provide meter out control of exhaust air from an air cylinder while providing full flow in the reverse direction. The 10-32 male thread can be used to mount directly to cylinder ports. The inlet ports are available in 5-32 or 1/4" instant tube fittings. The adjustment screw is captive and discourages tampering.

This compact flow control saves space and reduces the number of fittings involved in making the connection. Plumbing can be oriented 360° about the cylinder port.

Valve Specifications

Maximum Operating Pressure
145 PSIG (10 bar, 1000 kPa) max.

Temperature Range*
0°F to 140°F (-18°C to 60°C)

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

Body: Polyamide
Mounting thread: Brass

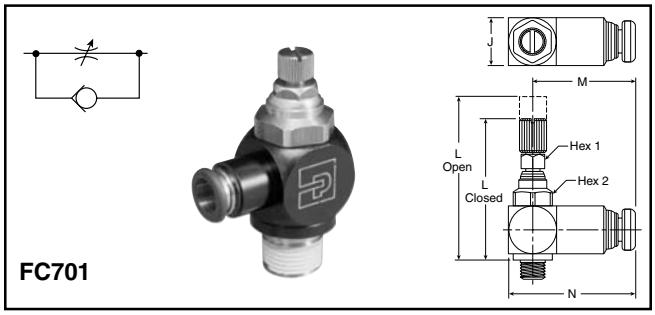
Dimensions

Miniature Exhaust Flow Control FCM701
Composite Body

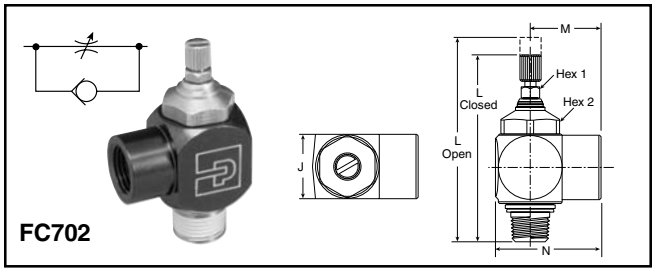
Part No.	Tube Size	Thread Size	C Hex (mm)	H Closed	H Open	L	M	Flow Dia. D	Adjusted Flow (SCFM)	Free Flow (SCFM)
FCM701-5/32-0	5/32	10-32	6	0.925	1.023	0.846	0.669	0.080	5.23	2.90
FCM701-5/32-2	5/32	1/8	7	1.000	1.083	0.935	0.708	0.100	8.41	6.32
FCM701-4-0	1/4	10-32	6	0.925	1.023	0.885	0.708	0.080	9.94	3.86
FCM701-4-2	1/4	1/8	7	1.000	1.083	0.957	0.730	0.100	10.56	5.08
FCM701-4-4	1/4	1/4	8	1.083	1.180	1.013	0.748	0.160	18.79	10.79

Knobless Miniature Exhaust Flow Control FCM703
Composite Body

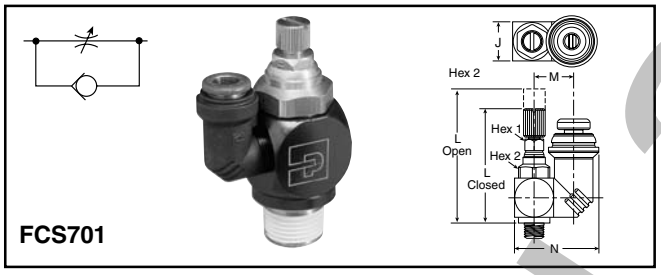
Part No.	Tube Size	Thread Size	C Hex (mm)	H Closed	H Open	L	M	Flow Dia. D	Adjusted Flow (SCFM)	Free Flow (SCFM)
FCM703-5/32-0	5/32	10-32	6	0.650	0.787	0.846	0.669	0.080	7.43	4.76
FCM703-4-2	1/4	1/8	7	0.708	0.860	0.956	0.730	0.100	12.08	5.86
FCM703-4-4	1/4	1/4	8	0.826	0.964	1.013	0.748	0.160	19.55	10.89



FC701



FC702



FCS701

Application

The Right Angle Flow Control is an ideal solution to cylinder speed control where space is at a premium. Costly fittings, connections and piping expenses can be eliminated because the valve can rotate 360°, the piping alignment can be in any direction.

Operation

Install by threading male end directly into cylinder port. The free-flow and metered-flow direction is automatically predetermined. Free-flow direction is into cylinder and metered-flow is out of the cylinder. Flow is adjusted with an Allen wrench and locked with nut.

FC701 Series is available with Prestolok fittings on inlet port to accommodate 1/8 – 1/2 tube sizes. This allows for quick connection and eliminates need for separate tube fitting.

FC702 Series is available with a threaded inlet connection.

FCS701 Series is available with a swivel outlet, for use where access is restricted.

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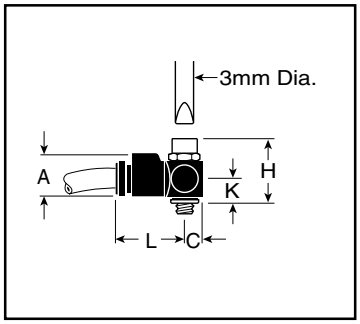
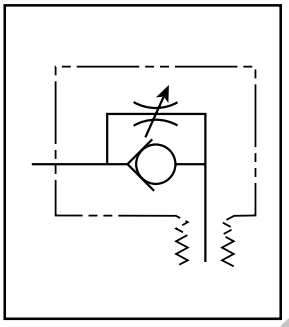
Specification and Description

Body: Brass Black Epoxy Coated
Bolt Material: Brass
Plunger: Brass and Acetal
Seals: Buna N
Temperature Range: -10°F to 200°F (-23°C to 93°C)
Pressure Rating: 145 PSIG (10 bar, 1000 kPa) max.

Dimensions

Part No.	Tube Size	Thread Size	Hex 1	Hex 2	L Open	L Closed	N	M	J	Adjusted Flow (SCFM)	Free Flow (SCFM)
Flow Control with Push-in Connecton FC701											
FC701-2-0	1/8	10-32	1/16	5/16	1.363	1.167	1.040	0.870	0.393	7.06	6.76
FC701-2-2	1/8	1/8	5/16	5/8	2.181	2.000	1.330	0.961	0.679	13.40	11.65
FC701-5/32-0	5/32	10-32	1/16	5/16	1.363	1.167	1.067	0.870	0.393	9.12	6.60
FC701-5/32-2	5/32	1/8	5/16	5/8	2.181	2.000	1.370	1.000	0.679	16.41	15.60
FC701-5/32-4	5/32	1/4	5/16	5/8	2.566	2.318	1.377	1.008	0.679	10.99	3.94
FC701-4-2	1/4	1/8	5/16	5/8	2.181	2.000	1.361	0.992	0.679	17.74	14.69
FC701-4-4	1/4	1/4	5/16	5/8	2.566	2.318	1.381	1.011	0.679	40.03	34.77
FC701-4-6	1/4	3/8	5/16	13/16	3.157	2.696	1.582	1.090	0.984	40.90	34.28
FC701-6-4	3/8	1/4	5/16	5/8	2.566	2.318	1.507	1.138	0.679	42.05	37.39
FC701-6-6	3/8	3/8	5/16	13/16	3.157	2.696	1.677	1.177	0.984	76.33	32.33
FC701-6-8	3/8	1/2	9/16	1	3.858	3.287	1.866	1.276	1.181	99.10	117.21
FC701-8-8	1/2	1/2	9/16	1	3.858	3.287	2.024	1.433	1.181	140.85	125.24
Flow Control with Threaded Connection FC702											
FC702-2	1/8	1/8	5/16	5/8	2.181	2.000	1.117	0.748	0.679	18.75	15.85
FC702-4	1/4	1/4	5/16	5/8	2.566	2.318	1.274	0.905	0.679	42.65	34.69
FC702-6	3/8	3/8	5/16	13/16	3.157	2.696	1.535	1.043	0.984	59.66	39.91
FC702-8	1/2	1/2	9/16	1	3.858	3.287	1.791	1.200	1.18	124.00	123.76
Flow Control with Swivel Outlet FCS701											
FCS701-2-2	1/8	1/8	5/16	5/8	2.181	2.000	1.240	0.620	0.679	5.12	7.15
FCS701-5/32-0	5/32	10-32	1/16	5/16	1.363	1.167	0.854	0.401	0.393	5.56	5.34
FCS701-5/32-2	5/32	1/8	5/16	5/8	2.181	2.000	1.239	0.618	0.679	9.34	9.03
FCS701-5/32-4	5/32	1/4	5/16	5/8	2.566	2.318	1.240	0.620	0.679	11.17	10.18
FCS701-4-2	1/4	1/8	5/16	5/8	2.181	2.000	1.318	0.657	0.679	17.39	14.25
FCS701-4-4	1/4	1/4	5/16	5/8	2.566	2.318	1.318	0.657	0.679	26.35	27.74
FCS701-5-4	5/16	1/4	5/16	5/8	2.566	2.318	1.392	0.696	0.679	39.16	34.61
FCS701-6-4	3/8	1/4	5/16	5/8	2.566	2.319	1.535	0.755	0.679	39.08	38.02
FCS701-6-6	3/8	3/8	5/16	13/16	3.157	2.696	1.740	0.834	0.984	59.97	41.47
FCS701-6-8	3/8	1/2	9/16	1	3.858	3.287	1.619	0.992	1.181	92.50	81.47





General Information

Miniature right angle flow controls provide meter out control of exhaust air from an air cylinder while providing full flow in the reverse direction. The M5 (10-32) male thread can be used to mount directly to cylinder ports. The inlet ports are available in M5 (10-32) male or 5/32" instant tube fitting. The adjustment screw is captive and discourages tampering.

This compact flow control saves space and reduces the number of fittings involved in making the connection. Plumbing can be oriented 360° about the cylinder port.

Valve Specifications

Maximum Operating Pressure
145 PSIG (10 bar)

Operating Temperature
0° to 140°F*

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

Body: Polyamide

Mounting thread: Brass

Model Selection

Ports		Wrench Size	Model Number
Male	Female		
M5	M5	5/16"	PWRE14557
M5	5/32" Tube	5/16"	PWRE14457

Note: Standard 10-32 fittings will fit the M5 threads on valve body.

Dimensions - Inches (mm)

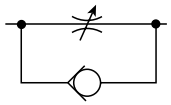
A	C	K	H	L
0.43 (11)	0.16 (4)	0.28 (7,2)	0.67 (17)	0.79 (20)

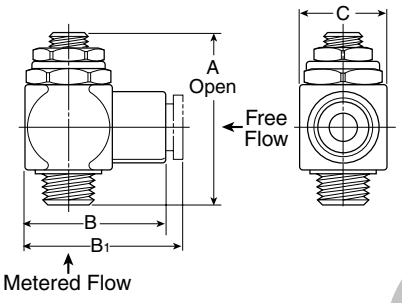
Flow

No of Turns	Exhaust (Screw Open)	Inlet (Screw Closed)
12	1.8 SCFM	1.8 SCFM

Shown with Threaded Inlet

Shown with Prestolok Inlet Fitting





Application

The Heavy Duty Right Angle Flow Control is an ideal solution to cylinder speed control where space is at a premium. Costly fittings, connections and piping expenses can be eliminated because the valve can rotate 360°, the piping alignment can be in any direction. The 1/8" model can be rotated after final assembly.

Operation

Install by threading male end directly into cylinder port. The free-flow and metered-flow direction is automatically predetermined. Free-flow direction is into cylinder and metered-flow is out of the cylinder. Flow is adjusted with an Allen wrench and locked with nut.

Heavy Duty Right Angle Flow Control also available with Prestolok fittings on inlet port to accommodate 5/32 - 3/8 tube sizes. This allows for quick connection and eliminates need for separate tube fitting.

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Specification and Description

Body: Brass

Plunger: Brass and Acetal

Seals: Buna N

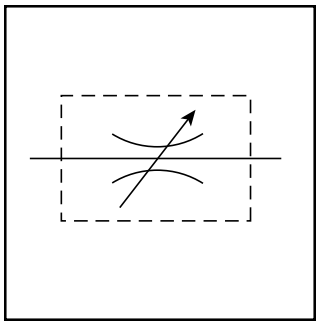
Temperature Range: 0°F to 140°F (–18°C to 60°C)

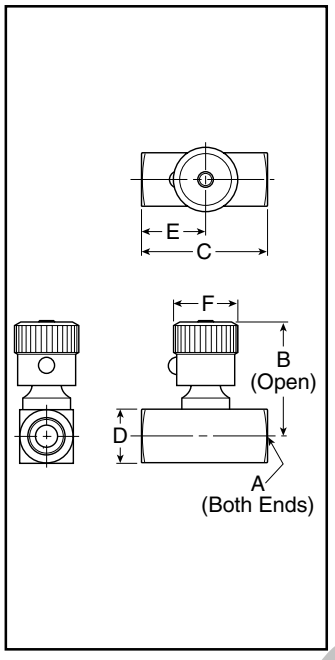
Pressure Rating: 125 PSIG (863 kPa) max.

Model Selection Information and Dimensions

Model Number	Thread (NPT) Male	Thread (NPT) Female	A		B		C		Weight		C_V	
			Inches	mm	Inches	mm	Inches	mm	oz.	kg.	Adjusted Flow	Free Flow
03251 0125	1/8	1/8	1.63	41	1.18	30	0.67	17	2.0	0.9	0.26	0.20
03251 0250	1/4	1/4	1.86	47	1.40	36	0.91	23	4.5	2.0	0.75	0.68
03251 0375	3/8	3/8	2.15	55	1.71	43	1.06	27	7.0	3.2	0.84	0.72
03251 0500	1/2	1/2	2.54	65	1.98	53	1.26	32	11.0	5.0	1.64	1.41
With Prestolok Fittings	**Thread (NPT)**	**Tube Size**	**A**		**B_1**		**C**		**Weight**		**Cv**	
03251 1215	1/8	5/32	1.63	41	1.18	30	0.67	17	2.0	0.9	0.19	0.16
03251 1225	1/8	1/4	1.63	41	1.18	30	0.67	17	2.0	0.9	0.28	0.22
03251 2525	1/4	1/4	1.86	47	1.40	36	0.91	23	4.5	2.0	0.51	0.44
03251 2538	1/4	3/8	1.86	47	1.40	36	0.91	23	4.5	2.0	0.62	0.53
03251 3838	3/8	3/8	2.15	55	1.71	43	1.06	27	7.0	3.2	0.78	0.65

⚠ ***CAUTION:*** If it is possible that the ambient temperature may fall below freezing, the medium must be moisture-free to prevent internal damage or unpredictable behavior.





General Information

The "SPN" Series needle valves provide excellent bi-directional speed control for pneumatic and hydraulic applications.

"SPN" valves are manufactured with a two step needle. Fine metering is accomplished over the initial adjustment turns and nominal metering is provided over the remaining turns. Once the desired flow is selected, a set screw can be tightened to maintain the setting.

These valves are available with NPTF ports in 1/8", 1/4", 3/8" and 1/2" sizes.

Component Materials

Body: Brass

Needle: Stainless Steel

Needle seals: Nitrile (Standard), Fluorocarbon (Optional)

Knob: Steel with Zinc Plating

Valve Specifications

Maximum Operating Pressure
2000 PSI Non-Shock

Operating Temperature
Standard: 0° to 140° F*

Extended temperature: 0° to 400°F*

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

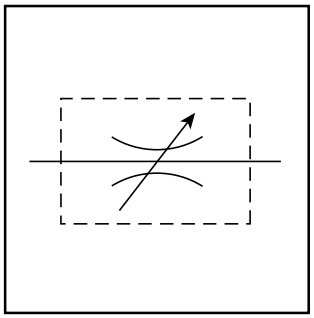
Model Selection and Dimensions

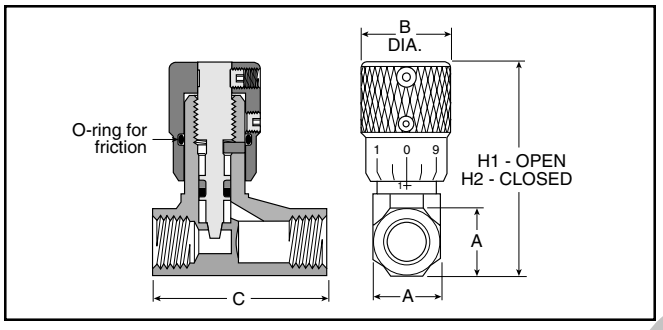
Model Number	A Port Size	B	C	D	E	F
SPN200B	1/8-27 NPTF	1.54	1.50	0.62	0.75	0.75
SPN400B	1/4-18 NPTF	1.79	2.00	0.81	1.00	0.81
SPN600B	3/8-18 NPTF	2.18	2.50	1.00	1.25	1.00
SPN800B	1/2-14 NPTF	2.70	2.62	1.25	1.31	1.19

For units with Fluorocarbon seals, add suffix "V". *Example:* SPN200BV

Performance Data

Model Number	Controlled Flow Needle Full Open		
	Flow - SCFM @ 100 PSI Full DP	C_v	Area Sq. Inches
SPN200B	8.8	.16	.006
SPN400B	19.3	.35	.013
SPN600B	33.1	.60	.023
SPN800B	55.2	1.00	.038





General Information

"338" Series needle valves bi-directionally meter the flow of air through the valve.

This series features a fine tapered needle providing precise flow of air in both directions. Numerical micrometer position markings are stamped on the perimeter of the adjustment knob which provide a visual indication of the setting. Once the desired flow is selected, a set screw can be tightened to maintain the setting.

These valves are available with NPTF ports in 1/8", 1/4", 3/8" 1/2" and 3/4" sizes. This series is recommended for pneumatic service.

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Component Materials

Body Material: Brass

Internal Components: Stainless Steel/Brass

Seals: Nitrile (Fluorocarbon optional – consult factory)

Valve Specifications

Maximum Operating Pressure
250 PSIG (Air)

Operating Temperature
Standard: 0° to 180° F*

Extended Temperature: 0°F to 300°F*
(Consult factory)

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

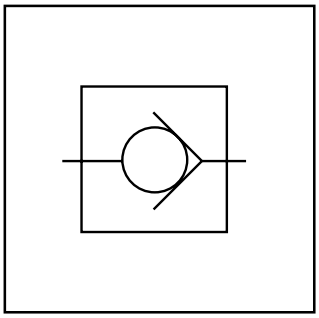
Model Selection and Dimensions

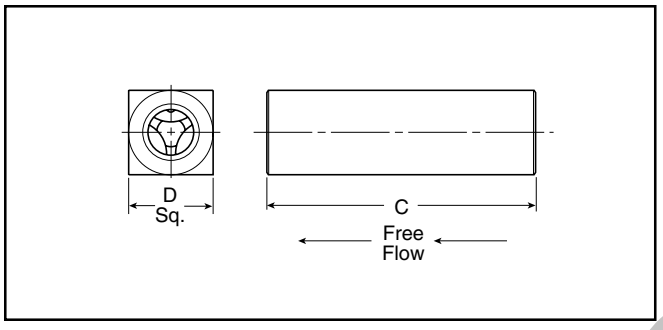
Port Size	Model	Dimensions					Service Kit
		A	B	C	H1	H2	
1/8"	00338 1100	9/16"	0.75	1.47	2.03	1.81	00337 8000
1/4"	00338 1101	11/16"	0.75	1.47	2.28	2.03	00337 8001
3/8"	00338 1102	7/8"	0.88	2.31	2.84	2.53	00337 8002
1/2"	00338 1103	1-3/16"	1.06	3.25	3.62	3.22	00337 8003
3/4"	00338 1104	1-3/8"	1.06	3.25	3.72	3.31	00337 8004

Performance Data – Flow

Port Size	Model Number	Flow (SCFM†)
1/8"	00338 1100	15
1/4"	00338 1101	28
3/8"	00338 1102	59
1/2"	00338 1103	126
3/4"	00338 1104	140

† At 100 PSIG inlet pressure with full pressure drop.





General Description

Check valves provide free flow of air or oil in one direction and dependable shutoff in the opposite direction.

These valves are available with NPTF ports in 1/8", 1/4", 3/8" and 1/2" sizes.

Valve Specifications

Maximum Operating Pressure
2000 PSI Non-Shock

Operating Temperature
0° to 140° F*
-40° to 140° F (Hydraulic service)

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

Body: Brass

Poppet: Stainless Steel

Poppet Seal: Buna (Nitrile)

Poppet Retainer: Stainless Steel

Spring: Stainless Steel

Poppet Style: Soft Seal Standard

Model Selection and Dimensions

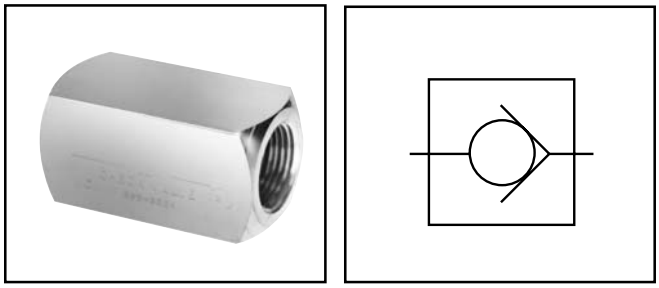
Model Number	A Port Size	D	C
SPC200B	1/8-27 NPTF	0.62	2.00
SPC400B	1/4-18 NPTF	0.81	2.62
SPC600B	3/8-18 NPTF	1.00	2.75
SPC800B	1/2-14 NPTF	1.25	3.44

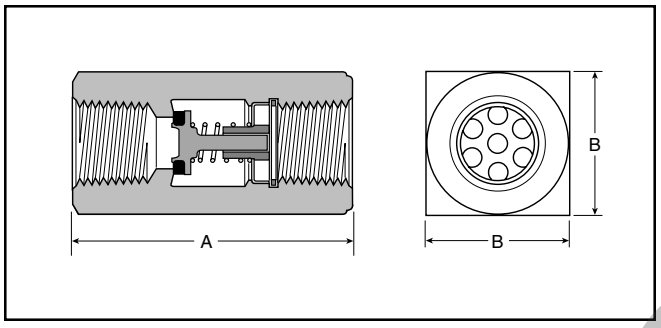
Performance Data - Flow

Model Number	Port Size, Inches	Free Flow SCFM*	Cv	Orifice area, in.^{2}
SPC200B	1/8-27 NPTF	29.2	0.53	0.023
SPC400B	1/4-18 NPTF	86.1	1.56	0.068
SPC600B	3/8-18 NPTF	125.3	2.27	0.099
SPC800B	1/2-14 NPTF	282.0	5.11	0.224

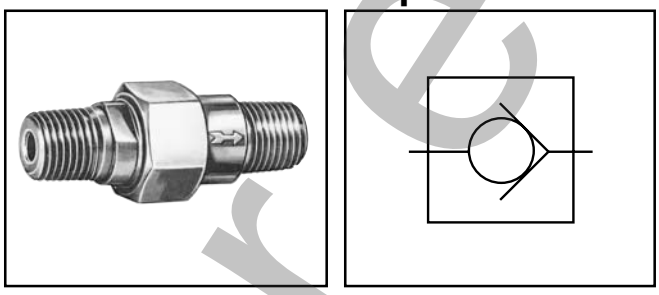
* At 100 PSI, Full ΔP

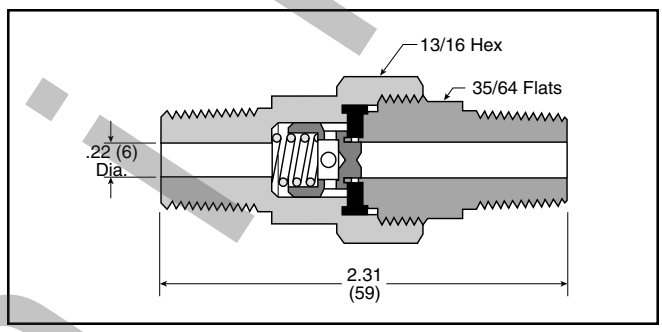
“339” Series – 1/8" to 3/4" Ports





“3047” – 1/4" Male Pipe





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General Information

“339” Series check valves allow free flow in one direction and provide positive checked (zero flow) in the reverse direction. These valves are available with NPTF ports in 1/8", 1/4", 3/8", 1/2" & 3/4" sizes. This series is recommended for pneumatic service.

Valve Specifications

Maximum Operating Pressure
250 PSIG

Cracking Pressure: 1 to 2 PSIG

Operating Temperature
Standard: 0° to 180° F*

Extended Temperature Option: 0°F to 300°F*

Component Materials

Body Material: Brass

Internal Components: Brass / Stainless Steel / Zinc- Plated Steel

Seals: Urethane (standard), Fluorocarbon (optional – consult factory)

Model Selection and Dimensions

Port Size	Model Number	Flow† (SCFM)	Dimensions A	Dimensions B	Service Kit
1/8"	00339 3000	35	1.22	0.56	00337 8000
1/4"	00339 3001	75	1.34	0.69	00337 8001
3/8"	00339 3002	143	2.00	0.88	00337 8002
1/2"	00339 3003	162	2.56	1.19	00337 8003
3/4"	00339 3004	323	2.66	1.38	00337 8004

General Information

“3047” Series check valves allow free flow in one direction and provide positive checked (zero flow) in the reverse direction. This valve is available with a male 1/4" NPTF connection and is recommended for pneumatic service.

Valve Specifications

Maximum Operating Pressure
250 PSIG

Cracking Pressure: 1 to 2 PSIG

Operating Temperature
Standard: 0° to 180° F*

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

Body Material: Brass

Internal Components: Brass/Stainless Steel

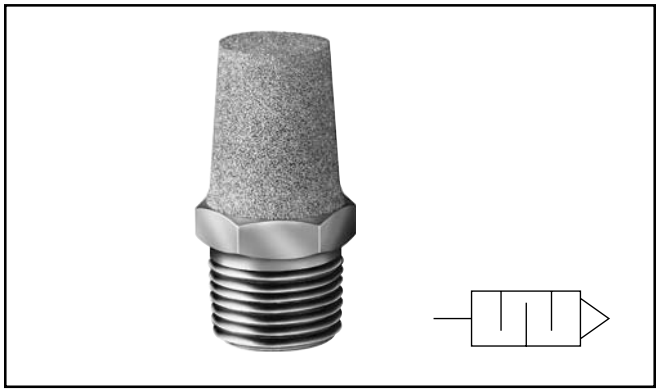
Seals: Nitrile

Model Selection

Pipe Thread	Model Number	Flow† (SCFM)
1/4"	03047 0099	30

† At 100 PSIG inlet pressure with full pressure drop.

"EM" Series – Sintered Bronze Muffler / Filters



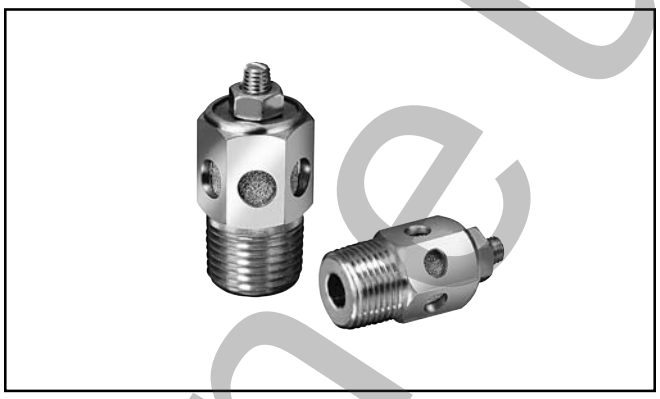
Muffler / filters effectively reduce air exhaust noises to an industry accepted level with minimum flow restriction. They protect valves, impact wrenches, screw drivers and other air tools by preventing dirt and other foreign matter from entering the system. Non-corrosive. Can be cleaned with many common solvents.

Maximum Operating Pressure
250 PSIG (Air)

Operating Temperature
0° to 300° F*

Pipe Thread	Model Number	Overall Length	Hex Size
1/8"	EM12	1.00	7/16"
1/4"	EM25	1.32	9/16"
3/8"	EM37	1.54	11/16"
1/2"	EM50	1.85	7/8"
3/4"	EM75	2.29	1-1/6"
1"	EM100	2.91	1-5/16"
1-1/4"	EM125	3.25	1-11/16"
1-1/2"	EM150	3.69	2"

Muffler / Flow Controls



Muffler / Flow controls provide an acceptable exhaust noise level and effectively meter exhaust. Installed in valve exhaust ports, they control cylinder piston speeds throughout a wide range. The adjusting screw cannot be accidently blown out, can be locked to maintain setting. Brass and bronze construction. Clean with commonly used solvents.

Maximum Operating Pressure
250 PSIG (Air)

Operating Temperature
0° to 300° F*

Pipe Thread	Model Number	Overall Length	Hex Size
1/8"	04502 0002	1.15	9/16"
1/4"	04504 0004	1.42	5/8"
3/8"	04506 0060	1.49	11/16"
1/2"	04508 0080	1.77	7/8"
3/4"	04512 0012	1.98	1-1/16"
1"	04516 0016	2.15	1-5/16"

Breather Vents

NOTE: Breather vents should not be used as exhaust mufflers.

These low silhouette versions of the muffler/filter are useful where space is a problem and/or to prevent contamination. Use for vacuum relief or pressure equalization in gear boxes, oil tanks, reservoirs, etc. Non-corrosive.

Maximum Operating Pressure

250 PSIG (Air)

Operating Temperature

0° to 300° F*

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

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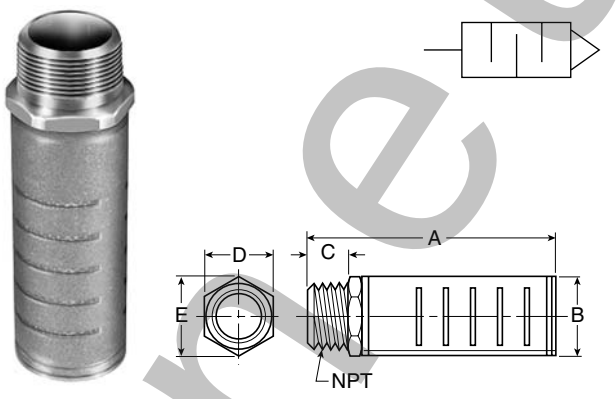
Pipe Thread	Model Number	Overall Length	Hex Size
1/8"	04702 0002	0.44	7/16"
1/4"	04704 0004	0.63	9/16"
3/8"	04706 0006	0.75	11/16"
1/2"	04708 0008	0.88	7/8"
3/4"	04712 0012	1.00	1-1/6"
1"	04716 0016	1.31	1-5/16"
1-1/4"	04720 0020	1.41	1-11/16"
1-1/2"	04724 0024	1.50	2"

"ES" Series – Silencer



The silencer is designed to give superior performance in noise control with a minimum effect on air efficiency. "Trimline" design allows location in the tightest places without extra plumbing and fittings. Fits directly into the exhaust port of more than 90% of present commercial valves. Slotted body permits rapid discharge of air without undesirable back pressure. Unique nylon screen element resists dirt buildup or clogging.

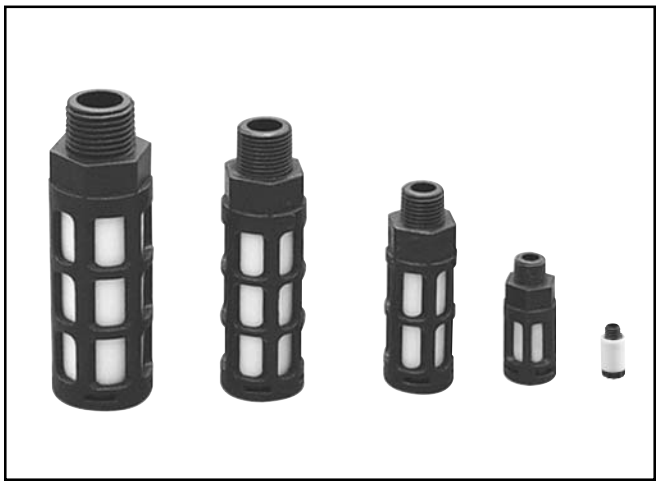
Maximum Operating Pressure

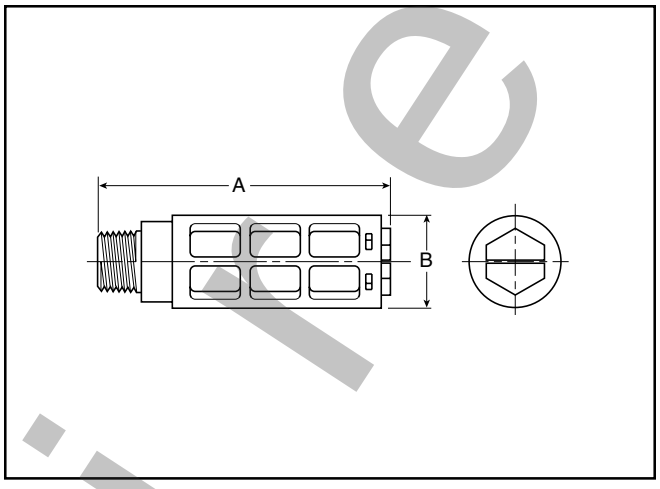
250 PSIG (Air)

Operating Temperature

0° to 300° F*

Pipe Thread	Model Numbers		Flow SCFM @ 100 PSIG Inlet	Dimensions				
	NPTF	BSPT (R)		A	B	C	D	E
1/8"	ES12MB	ESB12MB	115	2.31	0.62	0.31	0.68	5/8"
1/4"	ES25MB	ESB25MB	129	2.41	0.88	0.50	0.97	7/8"
3/8"	ES37MB	ESB37MB	219	3.06	1.25	0.50	1.38	1-1/4"
1/2"	ES50MB	ESB50MB	549	3.19	1.25	0.64	1.38	1-1/4"
3/4"	ES75MB	ESB75MB	893	4.69	1.50	0.66	1.62	1-1/2"
1"	ES100MB	ESB100MB	1,013	4.69	1.50	0.81	1.62	1-1/2"
1-1/4"	ES125MB	ESB125MB	1,486	5.69	2.88	1.25	—	—
1-1/2"	ES150MB	ESB150MB	1,580	5.69	2.88	1.25	—	—





Features

- Compact
- Lightweight
- Easy to install
- Excellent noise reduction
- Protects components from contamination
- NPT & BSPT threads available

Thread Size	Part Number		A (mm)	B (mm)	Maximum Flow (SCFM) 100 PSIG Inlet	Sound Pressure Level (dBA)	
	NPT	BSPT				20 PSIG Inlet	100 PSIG Inlet
M5	AS-5		.43 (11)	.32 (8)	15	69	79
1/8"	ASN-6	AS-6	1.57 (40)	.63 (16)	51	69	81
1/4"	ASN-8	AS-8	2.56 (65)	.83 (21)	124	67	84
3/8"	ASN-10	AS-10	3.35 (85)	.98 (25)	247	83	98
1/2"	ASN-15	AS-15	3.74 (95)	1.18 (30)	370	69	96

Application

The plastic silencer is designed to give excellent noise reduction with a minimum effect on air efficiency. The “Trimline” design allows for locating the silencer in the tightest places without extra plumbing or fittings. Fits directly into the exhaust port of most commercial valves. Open surface area of element allows for rapid discharge of air without undesirable back pressure.

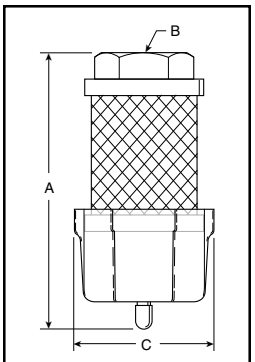
Specifications

Body:
Acetal (Plastic)

Element:
Polyethylene

Pressure Rating:
0 to 150 PSIG
(0 to 10 bar, 0 to 1034 kPa)

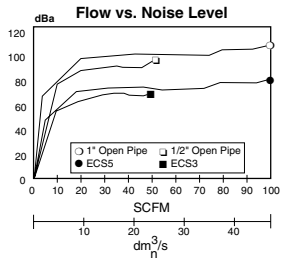
Temperature Rating:
14°F to 140°F (-10°C to 60°C)

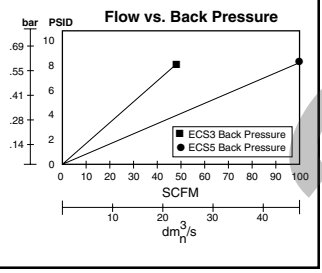


Dimensions:

Model	A	B	C
ECS3	5.30 (135 mm)	1/2" NPT	2.57 (65 mm)
ECS5	7.30 (185mm)	1" NPT	2.57 (65mm)

Performance Characteristics





Features

The ECS (Muffler-Reclassifier) eliminates unwanted oil mist and reduces exhaust noise from pneumatic valves, cylinders and air motors.

- 99.97% Oil removal efficiencies
- 25 dBA Noise attenuation
- 1/2" NPT and 1" NPT
- Disposable units
- Continuous or plugged drain option
- Metal retained construction
- Fast exhaust time

Improve Overall Plant Environment

Exhaust oil mist and noise pollution have a direct impact on worker productivity.

Oil aerosol mist from lubricators and compressors is pervasive and enters the industrial plant environment through the exhaust ports of valves, cylinders and air motors. This rapidly expanding exhaust also produces sudden and excessive noise.

The ECS (Muffler-Reclassifier) is 99.97% efficient at removing the oil aerosols. The ECS also acts as a silencer to lower the dBA levels below O.S.H.A. requirements.

The result is a cleaner, quieter environment which equates to greater work productivity and safety.

Operation

Compressor oils and lubricating oils are exhausted from valves, cylinders and air motors into the ECS. Oil aerosols are “coalesced” into larger droplets and gravity pulls them into the attached drain sump. The sump can then be drained manually or by using a 1/4" ID plastic tube drain. The air flowing into the ECS is also muffled or silenced as it enters the inside of the ECS and passes through the filter media into the atmosphere.

Proven Technology

The ECS units are constructed from the same materials that go into our oil removal coalescing filter elements.
The seamless design insures media uniformity and strength. This proven technology provides high coalescing efficiency with low pressure drop.

The filter media is supported by cylindrical perforated steel retainers both inside and out. These retainers, fully plated for excellent corrosion resistance, give the ECS units high rupture strength in either flow direction. These filters can also be used as high efficiency inlet or bypass filters for vacuum pumps, or breather elements to protect the air above critical process liquids.

ECS3 / ECS5

The ECS solves two problems inherent in compressed air exhaust from valves, cylinders and air motors - oil mist removal and noise abatement.

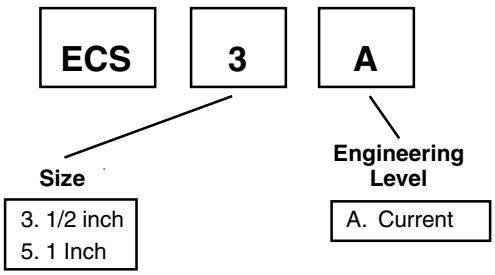
The ECS will improve your industrial plant environment, thereby improving worker productivity.

Specifications

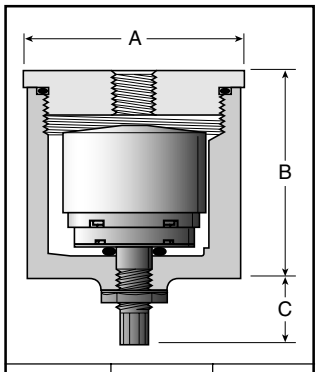
Maximum Operating Temperature
125°F (52°C)

Maximum Line Pressure
100 PSIG (6.8 bar)

Ordering Information



Automatic Drip Leg Drain



A	B	C
2.50	2.37	.87
64 mm	60 mm	22 mm

Features

- Auto drain ported 1/8" to pipe away liquid.
- Drain has manual override.
- Easily serviced without tool.
- 10-250 PSIG range.
- Compact size.

Specifications

Housing & Cap:
Aluminum

Port Threads:
1/4" - 1/2" Top
1/8" Drain

Pressure & Temperature Ratings

Metal Bowl:
0 to 250 PSIG (0 to 17.2 bar)
32°F to 175°F (0°C to 80°C)

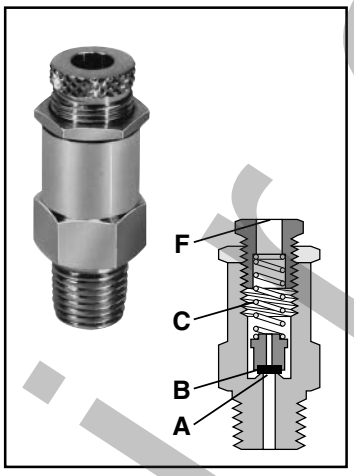
Seals:
Buna N

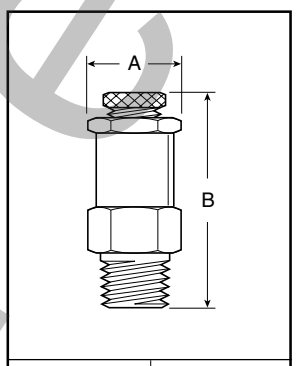
Ordering Information

Consists of Drip Leg Drain Housing WITH Auto Drain.

Model No.	Size
06D1NA	1/4"
06D3NA	1/2"

Relief Valve





A	B
.75 Hex	2.00
19 mm	50.8 mm

Features

- Large relief capacity in a compact size.
- Lightweight aluminum construction with resilient seat.

Application

The RV01A1N Pop Off Relief Valve is designed to protect against excessive pressure buildup in a pneumatic circuit or system.

Operation

With the relief valve mounted in a reservoir or system, the force of system pressure at **(A)** is offset by the force of spring **(C)** acting on poppet seat **(B)**. At pressures lower than the setting, the poppet seat **(B)** is held against the body at **(A)** effecting a seal.

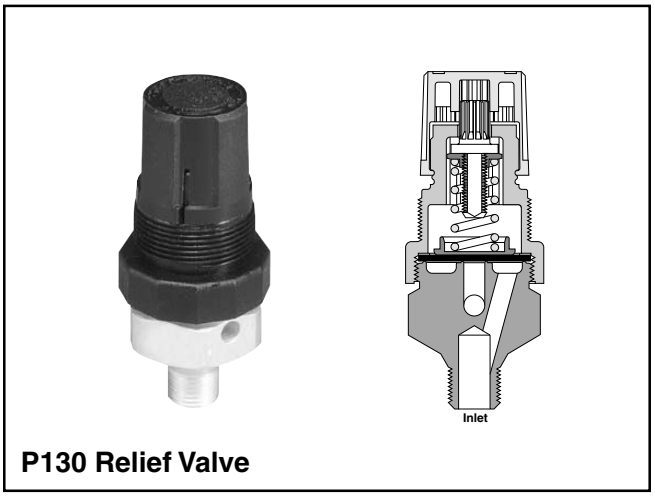
When pressure rises above the set point, the force of the pressure lifts the poppet seat **(B)** off the body at **(A)** allowing the excess pressure to vent to atmosphere at **(F)**. When the excess pressure has been vented, the spring **(C)** acts on the poppet seat **(B)** forcing it to seat on the body at **(A)**, sealing off the flow of air.

Specification

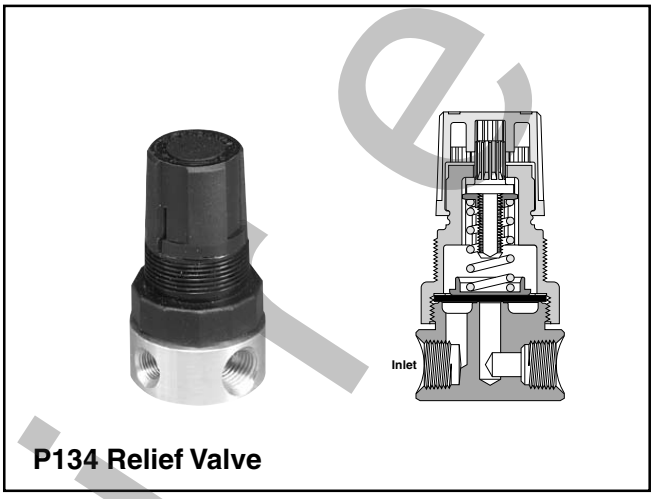
Body, Lock Nut & Adjusting Screw: Aluminum
Seat: Nitrile **Spring:** Steel **Poppet:** Plastic
Operating Temperature: 32°F to 200°F (0°C to 93°C)
Port Threads: 1/4 Inch Male
Relief Range:
50 to 200 PSIG (3.4 to 14 bar) with standard spring.
Consult factory for pressures below 50 PSIG.

Ordering Information

RV01A1N	100
Standard Model With 1/4 Inch Male Thread	Specify Pressure Setting PSIG Using Three Digits – Standard Setting is 100 PSIG



P130 Relief Valve



P134 Relief Valve

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Features

- Compact, sensitive diaphragm-type relief valve.
- Push-pull, locking knob.
- Knob and top work the same as a miniature regulator.
- P130 has lightweight aluminum construction.
- P134 has a brass body, captured exhaust and is an inline type with 3 inlet ports and 1 outlet port.

Applications

- Designed to protect against excessive pressure buildup in a pneumatic circuit or system.
- For use where gradual proportional relief is required.

Operation

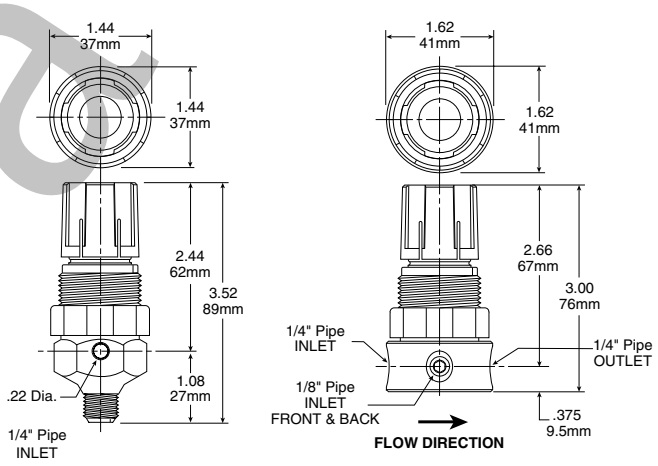
- Turn relief valve knob clockwise for maximum pressure.
- Set pressure going into relief valve at desired pressure.
- Turn relief valve knob counter-clockwise until exhaust starts to bleed.
- Turn relief valve knob clockwise until exhaust stops bleeding. Push to lock knob.

Ordering Information

Relief Valve	Spring Range			
	0-15 PSIG	0-25 PSIG	0-50 PSIG	0-100 PSIG
P130	P130-02AA P130-02AAP*	P130-02A P130-02AP*	P130-02B P130-02BP*	P130-02C P130-02CP*
P134	P134-02AA P134-02AAP*	P134-02A P134-02AP*	P134-02B P134-02BP*	P134-02C P134-02CP*

* Panel mount nut included.

Dimensions



P130 **P134**

Relief Valve Kits

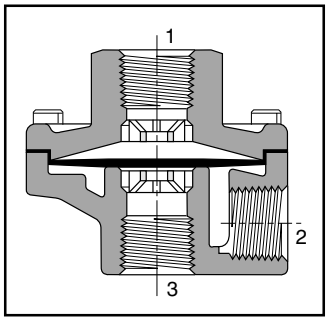
Bonnet Assembly Kit PCKR364Y
Panel Mount Nut PR05X51

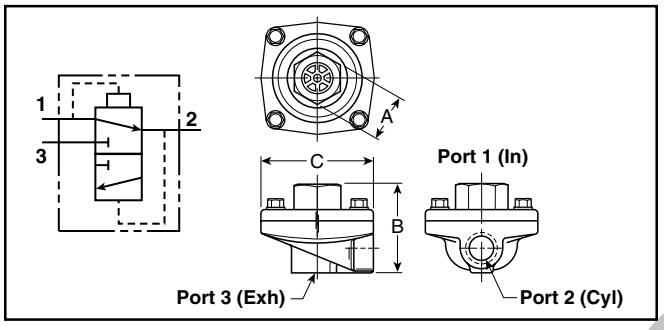
Specifications

Relief Range ..... 0 to 100 PSIG (0 to 6.9 bar)
Maximum Inlet Pressure ..... 300 PSIG (20.7 bar)
Operating Temperature ..... 40°F to 120°F (4°C to 49°C)
Port Threads
P130: ..... 1/4" Pipe Male Only
P134: ..... Inlet Port – Two 1/8" & One 1/4" Pipe
Outlet Port – 1/4" Pipe

Materials of Construction

Adjusting Knob ..... Polypropylene
Adjusting Screw ..... Zinc-plated Steel
Body ..... Aluminum (P130); Brass (P134)
Diaphragm / Disc ..... Buna-N
Nut ..... Chromated Steel
Spring Cage ..... Acetal
Spring ..... Zinc-plated Steel





General Information

Quick exhaust valves provide rapid exhaust of control air when placed between control valve and actuator. They can also be used as shuttle valves. Diaphragm materials are available in urethane, Nitrile, Fluorocarbon, and PTFE to meet a wide variety of operating conditions.

Valve Specifications

Operating Pressure (Air)
Maximum: 150 PSIG
200 PSIG for Model No. 03340 0199 (PTFE diaphragm)
Minimum: 3 PSIG
50 PSIG for Model No. 03340 0199 (PTFE diaphragm)

Operating Temperature
Urethane: 0°F to 180°F* (-18°C to 80°C)
Nitrile: 0°F to 180°F* (-18°C to 80°C)
Fluorocarbon: 0°F to 400°F* (-18°C to 205°C)
PTFE: 0°F to 500°F* (-18°C to 260°C)

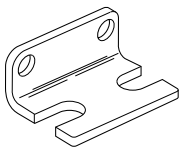
* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require slubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

Body Material: Die cast aluminum
Static Seals: Nitrile standard with urethane (Others see below)
Diaphragm: Standard – Urethane
Optional – Fluorocarbon, PTFE, or Nitrile (Depending on size)

Mounting Bracket Kit – No. 03640 8100

(Including body screws)
For "0R12" and "0R25" sizes.

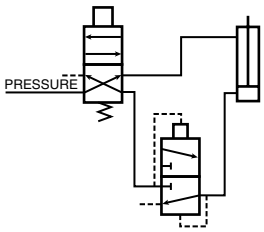


Model Selection, Performance Data and Dimensions

Port			Flow (SCFM†)	Model Number		A	B	C	Service Kit No.
1	2	3		NPTF	BSPP "G"				
STANDARD URETHANE DIAPHRAGMS (Nitrile static seals)									
1/8"	1/8"	1/8"	70	**0R12B**	0RB12B	7/8" Sq.	1.75	1.88	03640 8000
	1/8"	1/4"	70	**0R12NB**	0RB12NB	7/8" Sq.	1.75	1.88	03640 8000
1/4"	1/4"	1/4"	90	**0R25B**	0RB25B	7/8" Sq.	1.75	1.88	03640 8000
	1/4"	3/8"	150	**0R25NB**	0RB25NB	1" Hex	2.06	2.44	03340 0105
	3/8"	3/8"	240	**0R25PB**	0RB25PB	1" Hex	2.06	2.44	03340 0105
3/8"	3/8"	3/8"	240	**0R37B**	0RB37B	1" Hex	2.06	2.44	03340 0105
1/2"	1/2"	1/2"	450	**0R50B**	0RB50B	1-1/2" Hex	2.88	3.38	03475 0109
3/4"	3/4"	3/4"	550	**0R75B**	0RB75B	1-1/2" Hex	2.88	3.38	03475 0109
NITRILE DIAPHRAGMS (Nitrile static seals)									
1/4"	1/4"	3/8"	90	0R25NFB	0RB25NFB	7/8" Sq.	1.75	1.88	03340 8000
	3/8"	3/8"	150	0R25PFB	0RB25PFB	1" Hex	2.06	2.44	03340 8000
3/8"	3/8"	3/8"	240	0R37FB	0RB37FB	1" Hex	2.06	2.44	03340 8000
3/4"	3/4"	3/4"	550	0R75FB	0RB75FB	1-1/2" Hex	2.88	3.38	03475 9000
FLUOROCARBON DIAPHRAGMS for extended temperature operation (Fluorocarbon static seals)									
1/8"	1/8"	1/8"	70	0R12VB	0RB12VB	7/8" Sq.	1.75	1.88	03650 8000
	1/8"	1/4"	70	0R12NVB	0RB12NVB	7/8" Sq.	1.75	1.88	03650 8000
1/4"	1/4"	1/4"	90	0R25VB	0RB25VB	7/8" Sq.	1.75	1.88	03650 8000
3/8"	3/8"	3/8"	240	0R37VB	0RB37VB	1" Hex	2.06	2.44	03340 0319
1/2"	1/2"	1/2"	450	0R50VB	0RB50VB	1-1/2" Hex	2.88	3.38	03475 0120
3/4"	3/4"	3/4"	550	0R75VB	0RB75VB	1-1/2" Hex	2.88	3.38	03475 0120
PTFE DIAPHRAGMS for higher pressure and temperature (Fibre static seals)									
3/8"	3/8"	3/8"	240	0R37TB	0RB37TB	1" Hex	2.06	2.44	03340 0504

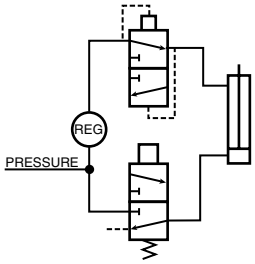
† At 100 PSIG inlet pressure with full pressure drop. **Bold part numbers standard.**

Typical "Quick Exhaust Valve" Applications



Rapid Retraction – Double Acting Cylinder

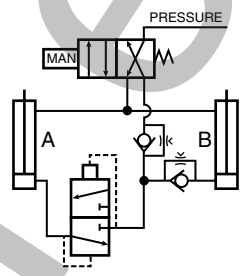
In this circuit, air is exhausted through a Quick Exhaust Valve that is **close coupled** to the cap end of the cylinder. Because the Quick Exhaust Valve has a greater exhaust capacity than the four-way Control Valve, increased cylinder speed can be accomplished with a smaller and less expensive control valve.



Dual Pressure Actuation of Double Acting Cylinder

This circuit utilizes a Quick Exhaust Valve and a three-way Control Valve to permit rapid extension of the cylinder at a high pressure. Retraction can be accomplished at a lower pressure, thus saving air and increasing cylinder life.

NOTE: Line pressure must be 3 or 4 times greater than rod end pressure. Effective working pressure is the differential between the cap and rod end.



Bi-Directional Control of Two Double Acting Cylinders

This circuit provides maximum control with a minimum of valving. A large four-way Control Valve is not needed to permit the rapid retraction of Cylinder A, as the Quick Exhaust Valve performs this function. The extension of Cylinders A and B and retraction of Cylinder B are controlled by Speed Control Valves.

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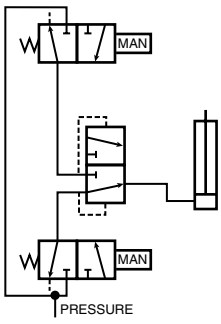
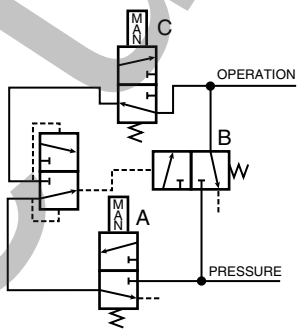
Typical "Shuttle Valve" Applications



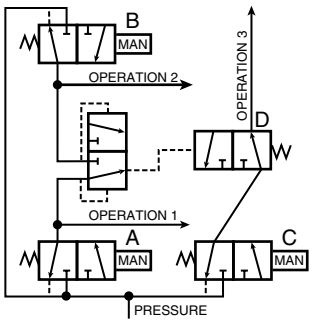
"OR" Circuit

The most common application of the Shuttle Valve is the "OR" Circuit. Here a cylinder or other work device can be actuated by either control valve. The valves can be manually or electrically actuated and located in any position.



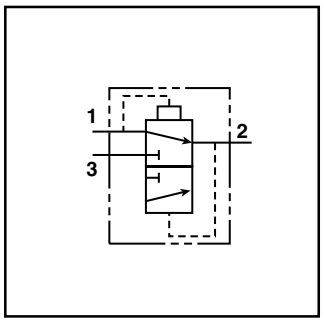
Memory Circuit

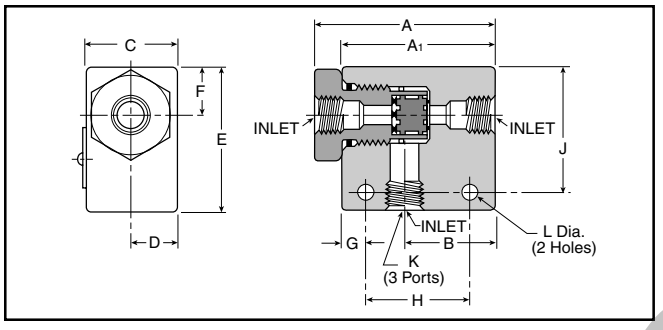
This circuit enables continuous operation once initiated. Pressure is delivered to the circuit when Valve A is actuated. This allows pressure to pass through the shuttle valve actuating Valve B. Pressure then flows through Valve B and also the other side of the shuttle valve which holds Valve B open for continuous operation. To unlock the circuit, Valve C must be opened to exhaust the circuit and allow Valve B to return to its normally closed position.



Interlock

This circuit prevents the occurrence of a specific operation while one or another operation takes place. When either Valve A or B is actuated to perform operation 1 or 2, Valve D is shifted to the closed position and prevents operation 3 from occurring.





General Information

Shuttle valves determine a single pneumatic output from two separate inputs. If pressure is applied to both ports simultaneously, the valve will select the port with the higher pressure.

Valve Specifications

Maximum Operating Pressure
200 PSIG Maximum

3 PSIG Minimum: Differential Pressure

Operating Temperature
0° to160° F*

* Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.

Component Materials

Body Material: Aluminum

Internal Components: Aluminum

Seals: Nitrile

Model Selection and Dimensions

Port Size	Model	Dimensions											
		A	A1	B	C	D	E	F	G	H	J	K	L
1/8"	N164 1001	N/A	1.62	0.81	0.62	0.31	1.00	.281	0.312	1.00	0.75	1/8 - 27	0.219
1/4"	N164 2003	2.50	2.12	1.25	1.25	0.62	2.00	0.67	0.265	1.25	1.35	1/4 - 18	0.219
3/8"	N164 3003	2.50	2.12	1.25	1.25	0.62	2.00	0.67	0.265	1.25	1.35	3/8 - 16	0.219

Performance Data – Flow

Port Size	Model Number	Flow (Cv)
1/8"	N164 1001	0.32
1/4"	N164 2003	1.65
3/8"	N164 3003	2.02