



# SLV Series Pneumatic Lockout Valves Accessories

## Features

- Silencers (mufflers) are aluminum construction
- High flow rates needed for safety lockout valves
- Pressure indicator pops out when pressure of 5 psi or more is present



HVM-34N



SLV-PU

**Note: HVM series exhaust silencers have a maximum pressure of 250 psi (17 bar).**

NITRA SLV Series Pneumatic Lockout Valve Accessories			
Part No.	Description	Price	Weight (lbs)
<u>HVM-18N</u>	NITRA pneumatic exhaust silencer, aluminum, cylindrical, Cv=2, 1/8 in male NPT	\$23.50	0.1
<u>HVM-14N</u>	NITRA pneumatic exhaust silencer, aluminum, cylindrical, Cv=2.7, 1/4 in male NPT	Retired	0.1
<u>HVM-34N-H</u>	NITRA pneumatic exhaust silencer, aluminum, cylindrical, Cv=13.5, 3/4 in male NPT	\$66.00	0.6
<u>HVM-1N</u>	NITRA pneumatic exhaust silencer, aluminum, cylindrical, Cv=16.7, 1 in male NPT	\$66.00	0.6
<u>HVM-114N</u>	NITRA pneumatic exhaust silencer, aluminum, cylindrical, Cv=17.4, 1-1/4 in male NPT	\$66.00	0.6
<u>SLV-PU</u>	NITRA pneumatic pop up pressure indicator, 5 psi, 1/8 in male NPT	\$32.00	0.1

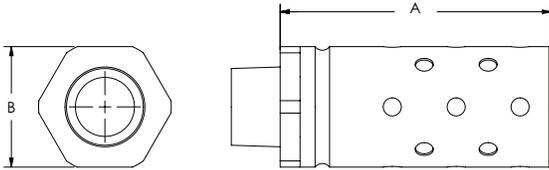


# SLV Series Pneumatic Lockout Valves Accessories

## Nitra High Volume Silencers (Mufflers)

### Dimensions

inches [mm]

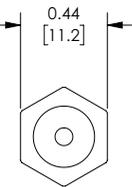
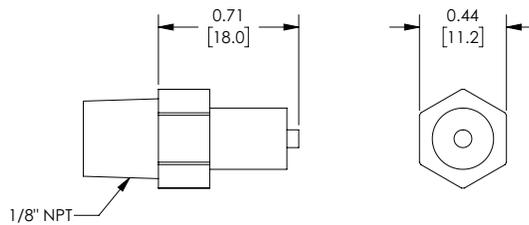


Muller Dimensions		
Part #	A	B
<b>HVM-18N</b>	1.6 [40.64]	0.8 [20.32]
<b>HVM-14N</b>	1.6 [40.64]	0.8 [20.32]
<b>HVM-34N</b>	2.9 [73.66]	1.3 [33.02]
<b>HVM-34N-H</b>	4.5 [114.30]	2.0 [50.80]
<b>HVM-1N</b>	4.5 [114.30]	2.0 [50.80]
<b>HVM-114N</b>	4.5 [114.30]	2.0 [50.80]

## Nitra Pop Up Pressure Indicator

### Dimensions

inches [mm]



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Directional Control Solenoid Valves – AVP Series

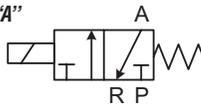


NITRA™ pneumatic AVP series directional control solenoid valves are 3-way stackable poppet style valves with 1/8" NPT ports. They provide 2-position, normally closed, spring return operation with either 24 VDC or 120 VAC solenoid coils. The AVP series can be used in individual valve applications or multiple valves can be field assembled (stacked) to share supply air, simplifying piping connections. The DIN style wiring connector includes LED indication of the solenoid coil status.

## Features

- 3-way stackable poppet style valves
- 1/8" NPT ports
- 2-position, normally closed, spring return
- 24 VDC or 120 VAC solenoid coils
- DIN style wiring connector with LED indication
- Single valve or multiple stacked valve applications
- 2-year warranty

Diagram "A"



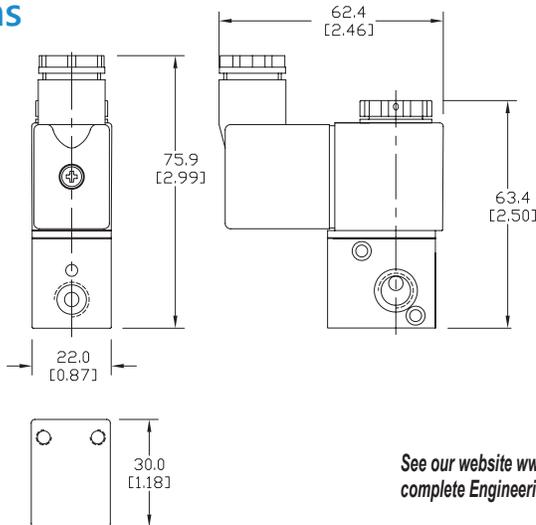
2-Pos, Spring Return

AVP Series Specifications		
Model	AVP-31C1-24D	AVP-31C1-120A
Price	\$34.50	\$34.50
Weight (lbs)	0.3	
Valve Type	3-way 2 position	
Acting	Direct acting, normally closed, spring return	
Diagram	A	A
Port Size	1/8"	
Orifice Size	1.2 mm, Cv=0.051	
Fluid	Air (to be filtered by 40µ filter element)	
Operating Pressure	0 to 120 psi, (0 to 0.83 MPa), (0 to 8.3 bar)	
Voltage	20.4 - 26.4 VDC	102 - 132 VAC (50/60 Hz)
Power Consumption	DC: 3.0 W   AC: 4.5 VA; continuous duty (100% ED)	
Maximum Frequency	10 cycles/sec	
Operating Life	50,000,000 cycles	
Insulation	B class	
Min Response	0.05 sec	
Temperature	-5 to +60 °C (23 to 140 °F)	
Lubrication	Not Required	
Protection	IP65 (DIN40050)	
Connection	11 mm DIN Terminal with Grommet	
Material of Body	Aluminum Alloy	
Agency Approvals	Solenoid CE marked; RoHS	

## Dimensions

mm [inches]

AVP-31C1



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting options



Stacked example using [AVP-31KIT](#) stacking screw kit and shown with mounting bracket [AVP-31BKT](#)



### AVP-31KIT

Note: One kit is required for each additional AVP-31 valve added to the stack.



### AVP-31BKT

Dimensions in mm [inches]



# Pneumatic Directional Control Solenoid Valves – AVS-3 Series



AVS-3221

AVS-3211

NITRA™ pneumatic AVS-3 series directional control solenoid valves are body ported 3-port (3-way) spool valves. Available port sizes are 1/8", 1/4" or 3/8" NPT with flow coefficients (Cv) from 0.67 to 1.67. The single solenoid models provide 2-position, normally closed, spring return operation and the double solenoid models provide 2-position, energize open/energize closed operation. Solenoid coils are available in either 24 VDC or 120 VAC control voltages. The DIN style wiring connector includes LED indication of the solenoid coil status.

**Features**

- Body ported, 3-port (3-way) spool valves
- 1/8", 1/4" or 3/8" NPT ports
- 2-position, single solenoid normally closed spring return; 2-position, double solenoid energize open/energize closed
- 24 VDC or 120 VAC solenoid coils
- DIN style wiring connector with LED indication
- Locking manual operator
- 2-year warranty

Diagram "A"

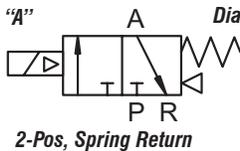
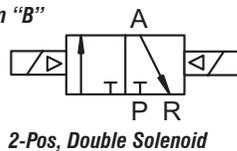


Diagram "B"



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting options

AVS-3 Series Specifications												
Model	AVS-3111-24D		AVS-3111-120A		AVS-3211-24D		AVS-3211-120A		AVS-3222-24D			
Price	\$37.50		\$37.50		\$39.00		\$38.50		\$62.00			
Weight (lb)	0.3		0.3		0.5		0.5		0.7			
Valve Type	3 port 2 position											
Acting	Internally Piloted											
Diagram	A			A			B			B		
Port Size	In/Out=1/8"				In/Out=1/8"				In/Out=1/4"			
Orifice Size	12mm <sup>2</sup> (Cv=0.67)				14mm <sup>2</sup> (Cv=0.78)				16mm <sup>2</sup> (Cv=0.89)			
Fluid	Air (to be filtered by 40µ filter element)											
Pressure	Working: 20~115 psi, (0.15~0.8 MPa), (1.5~8.0 bar); Proof: 215 psi, (1.48 MPa), (14.8 bar)											
Voltage	24 VDC single solenoid	120 VAC single solenoid	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	120 VAC double solenoid			
Power Consumption	DC: 2.5 W   AC: 3.5 VA; continuous duty (100% ED)				DC: 3.0 W   AC: 4.5 VA; continuous duty (100% ED)							
Max Frequency	5 cycles/sec											
Operating Life	50,000,000 cycles											
Insulation	B class											
Min Response	0.05 sec											
Temperature	-5 to +60 °C (23 to 140 °F)											
Lubrication	Not Required											
Protection	IP65 (DIN40050)											
Connection	9.4 mm DIN Terminal				11 mm DIN Terminal							
Body	Aluminum Alloy											
Agency Approvals	Solenoid CE marked; RoHS											



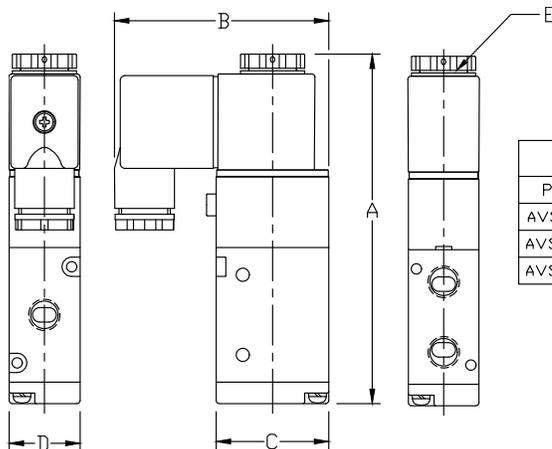
# Pneumatic Directional Control Solenoid Valves – AVS-3 Series

AVS-3 Series Specifications							
Model	AVS-3312-24D	AVS-3312-120A	AVS-3322-24D	AVS-3313-24D	AVS-3313-120A	AVS-3323-24D	AVS-3323-120A
Price	\$55.00	\$55.00	\$84.00	\$55.00	\$55.00	\$89.00	Retired
Weight (lb)	0.7	0.7	0.9	0.7	0.7	0.9	0.9
Valve Type	3 port 2 position						
Acting	Internally Piloted						
Diagram	A		B	A		B	
Port Size	In/Out=1/4"			In/Out=3/8"			
Orifice Size	16 mm <sup>2</sup> (Cv=1.39)			25 mm <sup>2</sup> (Cv=1.67)			
Fluid	Air (to be filtered by 40μ filter element)						
Pressure	<b>Working:</b> 20~115 psi, (0.15~0.8 MPa), (1.5~8.0 bar); <b>Proof:</b> 215 psi, (1.48 MPa), (14.8 bar)						
Voltage	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	24 VDC single solenoid	120 VAC single solenoid	24V DC double solenoid	120 VAC double solenoid
Power Consumption	DC: 3.0 W   AC: 4.5 VA; continuous duty (100% ED)						
Max Freq	5 cycles/sec						
Insulation	B class						
Min Response	0.05 sec						
Temperature	-5 to +60 °C (23 to 140 °F)						
Lubrication	Not Required						
Protection	IP65 (DIN40050)						
Connection	11 mm DIN Terminal						
Body	Aluminum Alloy						
Agency Approvals	Solenoid CE marked; RoHS						

## Dimensions

mm [inches]

AVS-311x,  
AVS-321x,  
AVS-331x



DIMENSION TABLE					
PART NO.	A	B	C	D	E
AVS-311X-XXX	88.4 [3.48]	54.6 [2.15]	27.0 [1.06]	18.0 [0.71]	M7 - 0.5
AVS-321X-XXX	109.0 [4.29]	66.7 [2.63]	35.0 [1.38]	22.0 [0.87]	M8 - 0.75
AVS-331X-XXX	119.8 [4.72]	69.1 [2.72]	40.0 [1.57]	27.0 [1.06]	M8 - 0.75

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

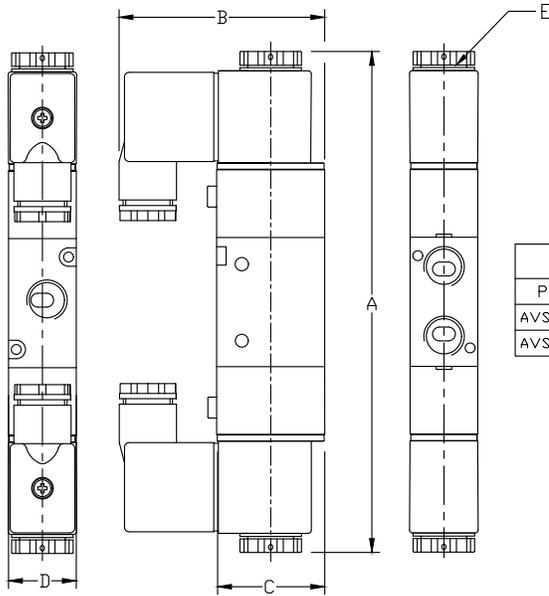


# Pneumatic Directional Control Solenoid Valves – AVS-3 Series

## Dimensions

mm [inches]

AVS-322x,  
AVS-332x



DIMENSION TABLE					
PART NO.	A	B	C	D	E
AVS-322X-XXX	162.8 [6.41]	66.8 [2.63]	34.8 [1.37]	22.0 [0.87]	M8 - 0.75
AVS-332X-XXX	174.8 [6.88]	69.2 [2.72]	40.0 [1.57]	27.0 [1.06]	M8 - 0.75

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Directional Control Solenoid Valves – AVS-5 Series

NITRA™ pneumatic AVS-5 series directional control solenoid valves are body ported 5-port (4-way) spool valves. Available port sizes are 1/8", 1/4", 3/8" or 1/2" NPT with flow coefficients (Cv) from 0.50 to 2.79. Models are available with single solenoid, spring return or double solenoid 2-position operation. In addition, double solenoid models are available with 3-position, center closed or center exhaust operation. Solenoid coils are available in either 24 VDC or 120 VAC control voltages. The AVS-5 series can be used in individual valve applications or multiple valves can be field assembled on AM-5 series manifolds simplifying piping connections. AM-5 series manifolds are available in 2, 4, 6 or 8 stations. The DIN style wiring connector includes LED indication of the solenoid coil status.

AVS-5211



AVS-5221 Stacked solenoids shown mounted on optional manifold

## Features

- Body ported, 5-port (4-way) spool valves
- 1/8", 1/4", 3/8" or 1/2" NPT ports
- 2-position, single solenoid normally closed, spring return;  
2-position, double solenoid, energize open/energize closed;  
3-position, double solenoid center closed or center exhaust
- 24 VDC or 120 VAC solenoid coils
- DIN style wiring connector with LED indication
- Single valve or multiple manifold mounted valve applications
- Locking manual operator
- 2-year warranty



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting and cable options



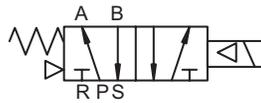
AVS-5 Series Specifications																
Model	AVS-5111-24D	AVS-5111-120A	AVS-5121-24D	AVS-5121-120A	AVS-513C1-24D	AVS-513C1-120A	AVS-519E1-24D	AVS-519E1-120A	AVS-5211-24D	AVS-5211-120A	AVS-5221-24D	AVS-5221-120A	AVS-5212-24D	AVS-5212-120A	AVS-5222-24D	AVS-5222-120A
Price	\$37.50	\$37.50	\$61.00	\$61.00	\$86.00	\$86.00	\$86.00	Retired	\$38.50	\$39.00	\$62.00	\$64.00	\$38.00	\$39.00	\$62.00	\$64.00
Weight (lb)	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.8	0.8	0.5	0.5	0.8	0.8
Valve Type	5 port 2 position				5 port 3 position				5 port 2 position							
Acting	Internally Piloted															
Diagram	A		B		C		D		A		B		A		B	
Port Size	In/Out/Exhaust=1/8"				In/Out/Exhaust=1/8"				In/Out/Exhaust=1/8"				In/Out=1/4", Exhaust=1/8"			
Orifice Size	12 mm <sup>2</sup> (Cv=0.67)				9 mm <sup>2</sup> (Cv=0.50)				14 mm <sup>2</sup> (Cv=0.78)				16 mm <sup>2</sup> (Cv=0.89)			
Fluid	Air (to be filtered by 40µ filter element)															
Pressure	Working: 20~115 psi, (0.15~0.8 MPa), (1.5~8.0 bar); Proof: 215 psi, (1.48 MPa), (14.8 bar)															
Voltage (VAC @ 50/60 Hz)	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	120 VAC double solenoid	24 VDC center closed double solenoid	120 VAC center closed double solenoid	24 VDC center exhaust double solenoid	120 VAC center exhaust double solenoid	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	120 VAC double solenoid	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	120 VAC double solenoid
Power Consumption	DC: 2.5 W   AC: 3.5 VA; continuous duty (100% ED)								DC: 3.0 W   AC: 4.5 VA; continuous duty (100% ED)							
Max Frequency	5 cycles/sec				3 cycles/sec				5 cycles/sec							
Operating Life	50,000,000 cycles															
Insulation	B class															
Min Response	0.05 sec															
Temperature	-5 to +60 °C (23 to 140 °F)															
Lubrication	Not Required															
Protection	IP65 (DIN40050)															
Connection	9.4 mm DIN Terminal								11 mm DIN Terminal							
Body	Aluminum Alloy															
Agency Approvals	Solenoid CE marked; RoHS															



# Pneumatic AVS Directional Control Solenoid Valves – AVS-5 Series



Diagram "A"



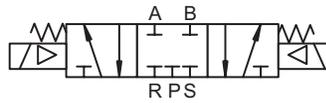
2-Pos, Spring Return

Diagram "B"



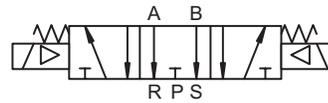
2-Pos, Double Solenoid

Diagram "C"



3-Pos, Closed Center

Diagram "D"



3-Pos, Exhaust Center

## AVS-5 Series Specifications

Model	AVS-5312-24D	AVS-5312-120A	AVS-5322-24D	AVS-5322-120A	AVS-5313-24D	AVS-5313-120A	AVS-5323-24D	AVS-5323-120A	AVS-523C1-24D	AVS-523C1-120A	AVS-523E1-24D	AVS-523E1-120A	AVS-523C2-24D	AVS-523C2-120A	AVS-523E2-24D	AVS-523E2-120A
Price	\$53.00	\$53.00	\$76.00	\$78.00	\$53.00	\$53.00	\$76.00	\$78.00	\$103.00	\$108.00	\$103.00	\$103.00	\$103.00	\$103.00	\$103.00	\$103.00
Weight (lb)	0.8	0.8	1.0	1.0	0.7	0.7	1.0	1.0	0.9	0.8	0.9	0.9	0.9	0.8	0.9	0.8
Valve Type	5 port 2 position								5 port 3 position							
Acting	Internally Piloted															
Diagram	A		B		A		B		C		D		C		D	
Port Size	In/Out/Exhaust=1/4"				In/Out=3/8", Exhaust=1/4"				In/Out/Exhaust=1/8"				In/Out=1/4", Exhaust=1/8"			
Orifice Size	25 mm <sup>2</sup> (Cv=1.4)				30 mm <sup>2</sup> (Cv=1.68)				12 mm <sup>2</sup> (Cv=0.67)							
Fluid	Air (to be filtered by 40µ filter element)															
Pressure	<b>Working:</b> 20~115 psi, (0.15~0.8 MPa), (1.5~8.0 bar); <b>Proof:</b> 215 psi, (1.48 MPa), (14.8 bar)															
Voltage (VAC @ 50/60 Hz)	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	120 VAC double solenoid	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	120 VAC double solenoid	24 VDC center closed double solenoid	120 VAC center closed double solenoid	24 VDC center exhaust double solenoid	120 VAC center exhaust double solenoid	24 VDC center closed double solenoid	120 VAC center closed double solenoid	24 VDC center exhaust double solenoid	120 VAC center exhaust double solenoid
Power Consumption	DC: 3.0 W   AC: 4.5 VA; continuous duty (100% ED)															
Max Frequency	4 cycles/sec								3 cycles/sec							
Operating Life	50,000,000 cycles															
Insulation	B class															
Min Response	0.05 sec															
Temperature	-5 to +60 °C (23 to 140 °F)															
Lubrication	Not Required															
Protection	IP65 (DIN40050)															
Connection	11 mm DIN Terminal															
Body	Aluminum Alloy															
Agency Approvals	Solenoid CE marked; RoHS															



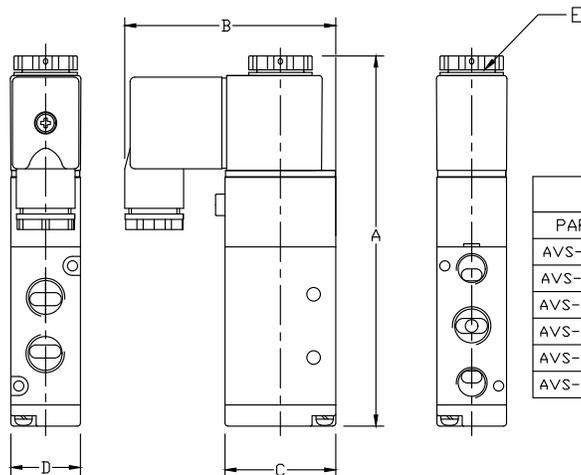
# Pneumatic AVS Directional Control Solenoid Valves – AVS-5 Series

AVS-5 Series Specifications																
Model	AVS-533C2-24D	AVS-533C2-120A	AVS-533E2-24D	AVS-533E2-120A	AVS-533C3-24D	AVS-533C3-120A	AVS-533E3-24D	AVS-533E3-120A	AVS-5414-24D	AVS-5414-120A	AVS-5424-24D	AVS-5424-120A	AVS-543C4-24D	AVS-543C4-120A	AVS-543E4-24D	AVS-543E4-120A
Price	\$146.00	\$146.00	\$146.00	\$146.00	\$146.00	\$146.00	\$146.00	\$146.00	\$71.00	\$83.00	\$107.00	\$107.00	\$149.00	\$149.00	\$149.00	\$149.00
Weight (lb)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.3	1.3	1.5	1.5	1.7	1.7	1.7	1.7
Valve Type	5 port 3 position								5 port 2 position				5 port 3 position			
Acting	Internally Piloted															
Diagram	C	D	C	D	C	D	A	B	C	D						
Port Size	In/Out/Exhaust=1/4"				In/Out=3/8", Exhaust=1/4"				In/Out/Exhaust=1/2"							
Orifice Size	18 mm <sup>2</sup> (Cv=1.0)								50 mm <sup>2</sup> (Cv=2.79)				30 mm <sup>2</sup> (Cv=1.68)			
Fluid	Air (to be filtered by 40µ filter element)															
Pressure	Working: 20–115 psi, (0.15–0.8 MPa), (1.5–8.0 bar); Proof: 215 psi, (1.48 MPa), (14.8 bar)															
Voltage (VAC @ 50/60 Hz)	24 VDC center closed double solenoid	120 VAC center closed double solenoid	24 VDC center exhaust double solenoid	120 VAC center exhaust double solenoid	24 VDC center closed double solenoid	120 VAC center closed double solenoid	24 VDC center exhaust double solenoid	120 VAC center exhaust double solenoid	24 VDC single solenoid	120 VAC single solenoid	24 VDC double solenoid	120 VAC double solenoid	24 VDC center closed double solenoid	120 VAC center closed double solenoid	24 VDC center exhaust double solenoid	120 VAC center exhaust double solenoid
Power Consumption	DC: 3.0 W   AC: 4.5 VA; continuous duty (100% ED)															
Max Frequency	3 cycles/sec															
Operating Life	50,000,000 cycles															
Insulation	B class															
Min Response	0.05 sec															
Temperature	-5 to +60 °C (23 to 140 °F)															
Lubrication	Not Required															
Protection	IP65 (DIN40050)															
Connection	11 mm DIN Terminal															
Body	Aluminum Alloy															
Agency Approvals	Solenoid CE marked; RoHS															

## Dimensions

mm [inches]

AVS-5111,  
AVS-5211,  
AVS-5212,  
AVS-5312,  
AVS-5313,  
AVS-5414



DIMENSION TABLE					
PART NO.	A	B	C	D	E
AVS-5111-XXX	99.4 [3.91]	55.0 [2.17]	27.0 [1.06]	18.0 [0.71]	M7 - 0.5
AVS-5211-XXX	117.1 [4.61]	66.7 [2.63]	35.0 [1.38]	22.0 [0.87]	M8 - 0.75
AVS-5212-XXX	117.1 [4.61]	66.7 [2.63]	35.0 [1.38]	22.0 [0.87]	M8 - 0.75
AVS-5312-XXX	134.9 [5.31]	69.2 [2.72]	40.0 [1.57]	27.0 [1.06]	M8 - 0.75
AVS-5313-XXX	134.9 [5.31]	69.2 [2.72]	40.0 [1.57]	27.0 [1.06]	M8 - 0.75
AVS-5414-XXX	168.4 [6.63]	74.0 [2.91]	50.0 [1.97]	34.0 [1.34]	M8 - 0.75

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

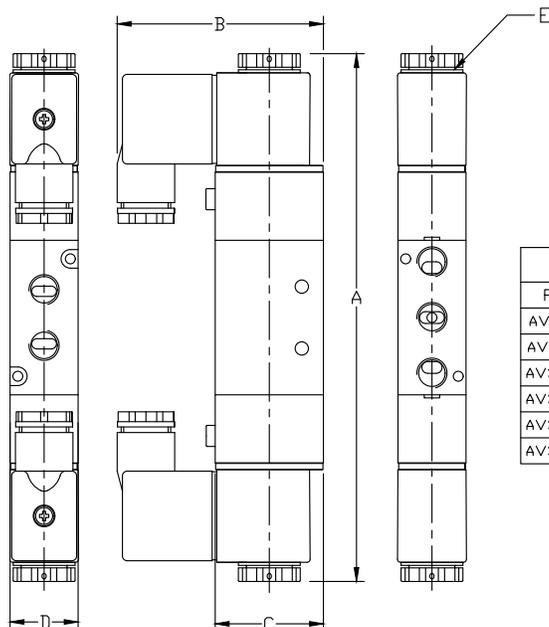


# Pneumatic Directional Control Solenoid Valves – AVS-5 Series

## Dimensions

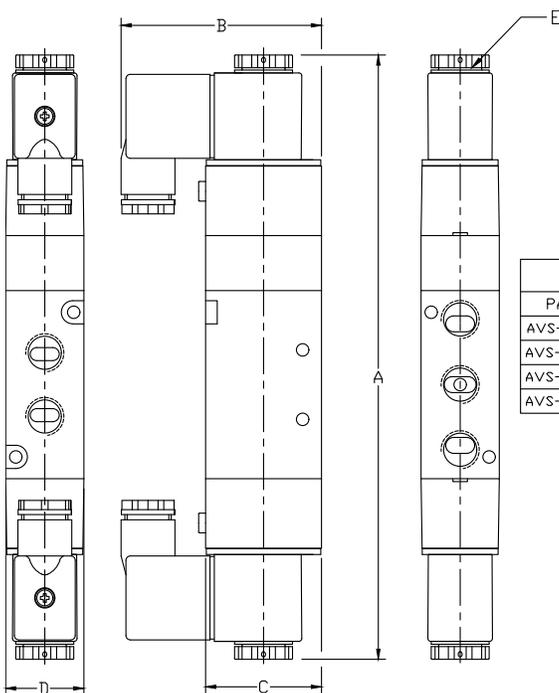
mm [inches]

- AVS-5121,**
- AVS-5221,**
- AVS-5222,**
- AVS-5322,**
- AVS-5323,**
- AVS-5424**



DIMENSION TABLE					
PART NO.	A	B	C	D	E
AVS-5121-XXX	142.4 [5.61]	54.8 [2.16]	27.0 [1.06]	18.0 [0.71]	M7 - 0.5
AVS-5221-XXX	170.8 [6.72]	66.7 [2.63]	35.0 [1.38]	22.0 [0.87]	M8 - 0.75
AVS-5222-XXX	170.8 [6.72]	66.7 [2.63]	35.0 [1.38]	22.0 [0.87]	M8 - 0.75
AVS-5322-XXX	189.8 [7.47]	69.2 [2.72]	40.0 [1.57]	27.0 [1.06]	M8 - 0.75
AVS-5323-XXX	189.8 [7.47]	69.2 [2.72]	40.0 [1.57]	27.0 [1.06]	M8 - 0.75
AVS-5424-XXX	222.8 [8.77]	74.0 [2.91]	50.0 [1.97]	34.0 [1.34]	M8 - 0.75

- AVS-513xx,**
- AVS-523xx,**
- AVS-533xx,**
- AVS-543xx**



DIMENSION TABLE					
PART NO.	A	B	C	D	E
AVS-513XX-XXX	157.4 [6.20]	54.8 [2.16]	26.6 [1.05]	18.0 [0.71]	M7 - 0.5
AVS-523XX-XXX	189.8 [7.47]	66.7 [2.63]	35.0 [1.38]	22.0 [0.87]	M8 - 0.75
AVS-533XX-XXX	208.8 [8.22]	69.2 [2.72]	40.0 [1.57]	27.0 [1.06]	M8 - 0.75
AVS-543XX-XXX	243.8 [9.60]	74.0 [2.91]	50.0 [1.97]	34.0 [1.34]	M8 - 0.75

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic A-Series Direction Control Solenoid Valves - Accessories



**AVC1-12D**



**AVC2-12D**

Pneumatic A-Series Directional Control Solenoid Valve Series Accessories			
Part No.	Price	Description	Weight (lb)
<a href="#"><u>AVC1-12D</u></a>	\$13.00	NITRA solenoid coil, 12 VDC, 2.5 W. For use with AVS-31 and AVS-51 series valves.	0.1
<a href="#"><u>AVC1-24D</u></a>	\$13.00	NITRA solenoid coil, 24 VDC, 2.5 W. For use with AVS-31 and AVS-51 series valves.	0.1
<a href="#"><u>AVC1-24A</u></a>	\$13.00	NITRA solenoid coil, 24 VAC, 4.0 VA. For use with AVS-31 and AVS-51 series valves.	0.1
<a href="#"><u>AVC1-120A</u></a>	\$13.00	NITRA solenoid coil, 120 VAC, 3.5 VA. For use with AVS-31 and AVS-51 series valves.	0.1
<a href="#"><u>AVC2-12D</u></a>	\$13.50	NITRA solenoid coil, 12 VDC, 3W. For use with AVP-31, AVS-32, AVS-33, AVS-52, AVS-53, AVS-54 series valves and ASD series soft starters.	0.2
<a href="#"><u>AVC2-24D</u></a>	\$13.50	NITRA solenoid coil, 24 VDC, 3W. For use with AVP-31, AVS-32, AVS-33, AVS-52, AVS-53, AVS-54 series valves and ASD series soft starters.	0.2
<a href="#"><u>AVC2-24A</u></a>	\$13.00	NITRA solenoid coil, 24 VAC, 5 VA. For use with AVP-31, AVS-32, AVS-33, AVS-52, AVS-53, AVS-54 series valves and ASD series soft starters.	0.2
<a href="#"><u>AVC2-120A</u></a>	\$13.00	NITRA solenoid coil, 120 VAC, 4.5 VA. For use with AVP-31, AVS-32, AVS-33, AVS-52, AVS-53, AVS-54 series valves and ASD series soft starters.	0.2
<a href="#"><u>AVP-31BKT</u></a>	\$2.25	NITRA individual mounting bracket, plated steel. For use with AVP-31 directional control valves.	0.1
<a href="#"><u>AVP-31KIT</u></a>	\$3.25	NITRA stacking screws, for use with AVP-31 directional control valves. One kit is required for each additional AVP-31 valve added to the stack.	0.1

## Dimensions

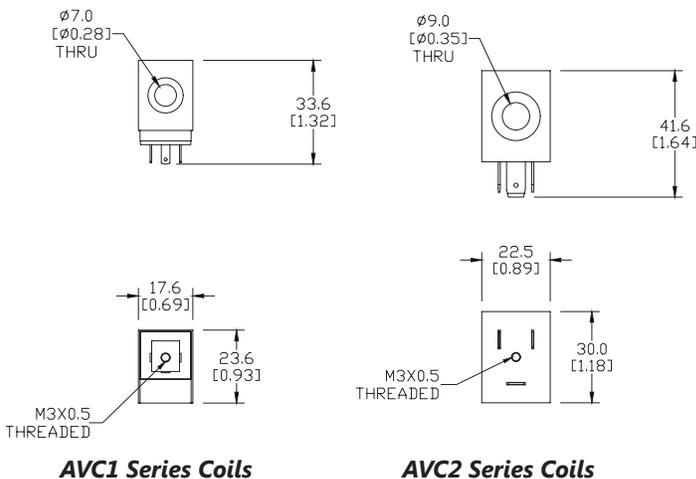
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**AVP-31BKT**

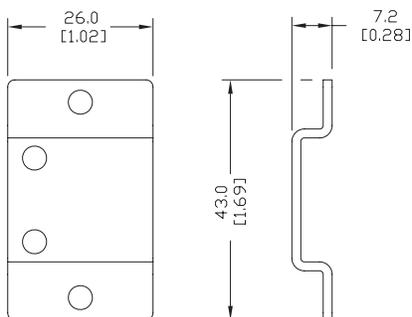


**AVP-31KIT**



**AVC1 Series Coils**

**AVC2 Series Coils**



**AVP-31BKT**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Directional Control Solenoid Valve Manifolds and Accessories



**AM-3 Series Manifolds**



**AM-31BP**

Pneumatic Directional Control Solenoid Valve Series Accessories			
Part No.	Price	Description	Weight (lb)
<a href="#"><u>AM-312</u></a>	\$27.00	NITRA pneumatic valve manifold, aluminum, 2 stations, (2) 1/4 in FNPT inlet port(s), (2) 1/4 in FNPT exhaust port(s). For use with AVS-31 series.	0.2
<a href="#"><u>AM-314</u></a>	\$39.00	NITRA pneumatic valve manifold, aluminum, 4 stations, (2) 1/4 in FNPT inlet port(s), (2) 1/4 in FNPT exhaust port(s). For use with AVS-31 series.	0.3
<a href="#"><u>AM-316</u></a>	\$47.00	NITRA pneumatic valve manifold, aluminum, 6 stations, (2) 1/4 in FNPT inlet port(s), (2) 1/4 in FNPT exhaust port(s). For use with AVS-31 series.	0.4
<a href="#"><u>AM-318</u></a>	\$61.00	NITRA pneumatic valve manifold, aluminum, 8 stations, (2) 1/4 in FNPT inlet port(s), (2) 1/4 in FNPT exhaust port(s). For use with AVS-31 series.	0.5
<a href="#"><u>AM-31BP</u></a>	\$5.25	NITRA blanking plate, plated steel. For use with AM-31 series manifolds.	0.1
<a href="#"><u>AM-322</u></a>	\$25.00	NITRA pneumatic valve manifold, aluminum, 2 stations, (2) 1/4 in FNPT inlet port(s), (2) 1/4 in FNPT exhaust port(s). For use with AVS-32 series.	0.2
<a href="#"><u>AM-324</u></a>	\$44.00	NITRA pneumatic valve manifold, aluminum, 4 stations, (2) 1/4 in FNPT inlet port(s), (2) 1/4 in FNPT exhaust port(s). For use with AVS-32 series.	0.4
<a href="#"><u>AM-326</u></a>	\$62.00	NITRA pneumatic valve manifold, aluminum, 6 stations, (2) 1/4 in FNPT inlet port(s), (2) 1/4 in FNPT exhaust port(s). For use with AVS-32 series.	0.5
<a href="#"><u>AM-328</u></a>	\$81.00	NITRA pneumatic valve manifold, aluminum, 8 stations, (2) 1/4 in FNPT inlet port(s), (2) 1/4 in FNPT exhaust port(s). For use with AVS-32 series.	0.7
<a href="#"><u>AM-32BP</u></a>	\$5.25	NITRA blanking plate, plated steel. For use with AM-32 series manifolds.	0.1
<a href="#"><u>AM-332</u></a>	\$28.00	NITRA pneumatic valve manifold, aluminum, 2 stations, (2) 3/8 in FNPT inlet port(s), (2) 3/8 in FNPT exhaust port(s). For use with AVS-33 series.	0.4
<a href="#"><u>AM-334</u></a>	\$50.00	NITRA pneumatic valve manifold, aluminum, 4 stations, (2) 3/8 in FNPT inlet port(s), (2) 3/8 in FNPT exhaust port(s). For use with AVS-33 series.	0.6
<a href="#"><u>AM-336</u></a>	\$90.00	NITRA pneumatic valve manifold, aluminum, 6 stations, (2) 3/8 in FNPT inlet port(s), (2) 3/8 in FNPT exhaust port(s). For use with AVS-33 series.	0.9
<a href="#"><u>AM-338</u></a>	\$95.00	NITRA pneumatic valve manifold, aluminum, 8 stations, (2) 3/8 in FNPT inlet port(s), (2) 3/8 in FNPT exhaust port(s). For use with AVS-33 series.	1.1
<a href="#"><u>AM-33BP</u></a>	\$6.00	NITRA blanking plate, plated steel. For use with AM-33 series manifolds.	0.1
<a href="#"><u>AM-512</u></a>	Retired	NITRA pneumatic valve manifold, aluminum, 2 stations, (2) 1/4 in FNPT inlet port(s), (4) 1/4 in FNPT exhaust port(s). For use with AVS-51 series.	0.4
<a href="#"><u>AM-514</u></a>	\$24.50	NITRA pneumatic valve manifold, aluminum, 4 stations, (2) 1/4 in FNPT inlet port(s), (4) 1/4 in FNPT exhaust port(s). For use with AVS-51 series.	0.6
<a href="#"><u>AM-516</u></a>	\$34.50	NITRA pneumatic valve manifold, aluminum, 6 stations, (2) 1/4 in FNPT inlet port(s), (4) 1/4 in FNPT exhaust port(s). For use with AVS-51 series.	0.8
<a href="#"><u>AM-518</u></a>	\$48.50	NITRA pneumatic valve manifold, aluminum, 8 stations, (2) 1/4 in FNPT inlet port(s), (4) 1/4 in FNPT exhaust port(s). For use with AVS-51 series.	1.1
<a href="#"><u>AM-51BP</u></a>	\$6.75	NITRA blanking plate, plated steel. For use with AM-51 series manifolds.	0.1
<a href="#"><u>AM-522</u></a>	\$18.50	NITRA pneumatic valve manifold, aluminum, 2 stations, (2) 1/4 in FNPT inlet port(s), (4) 1/4 in FNPT exhaust port(s). For use with AVS-52 series.	0.5
<a href="#"><u>AM-524</u></a>	\$35.00	NITRA pneumatic valve manifold, aluminum, 4 stations, (2) 1/4 in FNPT inlet port(s), (4) 1/4 in FNPT exhaust port(s). For use with AVS-52 series.	0.9
<a href="#"><u>AM-526</u></a>	\$51.00	NITRA pneumatic valve manifold, aluminum, 6 stations, (2) 1/4 in FNPT inlet port(s), (4) 1/4 in FNPT exhaust port(s). For use with AVS-52 series.	1.2
<a href="#"><u>AM-528</u></a>	\$68.00	NITRA pneumatic valve manifold, aluminum, 8 stations, (2) 1/4 in FNPT inlet port(s), (4) 1/4 in FNPT exhaust port(s). For use with AVS-52 series.	1.5
<a href="#"><u>AM-52BP</u></a>	\$7.75	NITRA blanking plate, plated steel. For use with AM-52 series manifolds.	0.1



# Pneumatic Directional Control Solenoid Valve Manifolds and Accessories



**AM-5 Series Manifolds**



**AM-31GS**

Pneumatic Directional Control Solenoid Valve Series Accessories Continued			
Part No.	Price	Description	Weight (lb)
<a href="#"><u>AM-532</u></a>	\$24.00	NITRA pneumatic valve manifold, aluminum, 2 stations, (2) 3/8 in FNPT inlet port(s), (4) 3/8 in FNPT exhaust port(s). For use with AVS-53 series.	0.8
<a href="#"><u>AM-534</u></a>	\$48.00	NITRA pneumatic valve manifold, aluminum, 4 stations, (2) 3/8 in FNPT inlet port(s), (4) 3/8 in FNPT exhaust port(s). For use with AVS-53 series.	1.4
<a href="#"><u>AM-536</u></a>	\$71.00	NITRA pneumatic valve manifold, aluminum, 6 stations, (2) 3/8 in FNPT inlet port(s), (4) 3/8 in FNPT exhaust port(s). For use with AVS-53 series.	1.9
<a href="#"><u>AM-538</u></a>	\$96.00	NITRA pneumatic valve manifold, aluminum, 8 stations, (2) 3/8 in FNPT inlet port(s), (4) 3/8 in FNPT exhaust port(s). For use with AVS-53 series.	2.5
<a href="#"><u>AM-53BP</u></a>	\$7.75	NITRA blanking plate, plated steel. For use with AM-53 series manifolds.	0.1
<a href="#"><u>AM-542</u></a>	\$32.00	NITRA pneumatic valve manifold, aluminum, 2 stations, (2) 1/2 in FNPT inlet port(s), (4) 1/2 in FNPT exhaust port(s). For use with AVS-54 series.	1.7
<a href="#"><u>AM-544</u></a>	\$65.00	NITRA pneumatic valve manifold, aluminum, 4 stations, (2) 1/2 in FNPT inlet port(s), (4) 1/2 in FNPT exhaust port(s). For use with AVS-54 series.	2.8
<a href="#"><u>AM-546</u></a>	\$100.00	NITRA pneumatic valve manifold, aluminum, 6 stations, (2) 1/2 in FNPT inlet port(s), (4) 1/2 in FNPT exhaust port(s). For use with AVS-54 series.	4.0
<a href="#"><u>AM-548</u></a>	\$119.00	NITRA pneumatic valve manifold, aluminum, 8 stations, (2) 1/2 in FNPT inlet port(s), (4) 1/2 in FNPT exhaust port(s). For use with AVS-54 series.	5.2
<a href="#"><u>AM-54BP</u></a>	\$7.75	NITRA blanking plate, plated steel. For use with AM-54 series manifolds.	0.1
<a href="#"><u>AM-31GS</u></a>	\$5.50	NITRA manifold mounting set, for use with AM-31 series manifolds.	0.1
<a href="#"><u>AM-32GS</u></a>	\$6.50	NITRA manifold mounting set, for use with AM-32 series manifolds.	0.1
<a href="#"><u>AM-33GS</u></a>	\$6.50	NITRA manifold mounting set, for use with AM-33 series manifolds.	0.1
<a href="#"><u>AM-51GS</u></a>	\$5.50	NITRA manifold mounting set, for use with AM-51 series manifolds.	0.1
<a href="#"><u>AM-52GS</u></a>	\$6.50	NITRA manifold mounting set, for use with AM-52 series manifolds.	0.1
<a href="#"><u>AM-53GS</u></a>	\$6.50	NITRA manifold mounting set, for use with AM-53 series manifolds.	0.1
<a href="#"><u>AM-54GS</u></a>	\$6.75	NITRA manifold mounting set, for use with AM-54 series manifolds.	0.1

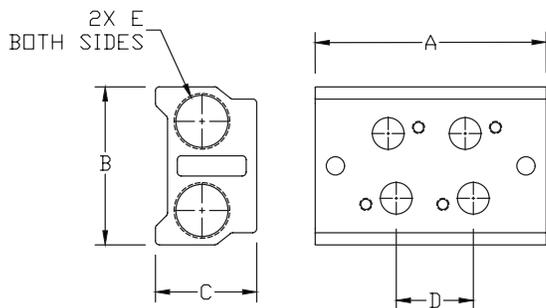


# Pneumatic Directional Control Solenoid Valve Manifolds and Accessories

## Dimensions

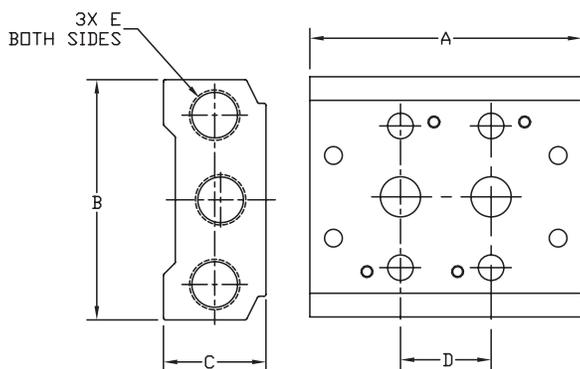
mm [inches]

### AM 3x Series Manifolds



MANIFOLD DIMENSIONS					
PART NO.	A	B	C	D	E
AM-312	57.0 [2.24]	39.0 [1.54]	25.0 [0.98]	19.0 [0.75]	1/4 NPT
AM-314	95.0 [3.74]			3X 19.0 [0.75]	
AM-316	133.0 [5.24]			5X 19.0 [0.75]	
AM-318	171.0 [6.73]			7X 19.0 [0.75]	
AM-322	69.0 [2.72]	45.0 [1.77]	25.0 [0.98]	23.0 [0.91]	
AM-324	115.0 [4.53]			3X 23.0 [0.91]	
AM-326	161.0 [6.34]			5X 23.0 [0.91]	
AM-328	207.0 [8.15]			7X 23.0 [0.91]	
AM-332	82.0 [3.23]	52.0 [2.05]	29.0 [1.14]	28.0 [1.10]	3/8 NPT
AM-334	138.0 [5.46]			3X 28.0 [1.10]	
AM-336	194.0 [7.64]			5X 28.0 [1.10]	
AM-338	250.0 [9.84]			7X 28.0 [1.10]	

### AM 5x Series Manifolds



MANIFOLD DIMENSIONS					
PART NO.	A	B	C	D	E
AM-512	57.0 [2.24]	58.0 [2.28]	25.0 [0.98]	19.0 [0.75]*	1/4 NPT
AM-514	95.0 [3.74]			3X 19.0 [0.75]*	
AM-516	133.0 [5.24]			5X 19.0 [0.75]*	
AM-518	171.0 [6.73]			7X 19.0 [0.75]*	
AM-522	69.0 [2.72]	61.0 [2.40]	26.0 [1.02]	23.0 [0.91]	
AM-524	115.0 [4.53]			3X 23.0 [0.91]	
AM-526	161.0 [6.34]			5X 23.0 [0.91]	
AM-528	207.0 [8.15]			7X 23.0 [0.91]	
AM-532	82.0 [3.23]	75.0 [2.95]	30.0 [1.19]	28.0 [1.10]	3/8 NPT
AM-534	138.0 [5.46]			3X 28.0 [1.10]	
AM-536	194.0 [7.64]			5X 28.0 [1.10]	
AM-538	250.0 [9.84]			7X 28.0 [1.10]	
AM-542	98.0 [3.86]	104.0 [4.09]	38.0 [1.50]	35.0 [1.38]	1/2 NPT
AM-544	168.0 [6.61]			3X 35.0 [1.38]	
AM-546	238.0 [9.37]			5X 35.0 [1.38]	
AM-548	308.0 [12.13]			7X 35.0 [1.38]	

\* Exhaust holes have 1mm offset from spacing centerline.

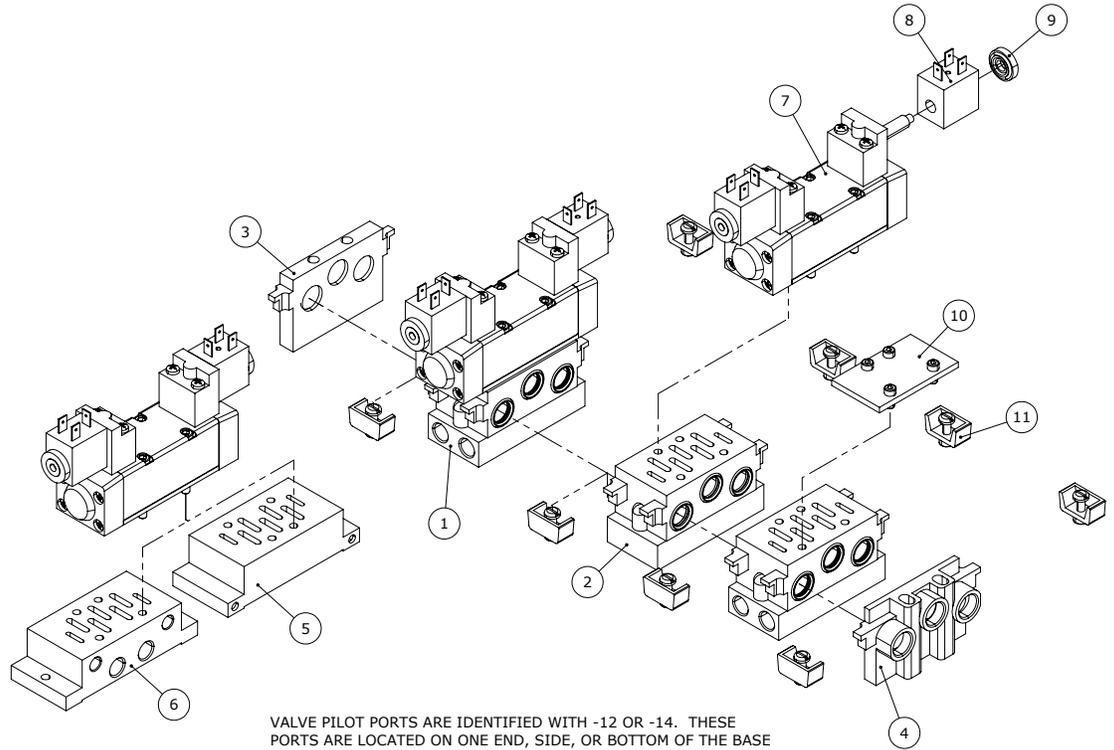
See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# ISO 5599 Solenoid Valves, Bases, Manifolds and Accessories

NITRA ISO 5599 valves and other components are a robust directional control solution that conforms to ISO 5599/1 standard. Components are available in size 1 or size 2 to deliver excellent performance for many industrial pneumatic systems. Valves and bases are interchangeable with other 5599/1 systems from other manufacturers. Bases and manifolds are available in either G-thread (BSPP) or NPT.

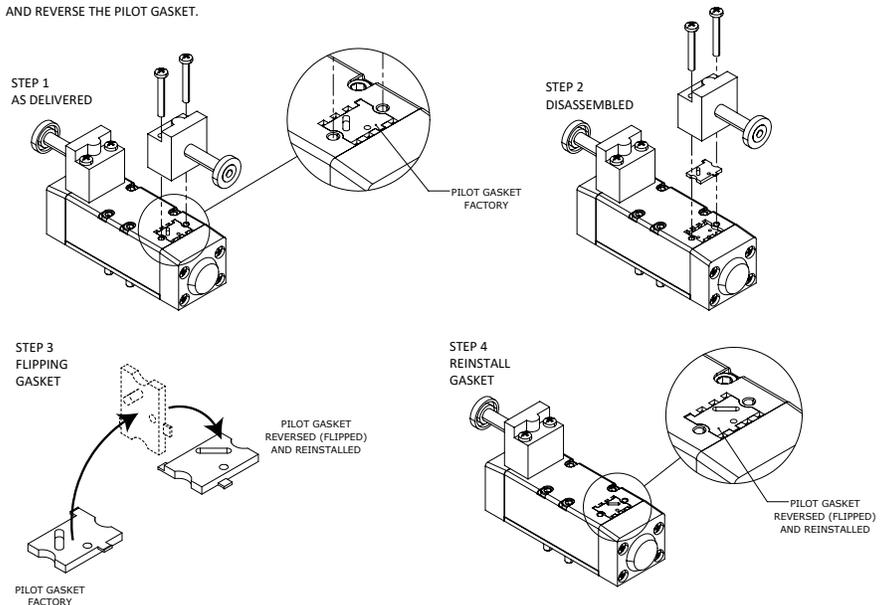
ISO 5599 Manifolds/ Bases/Valves	
1	Manifold Side Orientation
2	Manifold Bottom Orientation
3	Manifold Blind End Plate
4	Manifold Inlet
5	Stand Alone Base Bottom Orientation
6	Stand Alone Base Side Orientation
7	Solenoid Valve
8	Solenoid Coil
9	Coil Nut
10	Manifold Blank Plate
11	Manifold Attaching Kit



**NITRA ISO 5599 manifold components are easily assembled to meet your needs:**

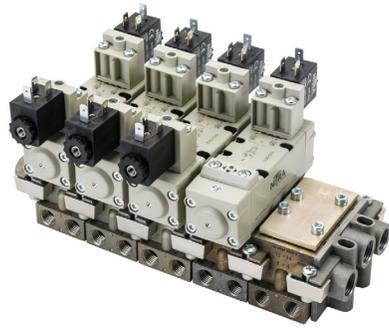
- Determine if bottom or side ports are needed.
- Join manifold sections with included clamps.
- Add inlet plate(s) and blind end plate (if needed).
- Install valves on the manifold sections. Blanking plates are available for unused stations.
- Install solenoid coils in desired voltage.
- Connect solenoids to control system and plumb as required.

TO OPERATE THE VALVE AT AN OPERATING PRESSURE (PORT 1) BELOW THE MINIMUM PILOT PRESSURE, REMOVE THE PILOT VALVE AND REVERSE THE PILOT GASKET.





# ISO 5599 Solenoid Valves



Assembly examples show assembled ISO 5599 valves, bases and manifolds. (each sold separately)



## Features

- ISO 5599/1 sizes 1 and 2 interchange with all other brands meeting ISO 5599/1
- 5-port / 2-position and 5-port / 3-position valves available
- Order stand-alone bases or manifolds separately
- Solenoid coils sold separately in 12 & 24 VDC and 24, 110 & 220 VAC



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting and cable options



ISO 5599 Solenoid Valves										
Model	<a href="#">HVS-5211</a>	<a href="#">HVS-5212</a>	<a href="#">HVS-53C12</a>	<a href="#">HVS-53E12</a>	<a href="#">HVS-53P12</a>	<a href="#">HVS-5221</a>	<a href="#">HVS-5222</a>	<a href="#">HVS-53C22</a>	<a href="#">HVS-53E22</a>	<a href="#">HVS-53P22</a>
Price	\$96.00	\$125.00	\$150.00	\$150.00	\$150.00	\$148.00	\$174.00	\$183.00	\$183.00	\$183.00
Drawing	<a href="#">PDF</a>	<a href="#">PDF</a>	<a href="#">PDF</a>	<a href="#">PDF</a>	<a href="#">PDF</a>	<a href="#">PDF</a>	<a href="#">PDF</a>	<a href="#">PDF</a>	<a href="#">PDF</a>	<a href="#">PDF</a>
Diagram	A	B	C	D	E	A	B	C	D	E
Weight (lbs.)	0.76	0.86	0.82	0.82	0.82	1.58	1.63	1.59	1.59	1.59
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous									
ISO Size	1					2				
Operating Pressure	Vacuum to 10 bar (vacuum to 145 psi)									
Min. Pilot Pressure	2.5 bar (36 psi)	1 bar (15 psi)				2.5 bar (36 psi)	1 bar (15 psi)			
Operating Temp. Range	-10 to +60 °C (14 to 140 °F)									
Nominal Diameter	7.5 mm					12 mm				
Sonic Conductance (C)	250 NI/min • bar (36.5 scfm/psi)					657.14 NI/min • bar (95.9 scfm/psi)				
Critical Pressure Ratio (b)	0.36					0.25				
Flow Rate at 6 bar @ delta-P 0.5 bar (87 psi @ delta-P 7 psi)	700 NI/min (24.7 scfm)					1800 NI/min (63.6 scfm)				
Flow Rate at 6 bar @ delta-P 1 bar (87 psi @ delta-P 15 psi)	1100 NI/min (38.8 scfm)					2700 NI/min (95.3 scfm)				
Min Response ON/OFF	24/50 ms	20/20 ms				39/60 ms	25/25 ms			
Installation	Any	Vertical not recommended with vibration				Any	Vertical not recommended with vibration			
Assembly	On single and manifold bases according to ISO 5599/1									
Manual Override	Locking									
Coils	22 mm Form B in Accordance with EN 175301-803-B (11 mm pin width)									
Max. Coil Nut Torque	1 Nm / 9 lb-in									
Approvals	N/A									



# ISO 5599 Solenoid Valves

## ISO 5599 Valve Diagrams

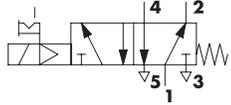


Diagram "A"

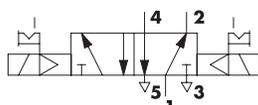


Diagram "B"

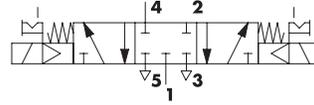


Diagram "C"

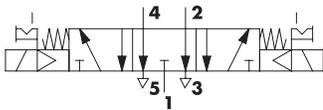


Diagram "D"

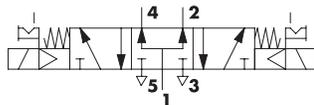
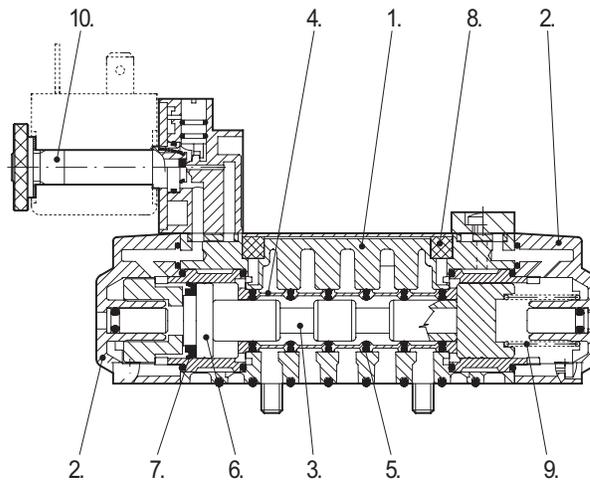


Diagram "E"

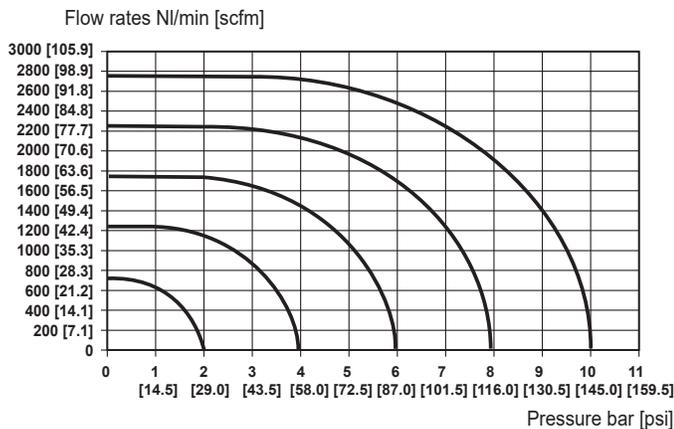
## ISO 5599 Valve Components

1. VALVE BODY: Aluminium
2. END CAP: Hostaform®
3. SPOOL: chemically nickel-plated aluminium
4. DISTANCE PLATES: plastic
5. GASKETS: NBR (Buna-N)
6. PISTONS: Hostaform®
7. PISTON GASKET: NBR (Buna-N)
8. FILTER: sintered bronze
9. SPRINGS: special steel
10. OPERATOR: Brass pipe – Stainless steel core

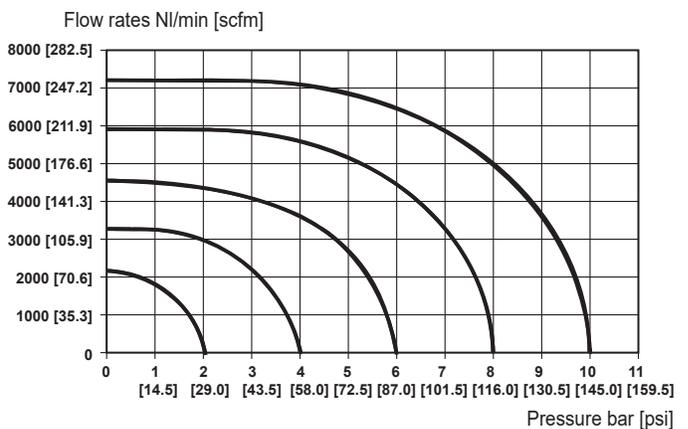


## ISO 5599 Valve Flow Charts

ISO 1



ISO 2





# ISO 5599 Solenoid Valve Bases

NITRA ISO 5599 Series Valve Bases allow mounting a single ISO 5599/1 solenoid valve. Bases will fit other brands of ISO 5599/1 valves.

## Features

- Stand-alone bases compatible with all ISO 5599/1 valves in sizes 1 and 2
- Available with side or bottom ports
- Available port threads in G-thread (BSPP) or NPT
- Aluminum alloy



See [www.AutomationDirect.com](http://www.AutomationDirect.com)  
for a wide variety of fitting and  
cable options



ISO 5599 Series Valve Bases									
Item Photo	Part No.	Pressure	Inlet(s) / Outlet(s)	Orientation	Usage	Weight (lbs.)	Price	Drawing Link	
	<a href="#"><u>HSB-1SG</u></a>	145 psi (10 bar) maximum operating pressure	G1/4 female BSPP	Side	ISO 5599/1 size 1 solenoid valves	0.36	\$16.00	<a href="#"><u>PDF</u></a>	
	<a href="#"><u>HSB-1SN</u></a>		1/4 in female NPT			0.36	\$16.00	<a href="#"><u>PDF</u></a>	
	<a href="#"><u>HSB-1BG</u></a>		G1/4 female BSPP	Bottom		0.43	\$15.50	<a href="#"><u>PDF</u></a>	
	<a href="#"><u>HSB-1BN</u></a>		1/4 in female NPT			0.43	\$15.50	<a href="#"><u>PDF</u></a>	
	<a href="#"><u>HSB-2SG</u></a>		145 psi (10 bar) maximum operating pressure	G3/8 female BSPP	Side	ISO 5599/1 size 2 solenoid valves	0.57	\$26.00	<a href="#"><u>PDF</u></a>
	<a href="#"><u>HSB-2SN</u></a>			3/8 in female NPT			0.57	\$26.00	<a href="#"><u>PDF</u></a>
	<a href="#"><u>HSB-2BG</u></a>			G3/8 female BSPP	Bottom		0.67	\$22.00	<a href="#"><u>PDF</u></a>
	<a href="#"><u>HSB-2BN</u></a>			3/8 in female NPT			0.67	\$22.00	<a href="#"><u>PDF</u></a>



# ISO 5599 Solenoid Valve Manifolds

NITRA ISO 5599 Series pneumatic valve manifolds can be joined with included fasteners to build valve islands. These manifolds will fit other brands of ISO 5599/1 valves.

## Features

- Manifolds compatible with all ISO 5599/1 valves
- Available with side or bottom ports
- Available port threads in G-thread (BSPP) or NPT
- Aluminum alloy



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cable options



ISO 5599 Series Valve Size 1 Manifolds								
Item Photo	Part No.	Pressure	Inlet(s) / Outlet(s)	Orientation	Usage	Weight (lbs.)	Price	Drawing Link
	<a href="#">HM-1G</a>	145 psi (10 bar) maximum operating pressure	G3/8 female BSPP	N/A	ISO 5599/1 size 1 solenoid valves	0.28	\$12.50	<a href="#">PDF</a>
	<a href="#">HM-1N</a>		3/8 in female NPT			0.28	\$12.50	<a href="#">PDF</a>
	<a href="#">HM-1SG</a>		G1/4 female BSPP	Side		0.29	\$29.00	<a href="#">PDF</a>
	<a href="#">HM-1SN</a>		1/4 in female NPT			0.29	\$29.00	<a href="#">PDF</a>
	<a href="#">HM-1BG</a>		G1/4 female BSPP	Bottom		0.69	\$29.00	<a href="#">PDF</a>
	<a href="#">HM-1BN</a>		1/4 in female NPT			0.69	\$29.00	<a href="#">PDF</a>

ISO 5599 Series Valve Size 1 Manifold Accessories					
Item Photo	Part No.	Description	Weight (lbs.)	Price	Drawing Link
	<a href="#">HM-1B</a>	NITRA blind end, aluminum alloy. For use with ISO 5599/1 size 1 manifolds.	0.17	\$6.50	<a href="#">PDF</a>
	<a href="#">HM-1BP</a>	NITRA blanking plate, aluminum alloy. For use with ISO 5599/1 size 1 manifolds. Assembly screws and seal included.	0.10	\$6.50	<a href="#">PDF</a>
	<a href="#">HM-1A</a>	NITRA manifold attaching kit, aluminum alloy. For use with ISO 5599/1 size 1 solenoid valves. Includes (2) assembly clamps and (3) o-rings.	0.10	\$3.25	<a href="#">PDF</a>



# ISO 5599 Solenoid Valve Manifolds

ISO 5599 Series Valve Size 2 Manifolds								
Item Photo	Part No.	Pressure	Inlet(s) / Outlet(s)	Orientation	Usage	Weight (lbs.)	Price	Drawing Link
	<a href="#">HM-2G</a>	145 psi (10 bar) maximum operating pressure	G1/2 female BSPP	N/A	ISO 5599/1 size 2 solenoid valves	0.45	\$15.50	<a href="#">PDF</a>
	<a href="#">HM-2N</a>		1/2 in female NPT			0.45	\$15.50	<a href="#">PDF</a>
	<a href="#">HM-2SG</a>		G3/8 female BSPP	Side		0.69	\$35.50	<a href="#">PDF</a>
	<a href="#">HM-2SN</a>		3/8 in female NPT			0.69	\$35.50	<a href="#">PDF</a>
	<a href="#">HM-2BG</a>		3/8 in female NPT	Bottom		1.11	\$35.50	<a href="#">PDF</a>
	<a href="#">HM-2BN</a>		3/8 in female NPT			1.11	\$35.50	<a href="#">PDF</a>

ISO 5599 Series Valve Size 2 Manifold Accessories					
Item Photo	Part No.	Description	Weight (lbs.)	Price	Drawing Link
	<a href="#">HM-2B</a>	NITRA blind end, aluminum alloy. For use with ISO 5599/1 size 2 manifolds.	0.29	\$10.00	<a href="#">PDF</a>
	<a href="#">HM-2BP</a>	NITRA blanking plate, aluminum alloy. For use with ISO 5599/1 size 2 manifolds. Assembly screws and seal included.	0.21	\$8.25	<a href="#">PDF</a>
	<a href="#">HM-2A</a>	NITRA manifold attaching kit, aluminum alloy. For use with ISO 5599/1 size 2 solenoid valves. Includes (2) assembly clamps and (3) o-rings.	0.10	\$3.75	<a href="#">PDF</a>



# ISO 5599 Valve Coils

NITRA ISO 5599 Series pneumatic valve coils fit NITRA ISO 5599/1 solenoid valves.

## Features

- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- IP65 EN60529 protection with connector
- Coil temperature 100% ED: 55 °C at 20 °C – ambient temperature
- In accordance to Atex 2014/34/EU rule, group 2, category 3 GD
- Coils have 11 mm DIN style connector



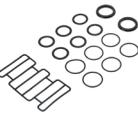
See [www.AutomationDirect.com](http://www.AutomationDirect.com)  
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ISO 5599 Series Valve Coils					
Item Photo	Part No.	Description	Weight (lbs.)	Price	Drawing Link
	<a href="#"><u>HVC-12D</u></a>	NITRA solenoid coil, 12 VDC, 2W. For use with HVS series solenoid valves.	0.1	\$12.00	<a href="#"><u>PDF</u></a>
	<a href="#"><u>HVC-24D</u></a>	NITRA solenoid coil, 24 VDC, 2W. For use with HVS series solenoid valves.	0.1	\$12.00	<a href="#"><u>PDF</u></a>
	<a href="#"><u>HVC-24A</u></a>	NITRA solenoid coil, 24 VAC, 3.5 VA. For use with HVS series solenoid valves.	0.1	\$12.00	<a href="#"><u>PDF</u></a>
	<a href="#"><u>HVC-110A</u></a>	NITRA solenoid coil, 110 VAC, 3.5 VA. For use with HVS series solenoid valves.	0.1	\$12.00	<a href="#"><u>PDF</u></a>
	<a href="#"><u>HVC-220A</u></a>	NITRA solenoid coil, 220 VAC, 3.5 VA. For use with HVS series solenoid valves.	0.1	\$12.00	<a href="#"><u>PDF</u></a>



# ISO 5599 Valve Accessories

ISO 5599 Series Valve Accessories				
Item Photo	Part No.	Description	Weight (lbs.)	Price
	<a href="#"><u>HS-NUT</u></a>	NITRA solenoid coil nut, replacement. For use with HVS series solenoid valves.	0.05	\$4.75
	<a href="#"><u>HVS-1SEAL</u></a>	NITRA seal kit, replacement. For use with ISO 5599/1 size 1 solenoid valves. Includes o-rings, lip seals and valve bottom gasket.	0.05	\$4.25
	<a href="#"><u>HVS-2SEAL</u></a>	NITRA seal kit, replacement. For use with ISO 5599/1 size 2 solenoid valves. Includes o-rings, lip seals and valve bottom gasket.	0.05	\$6.50

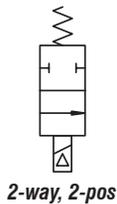


# Process Pipeline Solenoid Valves

## DVD-2A Series

Part No. **DVD-2AC3A-24D**

Valve  
Symbol



The NITRA™ DVD-2A Series valves are 2-way, 2-position, normally closed valves for the control of air, oil, water, or media that is compatible with valve materials of manufacture. These valves feature an all brass body and a zero minimum pressure differential while still boasting a full flow 1/2" orifice. Available in 1/4", 3/8" and 1/2" FNPT port sizes, the DVD-2A valves can handle pressures to 230 psi. The encapsulated coil construction ensures that the valve functions well under long periods of energization (100% duty), as well as providing a high degree of environmental protection (NEMA Type 4). The inner valve functions as a direct assist using a flat diaphragm and orifice plate. Pressure differentials shift the valve to full open. A push, non-locking manual override is standard.

### Features

- 2-way diaphragm style valves
- 1/4, 3/8, or 1/2" FNPT ports
- 2-position, normally closed, spring return
- 24 VDC, 24 VAC, or 120 VAC solenoids
- DIN style wiring connector



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### DVD-2A Series Solenoid Valve Specifications

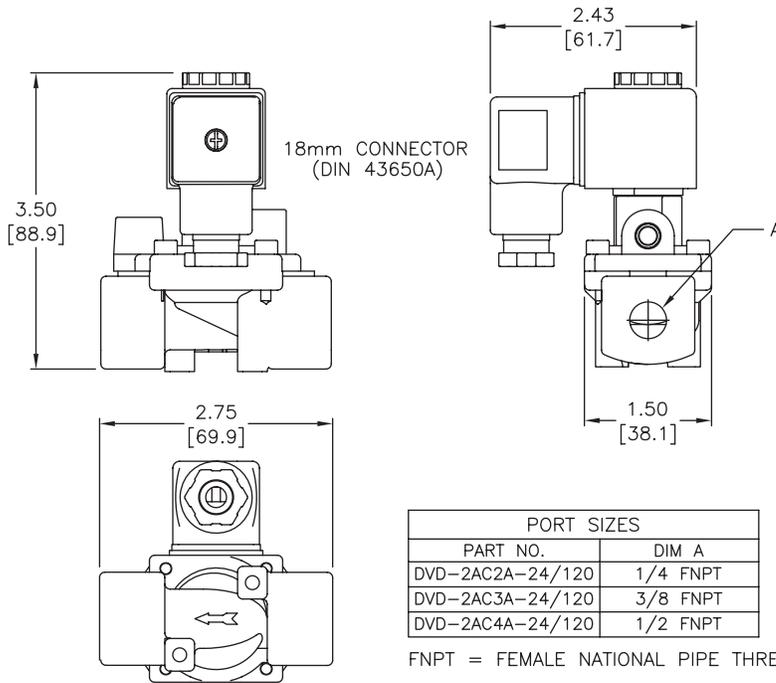
Model	DVD-2AC2A-24D	DVD-2AC2A-24A	DVD-2AC2A-120A	DVD-2AC3A-24D	DVD-2AC3A-24A	DVD-2AC3A-120A	DVD-2AC4A-24D	DVD-2AC4A-24A	DVD-2AC4A-120A
Price	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00
Weight (lbs)	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0
Valve Type	2-way, 2-position								
Acting	Diaphragm, normally closed, spring return								
Port Size	1/4" FNPT			3/8" FNPT			1/2" FNPT		
Orifice Size	1/2" [12.7 mm]								
Cv	1.55			1.95			2.45		
Media	Air, oil, water, emulsion, inert gases								
Pressure Range	1–180 psi [0–12.4 bar]	1–160 psi [0–11.0 bar]	0–230 psi [0–15.9 bar]	1–180 psi [0–12.4 bar]	1–160 psi [0–11.0 bar]	0–230 psi [0–15.9 bar]	1–180 psi [0–12.4 bar]	1–160 psi [0–11.0 bar]	0–230 psi [0–15.9 bar]
Voltage (±10%)	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz
Inrush AC	–	10.5 VA		–	10.5 VA		–	10.5 VA	
Power Consumption	10 W	8 VA		10 W	8 VA		10 W	8 VA	
Max Freq	12.5 Hz								
Insulation	Class F (continuous duty)								
Min Response	20–80 ms complete cycle								
Temperature	Max fluid 194 °F (90 °C); Ambient 14 to 122 °F (-10 to +50 °C)								
Lubrication	Not required								
Protection	NEMA Type 4								
Connection	18 mm DIN terminal; Cable OD 0.315" to 0.394", 14 AWG max								
Construction	Brass body; Viton seals; Operator Brass								
Life Cycle	10 million								
Agency Approvals	CE								



# Process Pipeline Solenoid Valves DVD-2A Series

## Dimensions

inches [mm]



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

## Accessories

DVD-2A Series Solenoid Valve Accessories			
Part No.	Description	Price	Weight (lbs)
<b>DVD-1VSEAL</b>	Seal kit, replacement, Viton, for DVD-2AC series NITRA pneumatic solenoid valves. Includes one Viton diaphragm.	\$10.50	0.1

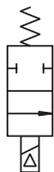


Part No. DVD-1VSEAL



# Process Pipeline Solenoid Valves

## DVD-2B Series

Part No. **DVD-2BC3A-120A**Valve  
Symbol

2-way, 2-pos

The NITRA™ DVD-2B Series valves are engineered composite 2-way, 2-position solenoid/air operated valves designed for the control of liquid media and inert gas. The valves are available with a large 1/2" or 1-1/8" orifice and five port sizes, 1/4", 3/8", 1/2", 3/4", and 1" FNPT. The valve's compact design utilizes the latest in material sciences with the use of composite materials in the valve body. The solenoid pilot is power saving low wattage, made of stainless steel working components and is miniaturized to fit in tight places. The fully encapsulated coils are available in three voltages with a DIN connector attached. Typical applications are for installations where there is a need to control inert fluids and gases, condensate drainage, hot water plumbing and sprinkler systems.

### Features

- 2-way diaphragm style valves
- 1/4, 3/8, 1/2, 3/4, or 1" FNPT ports
- 2-position, normally closed, spring return
- 24 VDC, 24 VAC, or 120 VAC solenoids
- DIN style wiring connector



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### DVD-2B Series Solenoid Valve Specifications

Model	DVD-2BC2A-24D	DVD-2BC2A-24A	DVD-2BC2A-120A	DVD-2BC3A-24D	DVD-2BC3A-24A	DVD-2BC3A-120A	DVD-2BC4A-24D	DVD-2BC4A-24A	DVD-2BC4A-120A	DVD-2BC5F-24D	DVD-2BC5F-120A	DVD-2BC6F-24D	DVD-2BC6F-120A
Price	\$58.00	\$58.00	\$58.00	\$58.00	\$58.00	\$58.00	\$58.00	\$58.00	\$58.00	\$122.00	\$122.00	\$122.00	\$122.00
Weight (lbs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
Valve Type	2-way, 2-position												
Acting	Diaphragm, normally closed, spring return												
Port Size	1/4" FNPT			3/8" FNPT			1/2" FNPT			3/4" FNPT		1" FNPT	
Orifice Size	1/2" [12.7 mm]						1.125" [28.6 mm]						
Cv	1.55			1.95			2.45			14			
Media	Air, oil, water, inert gas												
Pressure Range	7-150 psi* [0.5-10.3 bar]									10-120 psi [0.7-8.3 bar]			
Voltage (± 10%)	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	120 VAC 50/60 Hz	24 VDC	120 VAC 50/60 Hz
Inrush AC	-	10 VA		-	10 VA		-	10 VA		-	8 VA	-	8 VA
Power Consumption	6.5 W	8.5 VA		6.5 W	8.5 VA		6.5 W	8.5 VA		6 W	9 VA	6 W	9 VA
Max Freq	12.5 Hz									8.33 Hz			
Insulation	Class F (continuous duty)												
Min Response	20-80 ms complete cycle									80-120 ms complete cycle			
Temperature	14 to 122 °F [-10 to +50 °C]												
Lubrication	Not required												
Protection	NEMA Type 4												
Connection	11 mm DIN terminal									18 mm DIN terminal			
Construction	Glass filled nylon body; Viton seals; Operator Brass									Glass filled nylon body; Viton seals; Brass operator			
Life Cycle	10 million												
Agency Approvals	CE												

\* Requires minimum sealing pressure

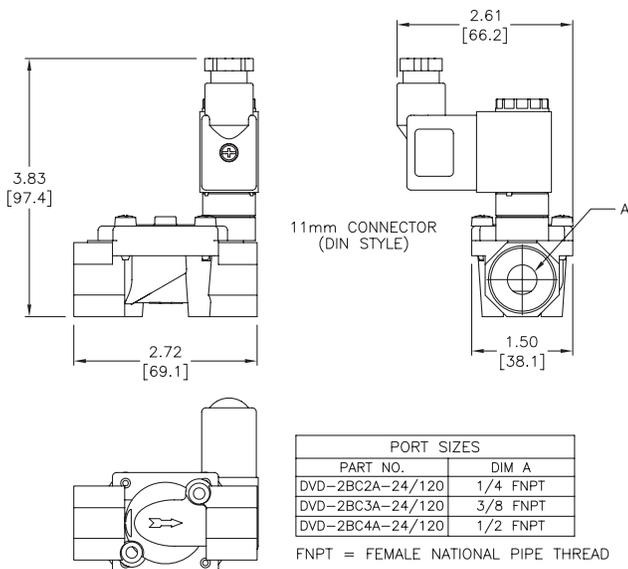


# Process Pipeline Solenoid Valves DVD-2B Series

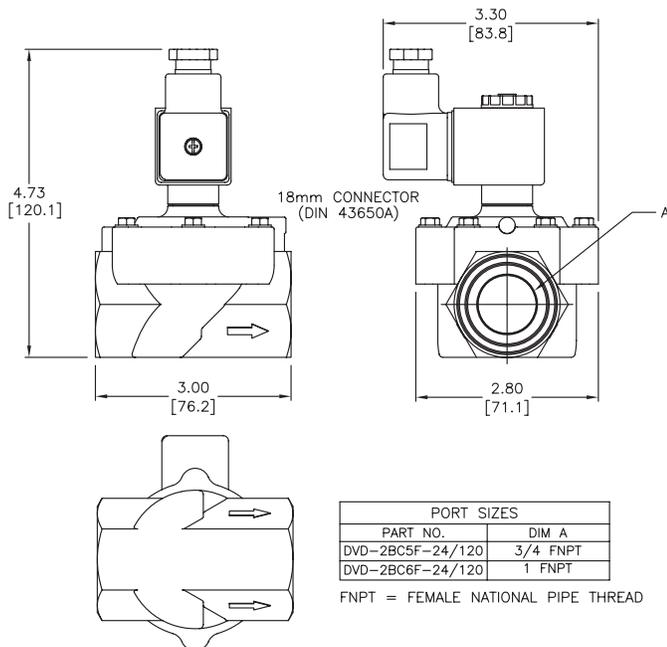
## Dimensions

inches [mm]

### DVD-2BCXX



### DVD-2BC5&6



## Accessories

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

DVD-2B Series Solenoid Valve Accessories			
Part No.	Description	Price	Weight (lbs)
<b>DVD-2VSEAL</b>	Seal kit, replacement, Viton, for DVD-2BC2A, DVD-2BC3A and DVD-2BC4A series NITRA pneumatic solenoid valves. Includes one Viton diaphragm.	\$10.50	0.1
<b>DVD-3VSEAL</b>	Seal kit, replacement, Viton, for DVD-2BC5F or DVD-2BC6F series NITRA pneumatic solenoid valves. Includes one Viton diaphragm.	\$29.00	0.6



Part No. DVD-2VSEAL



Part No. DVD-3VSEAL



# Process Pipeline Solenoid Valves

## DVP-2C & DVP-3C Series

Part No. **DVP-2CC1C-24A**

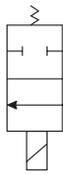
The NITRA™ DVP-2C and DVP-3C Series valves can be stacked into a multiple output bank of solenoid valves. The DVP-2C and 3C valves feature a fully encapsulated coil, spring compensated plunger seats for long life, and a miniature stackable composite valve body. The advantage to this design

is the versatility to stock single units and build, mix, and match to meet specifications. In most cases these valves reduce inventory costs and lower installation costs over a conventional manifold valve series. The coils are available with DIN connectors installed.

### Features

- 2-way and 3-way stackable poppet style valves
- 1/8" FNPT ports
- 2-position, normally closed, spring return
- 24 VDC, 24 VAC or 120 VAC solenoids
- DIN style wiring connector

#### Valve Symbols



2-way, 2-pos, NC



3-way, 2-pos, NC



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for a wide variety of fitting and cable options



DVP-2C & DVP-3C Series Solenoid Valve Specifications						
Model	DVP-2CC1C-24D	DVP-2CC1C-24A	DVP-2CC1C-120A	DVP-3CC1C-24D	DVP-3CC1C-24A	DVP-3CC1C-120A
Price	\$29.50	\$29.50	\$29.50	\$29.50	\$29.50	\$29.50
Weight (lbs)	0.3	0.3	0.3	0.3	0.3	0.3
Valve Type	2-way, 2-position			3-way, 2-position		
Acting	Stackable poppet valve, normally closed, spring return					
Port Size	1/8" FNPT					
Orifice Size	0.6" [1.5 mm]					
CV	0.08			0.08 (exhaust 0.08)		
Media	Air, oil, inert gas, water, caustics*					
Pressure Range	0-200 psi [0-13.8 bar]			1-150 psi [0-10.3 bar]		
Voltage (± 10%)	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz
Inrush AC	-	10 VA		-	10 VA	
Power Consumption	6.5 W	8.5 VA		6.5 W	8.5 VA	
Max Freq	71.4 Hz					
Insulation	Class F (continuous duty)					
Min Response	12-14 ms complete cycle					
Temperature	14 to 122 °F [-10 to +50 °C]					
Lubrication	Not required					
Protection	NEMA Type 4					
Connection	11 mm DIN terminal					
Construction	Glass filled nylon body; Viton seals; Operator Brass					
Life Cycle	20 million					
Agency Approvals	CE					

\* Check the chemical compatibility of the valve materials with the process media being used.

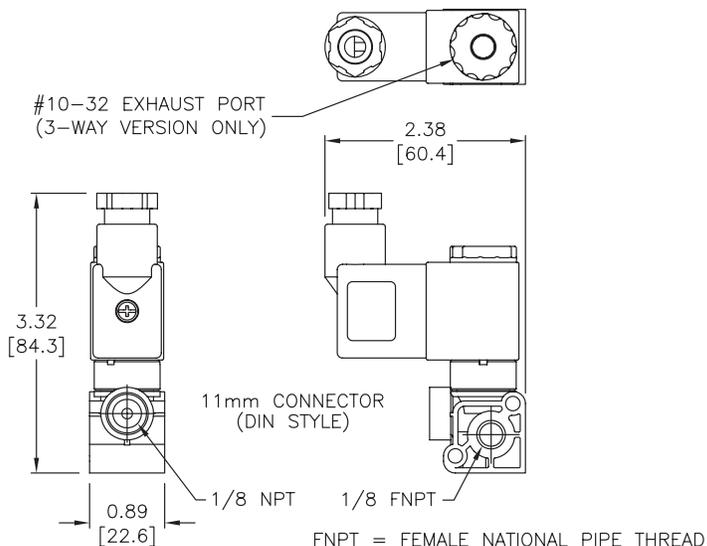


# Process Pipeline Solenoid Valves

## DVP-2C & DVP-3C Series

### Dimensions

inches [mm]



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

### Accessories

DVP-2C & DVP-3C Series Solenoid Valve Accessories			
Part No.	Description	Price	Weight (lbs)
<b>DVP-2BKT</b>	Mounting kit for DVP-2C & 3C series valves, 2 station. Includes (2) #8-32 x 2 inch screws, (2) #8 lock nuts and (1) Viton o-ring.	\$5.75	0.1
<b>DVP-3BKT</b>	Mounting kit for DVP-2C & 3C series valves, 3 station. Includes (2) #8-32 x 3 inch screws, (2) #8 lock nuts and (2) Viton o-rings.	\$7.75	0.1
<b>DVP-4BKT</b>	Mounting kit for DVP-2C & 3C series valves, 4 station. Includes (2) #8-32 x 4 inch screws, (2) #8 lock nuts and (3) Viton o-rings.	\$9.50	0.1
<b>DVP-5BKT</b>	Mounting kit for DVP-2C & 3C series valves, 5 station. Includes (2) #8-32 x 5 inch screws, (2) #8 lock nuts and (4) Viton o-rings.	\$11.50	0.1
<b>DVP-6BKT</b>	Mounting kit for DVP-2C & 3C series valves, 6 station. Includes (2) #8-32 x 6 inch screws, (2) #8 lock nuts and (5) Viton o-rings.	\$14.00	0.1



Part No. DVP-4BKT



# Process Pipeline Solenoid Valves

## DVP-2B & DVP-3B Series

Part No. **DVP-2BC1C-24D**

The NITRA™ DVP-2B and DVP-3B Series valves are composite body solenoid valves offered in both 2-way and 3-way normally closed styles. Component features include the proven solenoid operator available in brass/stainless or all stainless pilot design. The glass filled composite material is media compatible, eliminating the need for stocking multiple body materials.

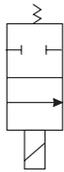
### Features

- 2-way and 3-way poppet style valves
- 1/8" FNPT ports
- 2-position, normally closed, spring return
- 24 VDC, 24 VAC or 120 VAC solenoids
- DIN style wiring connectors



See [www.AutomationDirect.com](http://www.AutomationDirect.com)  
for a wide variety of fitting and cable options

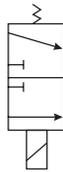
### Valve Symbols



2-way, 2-pos, NC



3-way, 2-pos, NC



3-way, 2-pos, Mixing



3-way, 2-pos, Diverting

### DVP-2B & DVP-3B Series Solenoid Valve Specifications

Model	DVP-2BC1C-24D		DVP-2BC1C-24A		DVP-2BC1C-120A		DVP-3BC1C-24D		DVP-3BC1C-24A		DVP-3BC1C-120A	
Price	\$29.50		\$29.50		\$29.50		\$31.00		\$31.00		\$31.00	
Weight (lbs)	0.3		0.3		0.3		0.3		0.3		0.3	
Valve Type	2-way, 2-position						3-way, 2-position					
Acting	Poppet valve, normally closed, spring return						Poppet valve, normally closed, spring return					
Port Size	1/8" FNPT											
Orifice Size	0.059" [1.5 mm]											
Cv	0.08						0.08 (exhaust 0.08)					
Media	Air, oil, inert gas, water, caustics*											
Pressure Range	0–200 psi [0–13.8 bar]						1–150 psi [0–10.3 bar]					
Voltage (±10%)	24 VDC		24 VAC 50/60 Hz		120 VAC 50/60 Hz		24 VDC		24 VAC 50/60 Hz		120 VAC 50/60 Hz	
Inrush AC	–		10 VA				–		10 VA			
Power Consumption	6.5 W		8.5 VA				6.5 W		8.5 VA			
Max Freq	71.4 Hz											
Insulation	Class F (continuous duty)											
Min Response	12–14 ms complete cycle											
Temperature	14 to 122 °F [-10 to +50 °C]											
Lubrication	Not Required											
Protection	NEMA Type 4											
Connection	11 mm DIN terminal											
Construction	Glass filled nylon body; Viton seals; Operator Brass											
Life Cycle	20 million											
Agency Approvals	CE											

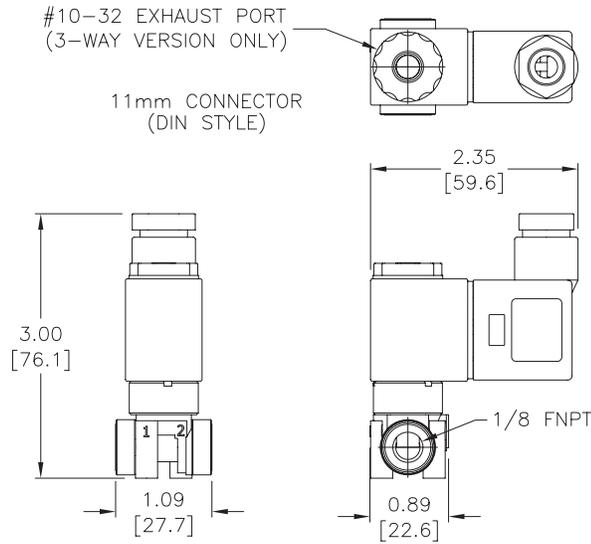
\* Check the chemical compatibility of the valve materials with the process media being used.



# Process Pipeline Solenoid Valves DVP-2B & DVP-3B Series

## Dimensions

*inches [mm]*



FNPT = FEMALE NATIONAL PIPE THREAD

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Process Pipeline Solenoid Valves DVP-2D & DVP-3D Series



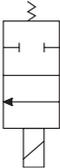
Part No. **DVP-2DC1D-24D**

The Nitra DVP-2D and DVP-3D Series valves are composite body solenoid valves offered in both 2-way and 3-way normally closed styles in three orifice sizes. Features include a direct acting solenoid utilizing a long-life spring compensated poppet at the heart of an all stainless solenoid operator. Body construction is glass filled nylon with Viton seals, making the valves compatible with air, oil, inert gas, water and caustics\*. Operating voltages of 24 VDC, 24 VAC or 120 VAC are available.

## Features

- 2-way and 3-way poppet style valves
- 1/8, 1/4 or 3/8" FNPT ports
- 2-position, normally closed, spring return
- 24 VDC, 24 VAC or 120 VAC solenoids
- DIN style wiring connector

### Valve Symbols



2-way, 2-pos, NC



See [www.AutomationDirect.com](http://www.AutomationDirect.com)

for a wide variety of fitting and cable options



DVP-2D Series Solenoid Valve Specifications									
Model	DVP-2DC1D-24D	DVP-2DC1D-24A	DVP-2DC1D-120A	DVP-2DC2E-24D	DVP-2DC2E-24A	DVP-2DC2E-120A	DVP-2DC3F-24D	DVP-2DC3F-24A	DVP-2DC3F-120A
Price	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00
Weight (lbs)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Valve Type	2-way, 2-position								
Acting	Poppet valve, normally closed, spring return						Poppet valve, normally closed, spring return		
Port Size	1/8" FNPT			1/4" FNPT			3/8" FNPT		
Orifice Size	0.062" [1.6 mm]			0.094" [2.4 mm]			0.118" [3.0 mm]		
Cv	0.12			0.245			0.315		
Media	Air, oil, inert gas, water, caustics*								
Pressure Range	0-250 psi [0-17.2 bar]						0-150 psi [0-10.3 bar]		0-250 psi [0-17.2 bar]
Voltage (± 10%)	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz
Inrush AC	-	26 VA		-	26 VA		-	26 VA	
Power Consumption	10W	11.5 VA		10W	11.5 VA		10W	11.5 VA	
Max Freq	25 Hz								
Insulation	Class F (continuous duty)								
Min Response	16-40 ms								
Temperature	14 to 122 °F [-10 to +50 °C]								
Lubrication	Not Required								
Protection	NEMA Type 4								
Connection	18 mm DIN terminal								
Construction	Glass filled nylon body; Viton seals; Operator Stainless Steel								
Life Cycle	10 million								
Agency Approvals	CE								

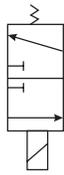
\* Check the chemical compatibility of the valve materials with the process media being used.



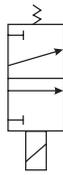
# Process Pipeline Solenoid Valves

## DVP-2D & DVP-3D Series

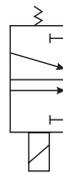
### Valve Symbols



3-way, 2-pos, NC



3-way, 2-pos, Mixing



3-way, 2-pos, Diverting

DVP-3D Series Solenoid Valve Specifications									
Model	DVP-3DC1D-24D	DVP-3DC1D-24A	DVP-3DC1D-120A	DVP-3DC2E-24D	DVP-3DC2E-24A	DVP-3DC2E-120A	DVP-3DC3F-24D	DVP-3DC3F-24A	DVP-3DC3F-120A
Price	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00	\$53.00
Weight (lbs)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Valve Type	3-way, 2-position								
Acting	Poppet valve, normally closed, spring return								
Port Size	1/8" FNPT			1/4" FNPT			3/8" FNPT		
Orifice Size	0.062" [1.6 mm]			0.094" [2.4 mm]			0.118" [3.0 mm]		
Cv	0.12 (exhaust port 0.08)			0.245 (exhaust port 0.08)			0.315 (exhaust port 0.08)		
Media	Air, oil, inert gas, water, caustics*								
Pressure Range	0-220 psi [0-15.2 bar]			1-120 psi [0-8.3 bar]		1-150 psi [0-10.3 bar]	1-82 psi [0-5.7 bar]		1-90 psi [0-6.2 bar]
Voltage (±10%)	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz
Inrush AC	-	26 VA		-	26 VA		-	26 VA	
Power Consumption	10 W	11.5 VA		10 W	11.5 VA		10 W	11.5 VA	
Max Freq	25Hz								
Insulation	Class F (continuous duty)								
Min Response	16-40 ms								
Temperature	14 to 122 °F [-10 to +50 °C]								
Lubrication	Not Required								
Protection	NEMA Type 4								
Connection	18 mm DIN terminal								
Construction	Glass filled nylon body; Viton seals; Operator Brass								
Life Cycle	10 million								
Agency Approvals	CE								

\* Check the chemical compatibility of the valve materials with the process media being used.

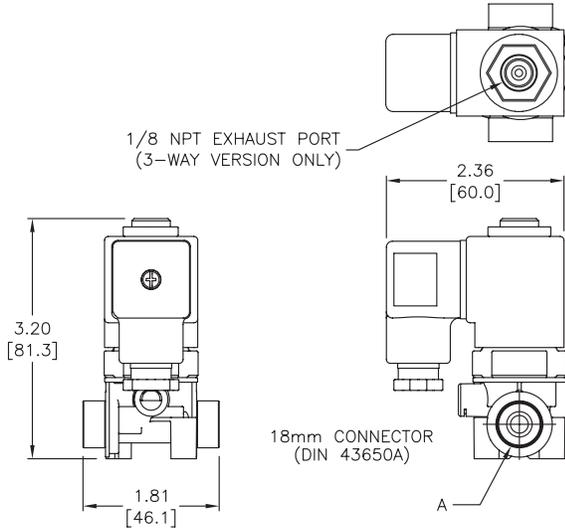


# Process Pipeline Solenoid Valves

## DVP-2D & DVP-3D Series

### Dimensions

inches [mm]



PORT SIZES	
PART NO.	DIM A
DVP-2DC1D-24/120	1/8 FNPT
DVP-2DC2E-24/120	1/4 FNPT
DVP-2DC3F-24/120	3/8 FNPT
DVP-3DC1D-24/120	1/8 FNPT
DVP-3DC2E-24/120	1/4 FNPT
DVP-3DC3F-24/120	3/8 FNPT

FNPT = FEMALE NATIONAL PIPE THREAD

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Process Pipeline Solenoid Valves

## DVM-2B Series



The Nitra DVM-2B Series valves are media separated, dry operator, 2-way, 2-position solenoid operated valves for use with gases or fluids where the metal working components of the valves do not come into contact with the working fluid. Three orifice

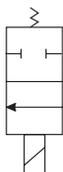
sizes are offered. Body construction is glass filled nylon with Viton seals, making the valves compatible with air, gases, water and chemicals. Operating voltages of 24 VDC, 24 VAC or 120 VAC are available.

### Features

- 2-way media separated diaphragm style valve
- 1/8 or 1/4" FNPT ports
- 2-position, normally closed, spring return
- 24 VDC, 24 VAC or 120 VAC solenoids
- DIN style wiring connector

Part No. **DVM-2BC2E-24D**

Valve Symbols



2-way, 2-pos, NC



See [www.AutomationDirect.com](http://www.AutomationDirect.com)

for a wide variety of fitting and cable options



DVM-2B Series Solenoid Valve Specifications									
Model	DVM-2BC1B-24D	DVM-2BC1B-24A	DVM-2BC1B-120A	DVM-2BC2E-24D	DVM-2BC2E-24A	DVM-2BC2E-120A	DVM-2BC2G-24D	DVM-2BC2G-24A	DVM-2BC2G-120A
Price	\$58.00	\$58.00	\$58.00	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00
Weight (lbs)	0.2	0.2	0.2	0.6	0.6	0.6	0.6	0.6	0.6
Valve Type	2-way, 2-position								
Acting	Media separated valve, normally closed, spring return								
Port Size	1/8" FNPT			1/4" FNPT					
Orifice Size	0.047" [1.2 mm]			0.094" [2.4 mm]			0.157" [4.0 mm]		
Cv	0.065			0.24			0.52		
Media	Water, chemicals, air, gases			Air, noble gases, oils, medical fluid applications*					
Pressure Range	0 to 120 psi [0 to 8.3 bar]			15" Hg (mercury) to 120 psi [-0.5 to 8.3 bar]	15" Hg (mercury) to 120 psi [-0.5 to 8.3 bar]		15" Hg (mercury) to 45 psi [-0.5 to 3.1 bar]	15" Hg (mercury) to 45 psi [-0.5 to 3.1 bar]	15" Hg (mercury) to 55 psi [-0.5 to 3.8 bar]
Maximum Allowable Back Pressure	20psi regardless of voltage								
Voltage (±10%)	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz
Inrush AC	-	10 VA		-	10.5 VA		-	26 VA	
Power Consumption	6.5 W	8.5 VA		10 W	9 VA		10 W	9 VA	
Max Freq	40Hz			38.5 Hz					
Insulation	Class F (continuous duty)								
Min Response	18-25 ms complete cycle			18-26 ms complete cycle					
Temperature	14 to 131 °F [-10 to +55 °C]			14 to 122 °F [-10 to +50 °C]					
Lubrication	Not required								
Protection	NEMA Type 4								
Connection	11 mm DIN terminal			18 mm DIN terminal					
Construction	Glass filled nylon body; Viton seals; 302 stainless steel inlet strainer								
Life Cycle	10 million								
Agency Approvals	CE								

\* Check the chemical compatibility of the valve materials with the process media being used.



# Process Pipeline Solenoid Valves

## DVM-2B Series

DVM-2B Series Solenoid Valve Specifications						
Model	<u>DVM-2BC3E-24D</u>	<u>DVM-2BC3E-24A</u>	<u>DVM-2BC3E-120A</u>	<u>DVM-2BC3G-24D</u>	<u>DVM-2BC3G-24A</u>	<u>DVM-2BC3G-120A</u>
Price	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00	\$93.00
Weight (lbs)	0.6	0.6	0.6	0.6	0.6	0.6
Valve Type	Media separated valve					
Acting	2-way, 2-position, normally closed, spring return					
Port Size	3/8" FNPT					
Orifice Size	0.094" [2.4 mm]			0.157" [4.0 mm]		
Cv	0.24			0.52		
Fluid	Air, noble gases, oils, medical fluid applications*					
Pressure Range	15" vacuum to 120 psi [0.04–8.3 bar]	15" vacuum to 120 psi [0.04–8.3 bar]		15" vacuum to 45 psi [0.04–3.1 bar]	15" vacuum to 55 psi [0.04–3.8 bar]	15" vacuum to 45 psi [0.04–3.1 bar]
Maximum Allowable Back Pressure	20psi regardless of voltage					
Voltage (± 10%)	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz	24 VDC	24 VAC 50/60 Hz	120 VAC 50/60 Hz
Inrush AC	–	26 VA		–	26 VA	
Power Consumption	10 W	11.5 VA		10 W	11.5 VA	
Max Freq	38.5 Hz					
Insulation	Class F (continuous duty)					
Min Response	18–26 ms complete cycle					
Temperature	14 to 122 °F [-10 to +50 °C]					
Lubrication	Not required					
Protection	NEMA Type 4					
Connection	18 mm DIN terminal					
Construction	Glass filled nylon body; Viton seals; 302 stainless steel inlet strainer					
Life Cycle	10 million					
Agency Approvals	CE					

\* Check the chemical compatibility of the valve materials with the process media being used.



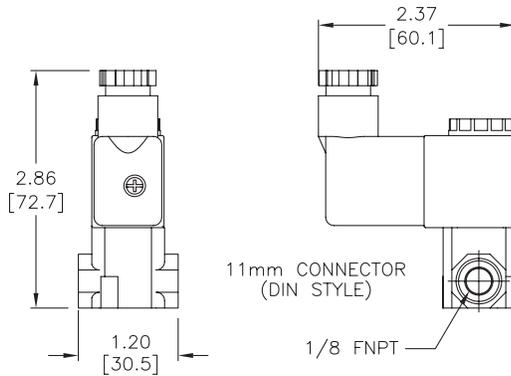
# Process Pipeline Solenoid Valves

## DVM-2B Series

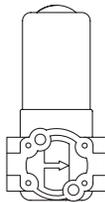
### Dimensions

inches [mm]

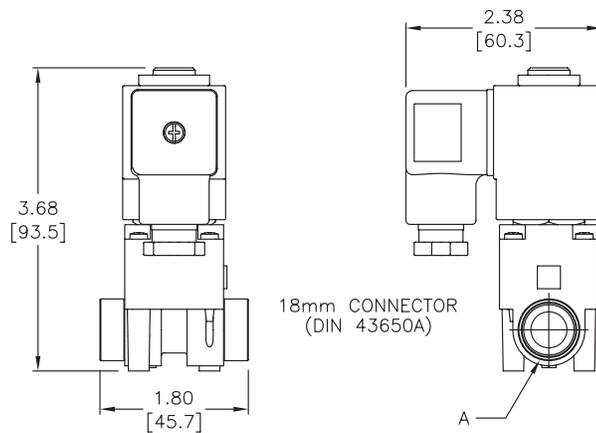
#### DVM-2BC1B-XX



FNPT = FEMALE NATIONAL PIPE THREAD

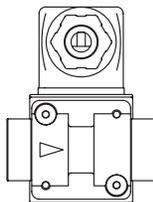


#### DVM-2BCXX



PORT SIZES	
PART NO.	DIM A
DVM-2BC2E-24/120	1/4 FNPT
DVM-2BC2G-24/120	1/4 FNPT
DVM-2BC3E-24/120	3/8 FNPT
DVM-2BC3G-24/120	3/8 FNPT

FNPT = FEMALE NATIONAL PIPE THREAD



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

# Solenoid Valve Cables and Connectors



These high quality connectors and over-molded cables help reduce wiring time. The lower voltage models, 24 V or 110 V AC/DC, include built-in surge suppression, Yellow LED indicator and are rated for connecting with electronics. The 230 V AC/DC models are rated for straight wired products. All models are available in five sizes based on DIN 43650.

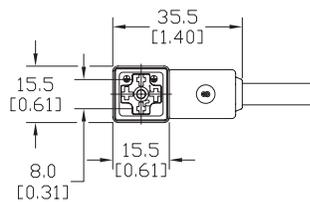
## Features

- 8 mm, 9.4 mm, 10 mm, 11 mm and 18 mm square DIN styles
- Fits most popular solenoid valves and sensors
- Suppression and LED indication available in 24 V or 110 V AC/DC models
- PVC jacketed cables in 1, 3 or 5 meter lengths on select connectors
- Field wireable connectors on select models
- Polarity insensitive (follow solenoid, sensor, or other devices wiring diagram)



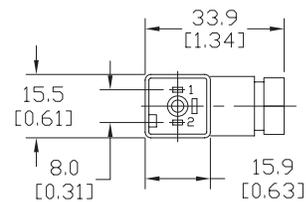
### 8mm Connectors

Dimensions shown  
mm [inches]



Height = 25mm [0.98in]

Connector with Cable



Height = 26mm [1.02]

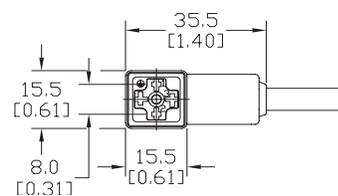
Field Wireable Connector

8mm (3-pole) Connectors (per DIN 43650 Form C)												
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval
<a href="#">SC8-LS24-3</a>	\$17.00	24 ±20%	max 4 A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2 W)	1	m2.5-0.45 x 25 mm / 0.4 Nm (3.5 in lb)	0.40	CSA (080128-0-000)
<a href="#">SC8-LS24-5</a>	\$20.50										0.65	
<a href="#">SC8-LS110-3</a>	\$20.50	110 ±10%	max 6 A	65	Solid 12 AWG Stranded 14 AWG w/Ferrule 16 AWG	field wireable gland size 0.20 to 0.24	no	none	7	m2.5-0.45 x 25 mm / 0.5 Nm (4.4 in lb)	0.41	
<a href="#">SC8-LS110-5</a>	\$24.00										0.63	
<a href="#">SC8-3</a>	\$13.50	230	max 6 A	67	18 AWG	0.23	no	none	2	m2.5-0.45 x 25 mm / 0.5 Nm (4.4 in lb)	0.39	none
<a href="#">SC8-0</a>	\$9.25										0.10	
<a href="#">SC8-1</a>	\$18.00										0.10	
<a href="#">SC8-5</a>	\$19.50										0.68	

Last digit in part number denotes cable length in meters, a 0 indicates field termination.

### 8mm Transmitter Connector

Dimensions shown  
mm [inches]



Height = 25mm [0.98in]

Connector with Cable

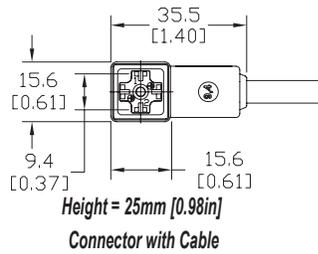
8mm (4-pole) Connectors (per DIN 43650 Form C)												
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval
<a href="#">SC8-5T</a>	\$26.00	230	max 6 A	67	18 AWG	0.26	yes	none	8	m3-0.5 x 42 mm / 0.5 Nm (4.4 in lb)	0.80	CSA (080128-0-000)

Last numeric digit in part number denotes cable length in meters, a 0 indicates field termination.

# Solenoid Valve Cables and Connectors

## 9.4mm Connectors

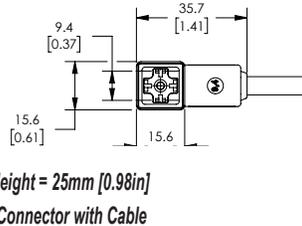
Dimensions shown  
mm [inches]



9.4mm (3-pole) Connectors (DIN Style, Form C Industrial)												
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval
<a href="#">SC9-LS24-3</a>	\$17.00	24 ±20%	max 4 A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2 W)	1	m3-0.5 x 26 mm / 0.4 Nm (3.5 in lb)	0.40	CSA (080128-0-000)
<a href="#">SC9-LS24-5</a>	\$20.50							zener diode (D-Z DO-41 ZY200 2 W)	7		0.64	
<a href="#">SC9-LS110-3</a>	\$20.50	110 ±10%	max 6 A	67	18 AWG	no	none	2	m3-0.5 x 26 mm / 0.5 Nm (4.4 in lb)	0.40	none	
<a href="#">SC9-LS110-5</a>	\$24.00									0.64		
<a href="#">SC9-3</a>	\$13.50	230	max 6 A	67	18 AWG	no	none	2	m3-0.5 x 26 mm / 0.5 Nm (4.4 in lb)	0.40	none	
<a href="#">SC9-5</a>	\$19.50									0.64		

## 9.4mm Connectors

Dimensions shown  
mm [inches]

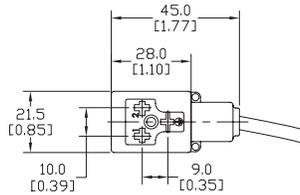


9.4mm (4-pole) Connectors (DIN Style, Form C Industrial)													
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia.	Cable Length	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval
<a href="#">7000-94141-6270300</a>	\$22.00	230 VAC/ VDC	max 6 A	IP67	18 AWG	5.6–6.2 mm	9.8ft/3m	no	none	8	m3-0.5 x 26 mm / 0.4 Nm (3.5 in lb)	0.50	CSA (080128-0-000)/ RoHS
<a href="#">7000-94141-6270500</a>	\$29.00						16.4ft/5m					0.79	

# Solenoid Valve Cables and Connectors

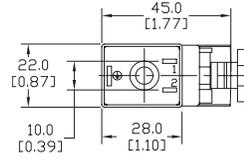
## 10mm Connectors

Dimensions shown  
mm [inches]



Height = 30mm [1.18in]

Connector with Cable



Height = 41mm [1.61in]

Field Wireable Connector

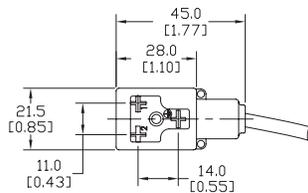
### 10mm (3-pole) Connectors (per DIN 43650 Form B)

Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval	
<a href="#">SC10-LS24-3</a>	\$17.00	24 ±20%	max 4 A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2 W)	10	m3-0.5 x 30 mm / 0.4 Nm (3.5 in lb)	0.43	CSA (080128-0-000)	
<a href="#">SC10-LS24-5</a>	\$20.50										0.68		
<a href="#">SC10-LS110-3</a>	\$20.50	110 ±10%	max 4 A					zener diode (D-Z DO-41 ZY200 2 W)	6		0.43		
<a href="#">SC10-LS110-5</a>	\$24.00										0.68		
<a href="#">SC10-3</a>	\$13.50	230	max 10 A					no	none		3		0.43
<a href="#">SC10-5</a>	\$19.50												0.68
<a href="#">SC10-LS24-0</a>	\$12.50	24 ±20%	max 4 A	65	Solid 12 AWG Stranded 14 AWG w/Ferrule 16 AWG	field wireable gland size 0.24 to 0.32	yes	zener diode (D-Z DO-15 47V 2 W)	4	m3-0.5 x 42 mm / 0.5 Nm (4.4 in lb)	0.07	none	
<a href="#">SC10-LS110-0</a>	\$14.50	110 ±10%	max 1 A					mov (SIOV S10 K130)			5		0.07

Last digit in part number denotes cable length in meters, a 0 indicates field termination.

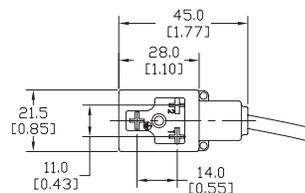
## 11mm Connectors

Dimensions shown  
mm [inches]



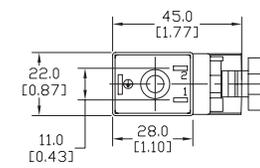
Height = 30mm [1.18in]

Connector with Cable



Height = 30mm [1.18in]

Reverse Connector with Cable



Height = 41mm [1.61in]

Field Wireable Connector

### 11mm (3-pole) Connectors (DIN Style, Form B Industrial)

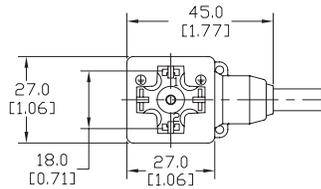
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in.)	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval
<a href="#">SC11-LS24-3</a>	\$17.00	24 ±20%	max 4 A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2 W)	10	m3-0.5 x 30 mm / 0.4 Nm (3.5 in lb)	0.44	CSA (080128-0-000)
<a href="#">SC11-LS24-5</a>	\$20.50										0.67	
<a href="#">SC11-LS110-3</a>	\$20.50	110 ±10%	max 4 A					zener diode (D-Z DO-41 ZY200 2 W)	6		0.44	
<a href="#">SC11-LS110-5</a>	\$24.00										0.67	
<a href="#">SC11-LS24-3R</a>	\$17.00	24 ±20%	max 4 A					zener diode (D-Z DO-15 47V 2 W)	10		0.44	
<a href="#">SC11-LS24-5R</a>	\$20.50										0.67	
<a href="#">SC11-LS110-3R</a>	\$20.50	110 ±10%	max 4 A	zener diode (D-Z DO-41 ZY200 2 W)	6	0.44						
<a href="#">SC11-LS110-5R</a>	\$24.00					0.67						
<a href="#">SC11-3</a>	\$13.50	230	max 10 A	no	none	3	0.44					
<a href="#">SC11-5</a>	\$19.50						0.67					
<a href="#">SC11-LS24-0</a>	\$12.50	24 ±20%	max 4 A	65	Solid 12 AWG Stranded 14 AWG w/Ferrule 16 AWG	field wireable gland size 0.24 to 0.32	yes	zener diode (D-Z DO-15 47V 2 W)	4	m3-0.5 x 42 mm / 0.5 Nm (4.4 in lb)	0.07	none
<a href="#">SC11-LS110-0</a>	\$14.50	110 ±10%	max 1 A					mov (SIOV S10 K130)			5	
<a href="#">SC11-0</a>	\$10.50	230	max 10 A	no	none	9	0.07					

Last numeric digit in part number denotes cable length in meters, a 0 indicates field termination.

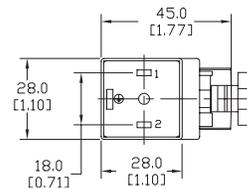
# Solenoid Valve Cables and Connectors

## 18mm Connectors

Dimensions shown  
mm [inches]



Height = 30mm [1.18in]  
Connector with Cable



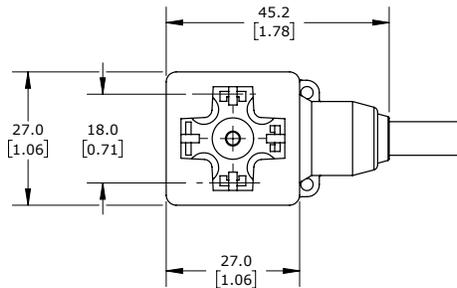
Height = 41mm [1.61in]  
Field Wireable Connector

18mm (3-pole) Connectors (per DIN 43650 Form A)												
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia. (in)	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval
SC18-LS24-3	\$17.00	24 ±20%	max 4 A	67	18 AWG	0.23	yes	zener diode (D-Z DO-15 47V 2 W)	7	m3-0.5 x 30 mm / 0.4 Nm (3.5 in lb)	0.44	CSA (080128-0-000)
SC18-LS24-5	\$22.50										0.69	
SC18-LS110-3	\$20.50	110 ±10%	max 4 A				zener diode (D-Z DO-41 ZY200 2 W)	7	0.44			
SC18-LS110-5	\$24.00								0.69			
SC18-3	\$13.50	230	max 10 A				no	none	2		0.44	
SC18-5	\$19.50										0.69	
SC18-LS24-0	\$12.50	24 ±20%	max 4 A	65	Solid 12 AWG Stranded 14 AWG w/Ferrule 16 AWG	field wireable gland size 0.24 to 0.32	yes	zener diode (D-Z DO-15 47V 2 W)	4	m3-0.5 x 42 mm / 0.5 Nm (4.4 in lb)	0.07	none
SC18-LS110-0	\$14.50	110 ±10%	max 1 A				no	mov (SIOV S10 K130)	5		0.07	
SC18-0	\$10.50	230	max 10 A				no	none	9		0.07	

Last digit in part number denotes cable length in meters, a 0 indicates field termination.

## 18mm Connectors

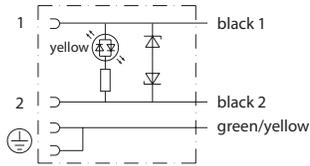
Dimensions shown  
mm [inches]



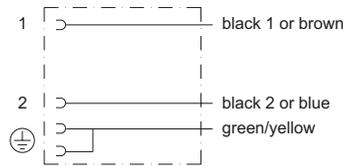
Height = 30mm [1.18in]  
Connector with Cable

18mm (4-pole) Connectors (DIN Style, Form A Industrial)													
Part No.	Price	Voltage (AC/DC)	Current Rating	IP Rating	Wire Size	Cable Dia.	Cable Length	LED	Surge Protection	Wiring Figure	Screw Size/Torque	Weight (lbs)	Agency Approval
7000-18111-6270300	\$22.00	230 VAC/VDC	max 10 A	67	18 AWG	5.6 - 6.2 mm	9.8ft/3m	no	none	8	m3-0.5 x 26 mm / 0.4 Nm (3.5 in lb)	0.53	CSA (080128-0-000)/ RoHS
7000-18111-6270500	\$29.00						16.4ft/5m					0.83	

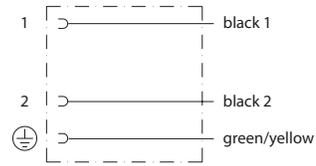
# Solenoid Valve Cables and Connectors Wiring Diagrams



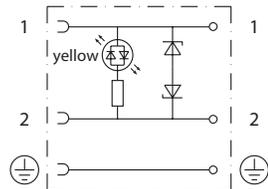
**Figure No. 1**



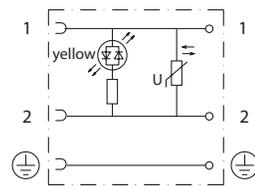
**Figure No. 2**



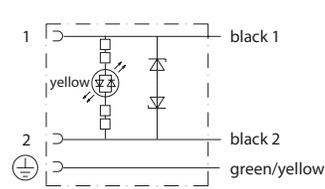
**Figure No. 3**



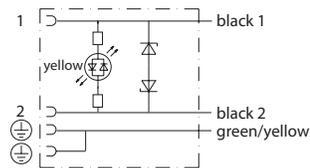
**Figure No. 4**



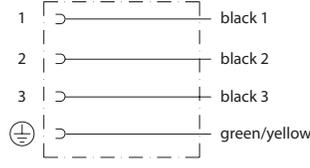
**Figure No. 5**



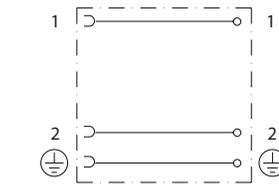
**Figure No. 6**



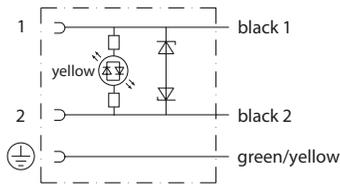
**Figure No. 7**



**Figure No. 8**



**Figure No. 9**



**Figure No. 10**



# Pneumatic GVP Series Miniature Solenoid Valves



**Part No. GVP-211C-12D**



**Part No. GVP-321C-12D**

NITRA™ pneumatic miniature solenoid valves are an excellent choice for many automation applications with low flow requirements. Valves must be mounted to a GM-3 series manifold (sold separately).

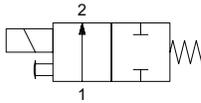
## Features

- 10 mm and 15 mm valve widths
- Available in 2-way or 3-way normally closed configurations
- 12 or 24 VDC solenoids
- GM-3 series manifolds sold separately



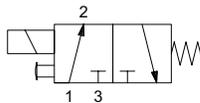
See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting options

Diagram "A"



2-way, 2-position, Spring Return

Diagram "B"



3-way, 2-position, Spring Return

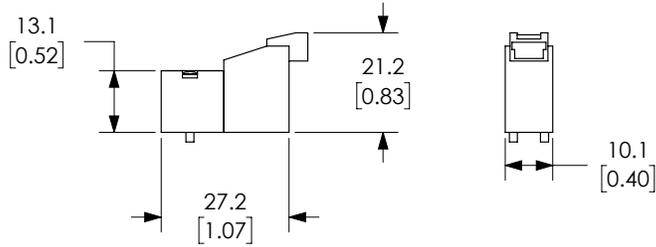
GVP Series Miniature Solenoid Valves							
Models	<u>GVP-211C-12D</u>	<u>GVP-211C-24D</u>	<u>GVP-311C-12D</u>	<u>GVP-311C-24D</u>	<u>GVP-221C-12D</u>	<u>GVP-321C-12D</u>	<u>GVP-321C-24D</u>
Price	\$44.50	\$45.50	\$45.50	\$44.50	\$39.00	\$39.00	\$39.00
Weight (lbs)	0.05				0.1		
Size	10 mm				15 mm		
Valve Type	2-way, 2-position, Normally Closed		3-way, 2-position, Normally Closed		2-way, 2-position, Normally Closed	3-way, 2-position, Normally Closed	
Acting	Single solenoid spring return poppet						
Diagram	A		B		A	B	
Fluid	Air or Inert Gas (to be filtered by 40µ filter element)						
Min. / Max. Pressure	0 to 105 psi (0 to 7.24 bar)						
Flow (Cv)	0.013	0.013	0.013	0.013	0.047	0.047	0.047
Port	Requires GM type 10mm or 15mm manifolds for operation						
Voltage	12 VDC	24 VDC	12 VDC	24 VDC	12 VDC	12 VDC	24 VDC
Continuous ON Power	1.3 W				2.3 W		
Expected Life	50,000,000 cycles at max 3 cycles/second						
Wiring	Connector Receptacle (Wire connector required)				18" Flying Leads		
Response Time	6ms (on), 8ms (off)						
Indication	LED				No LED		
Temperature - Operation and Storage	14 to 122 °F (-10 to +50 °C)						
Lubrication	Not Required						
Body	Glass-filled nylon						
Protection	n/a						



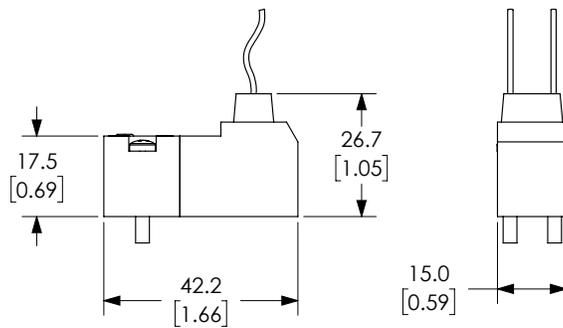
# Pneumatic GVP Series Miniature Solenoid Valves

## Dimensions

mm [inches]



**GVP-x11C-xxD**



**GVP-x21C-xxD**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic GVP Series Miniature Latching Solenoid Valves

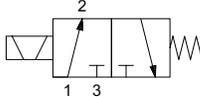


Part No. **GVP-311CL-24D**



Part No. **GVP-321CL-12D**

Diagram "A"



3-way, 2-position, Spring Return

NITRA pneumatic latching solenoid valves will stay open after being momentarily energized thus saving power consumption and reducing heat. Valves must be mounted to a GM-3 series manifold (sold separately).

## Features

- 10 mm and 15 mm valve widths
- 3-way normally closed configuration
- Reversing polarity changes state
- GM-3 series manifolds sold separately



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting options

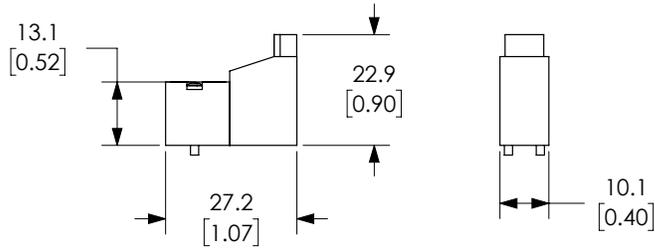
GVP Series Miniature Latching Solenoid Valves		
Model	<b><u>GVP-311CL-24D</u></b>	<b><u>GVP-321CL-12D</u></b>
Price	\$68.00	\$67.00
Weight (lbs)	0.05	0.1
Size	10 mm	15 mm
Valve Type	3-way, 2-position, Normally Closed	3-way, 2-position, Normally Closed
Acting	Single latching solenoid spring return poppet	
Diagram	A	A
Fluid	Air or Inert Gas (to be filtered by 40 μ filter element)	
Min. / Max. Pressure	0 to 105 psi (0 to 7.24 bar)	
Flow (Cv)	0.013	0.047
Port	Requires GM type 10mm or 15 mm manifolds for operation	
Voltage	24 VDC	12 VDC
Continuous ON Power	1.3 W	4 W
Expected Life	50,000,000 cycles at max 2 cycles/second	
Wiring	Connector Receptacle (Wire connector required)	18" Flying Leads
Response Time	6 ms (on), 8 ms (off)	
Indication	LED	No LED
Temperature - Operation and Storage	14 to 122 °F (-10 to +50 °C)	
Lubrication	Not Required	
Body	Glass-filled nylon	
Protection	n/a	



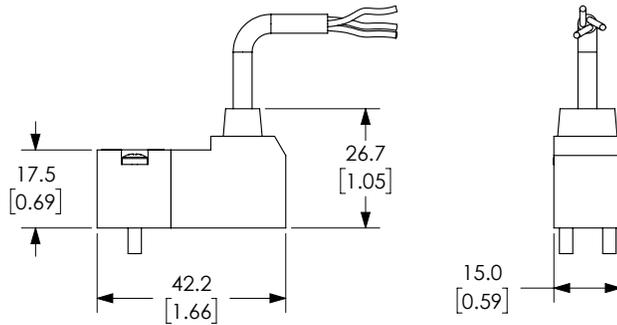
# Pneumatic GVP Series Miniature Latching Solenoid Valves

## Dimensions

mm [inches]



**GVP-x11CL-xxD**



**GVP-x21CL-xxD**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic GVP Series Miniature Solenoid Valve Manifolds



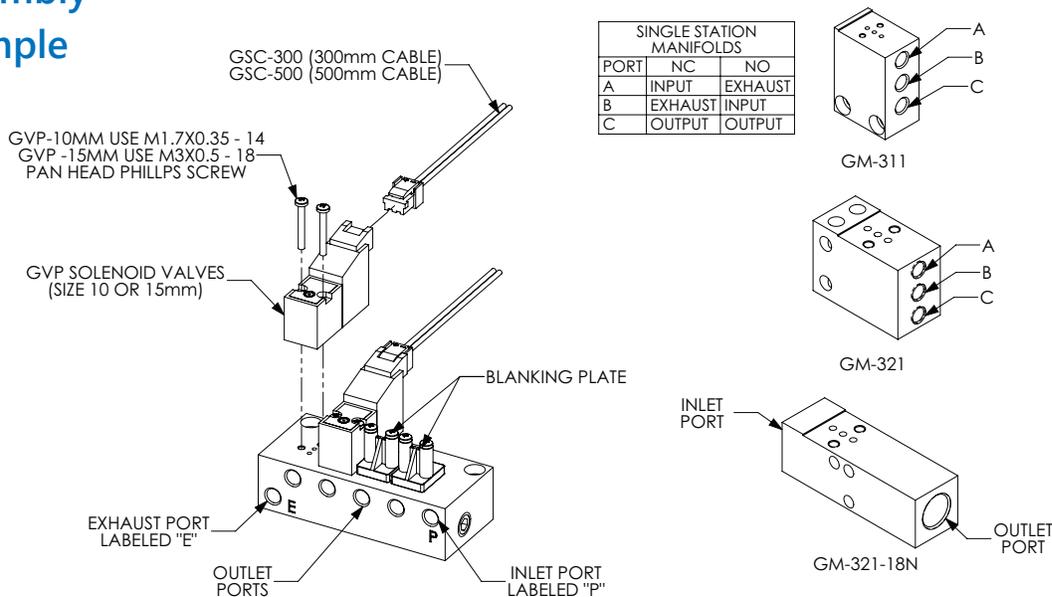
NITRA manifolds designed to work with 10 mm wide GVP series valves.

- Single to 6 stations
- #10-32 female threaded ports
- Precision machined
- Compact
- Anodized aluminum for corrosion resistance
- Made in USA



Nitra Pneumatic GVP Series 10 mm Miniature Solenoid Valve Manifolds					
Item	Part No.	Description	A inches [mm]	Price	Weight (lbs)
	<b>GM-311</b>	NITRA pneumatic valve manifold, anodized aluminum, white, rectangular, (1) station, #10-32 female UNF inlet(s), #10-32 female UNF outlet(s), #10-32 female threaded exhaust(s). For use with GVP-21 and GVP-31 series solenoid valves.	N/A	\$26.50	0.05
	<b>GM-312</b>	NITRA pneumatic valve manifold, anodized aluminum, white, rectangular, (2) stations, #10-32 female UNF inlet(s), #10-32 female UNF outlet(s), #10-32 female threaded exhaust(s). For use with GVP-21 and GVP-31 series solenoid valves.	1.42 [36.1]	\$36.00	0.05
	<b>GM-314</b>	NITRA pneumatic valve manifold, anodized aluminum, white, rectangular, (4) stations, #10-32 female UNF inlet(s), #10-32 female UNF outlet(s), #10-32 female threaded exhaust(s). For use with GVP-21 and GVP-31 series solenoid valves.	2.25 [78.2]	\$41.00	0.10
	<b>GM-316</b>	NITRA pneumatic valve manifold, anodized aluminum, white, rectangular, (6) stations, #10-32 female UNF inlet(s), #10-32 female UNF outlet(s), #10-32 female threaded exhaust(s). For use with GVP-21 and GVP-31 series solenoid valves.	3.08 [78.2]	\$48.50	0.15

## Assembly Example





# Pneumatic GVP Series Miniature Solenoid Valve Manifolds



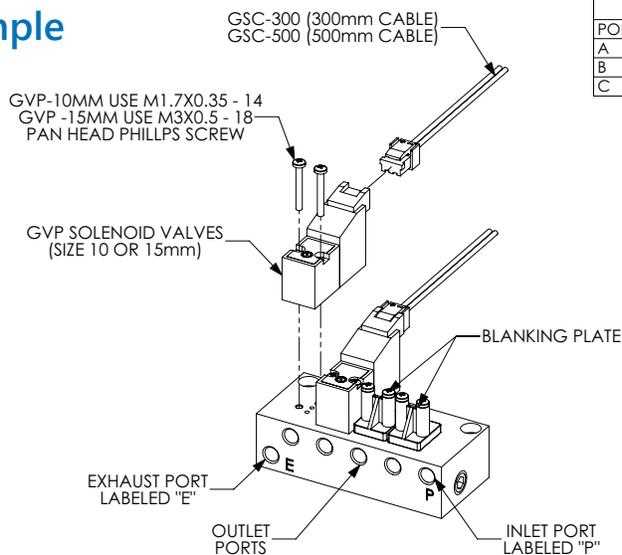
NITRA manifolds designed to work with 15 mm wide GVP series valves.

- Single to 4 stations
- #10-32 threaded or 1/8in NPT female ports
- Precision machined
- Compact
- Anodized aluminum for corrosion resistance
- Made in USA

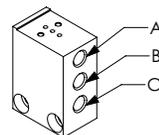


Nitra Pneumatic GVP Series 15 mm Miniature Solenoid Valve Manifolds					
Item	Part No.	Description	A inches [mm]	Price	Weight (lbs)
	<b><u>GM-321</u></b>	NITRA pneumatic valve manifold, anodized aluminum, white, rectangular, (1) station, #10-32 female UNF inlet(s), #10-32 female UNF outlet(s), #10-32 female threaded exhaust(s). For use with GVP-22 and GVP-32 series solenoid valves.	N/A	\$26.50	0.05
	<b><u>GM-322</u></b>	NITRA pneumatic valve manifold, anodized aluminum, white, rectangular, (2) stations, 1/8in female NPT inlet(s), #10-32 female UNF outlet(s), 1/8in female NPT exhaust(s). For use with GVP-22 and GVP-32 series solenoid valves.	2.13 [54.0]	\$33.50	0.15
	<b><u>GM-324</u></b>	NITRA pneumatic valve manifold, anodized aluminum, white, rectangular, (4) stations, 1/8in female NPT inlet(s), #10-32 female threaded outlet(s), 1/8in female NPT exhaust(s). For use with GVP-22 and GVP-32 series solenoid valves.	3.37 [85.7]	\$46.00	0.25
	<b><u>GM-321-18N</u></b>	NITRA pneumatic valve manifold, anodized aluminum, black, rectangular, (1) station, 1/8in female NPT inlet(s), 1/8in female NPT outlet(s), vent hole exhaust(s). For use with GVP-22 and GVP-32 series solenoid valves.	N/A	\$32.00	0.6

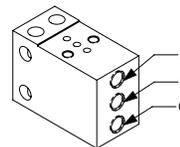
## Assembly Example



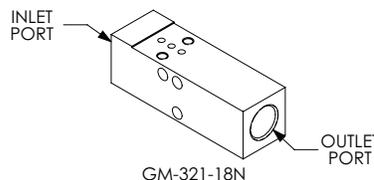
PORT	NC	NO
A	INPUT	EXHAUST
B	EXHAUST	INPUT
C	OUTPUT	OUTPUT



GM-311



GM-321



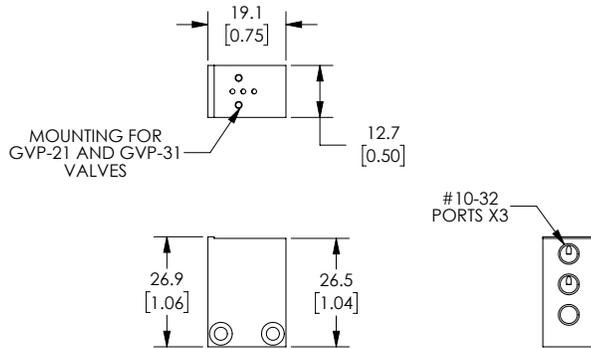
GM-321-18N



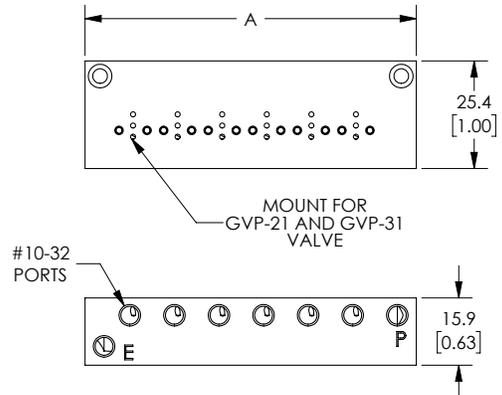
# Pneumatic GVP Series Miniature Solenoid Valve Manifolds

## Dimensions

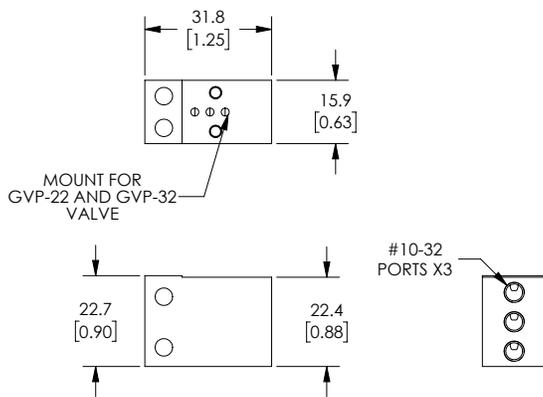
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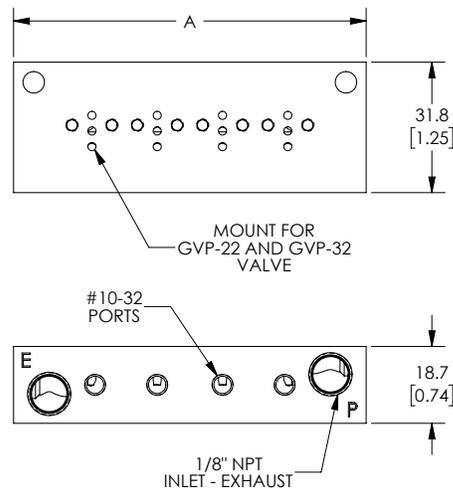
Part No. GM-311



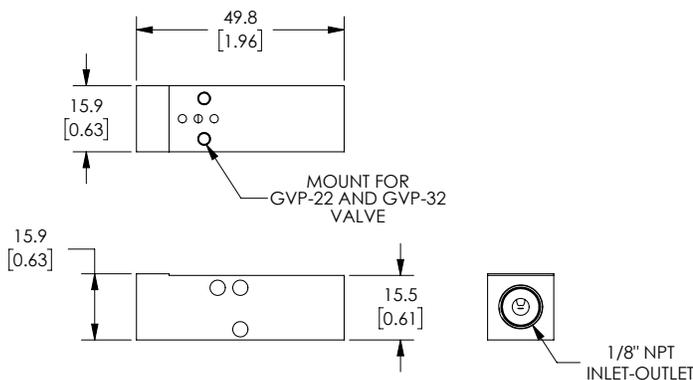
Part No. GM-312, GM-314, GM-316



Part No. GM-321



Part No. GM-322, GM-324



Part No. GM-321-18N

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



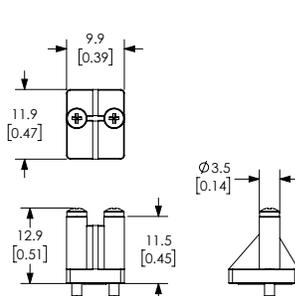
# Pneumatic GVP Series Miniature Solenoid Manifold Accessories



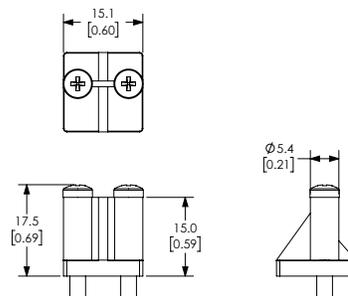
Nitra Pneumatic GVP Series Miniature Solenoid Valve Manifold Accessories				
Item	Part No.	Description	Price	Weight (lbs)
	<b><u>GM-31BP</u></b>	NITRA blanking plate, nylon. For use with GM-31 series manifolds. Gasket and mounting screws included.	\$6.25	0.05
	<b><u>GM-32BP</u></b>	NITRA blanking plate, nylon. For use with GM-32 series manifolds. Gasket and mounting screws included.	\$6.00	0.05
	<b><u>GSC-300</u></b>	NITRA solenoid valve cable, miniature pin plug to pigtail, 11.8in/300mm cable length. For use with GVP series solenoid valves.	\$6.00	0.05
	<b><u>GSC-500</u></b>	NITRA solenoid valve cable, miniature pin plug to pigtail, 19.6in/500mm cable length. For use with GVP series solenoid valves.	\$6.50	0.05

## Dimensions

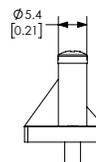
mm [inches]



Part No. **GM-31BP**



Part No. **GM-32BP**



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Manifolds for Modular Solenoid Valves – BVM-3 Series



**BVM - 4-Station**

NITRA pneumatic BVM-3 series modular manifolds simplify the mounting and wiring of BVS-3 series solenoid valves\*. Made of sturdy glass reinforced thermoplastic with DIN rail mounting clips included, they are available in 4 and 8-station models. Push-to-connect inlet and out connections and a 9-pin D-sub connector allow quick and easy tubing and wiring.

## Features

- No tools required to install/remove valves
- 2, 3, 4 or 8-station manifolds available
- 6mm or 1/4" tube inlets
- 35 mm DIN rail mounting clips included
- 9-pin D-sub connector for easy wiring
- 2-year warranty



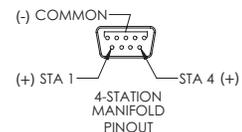
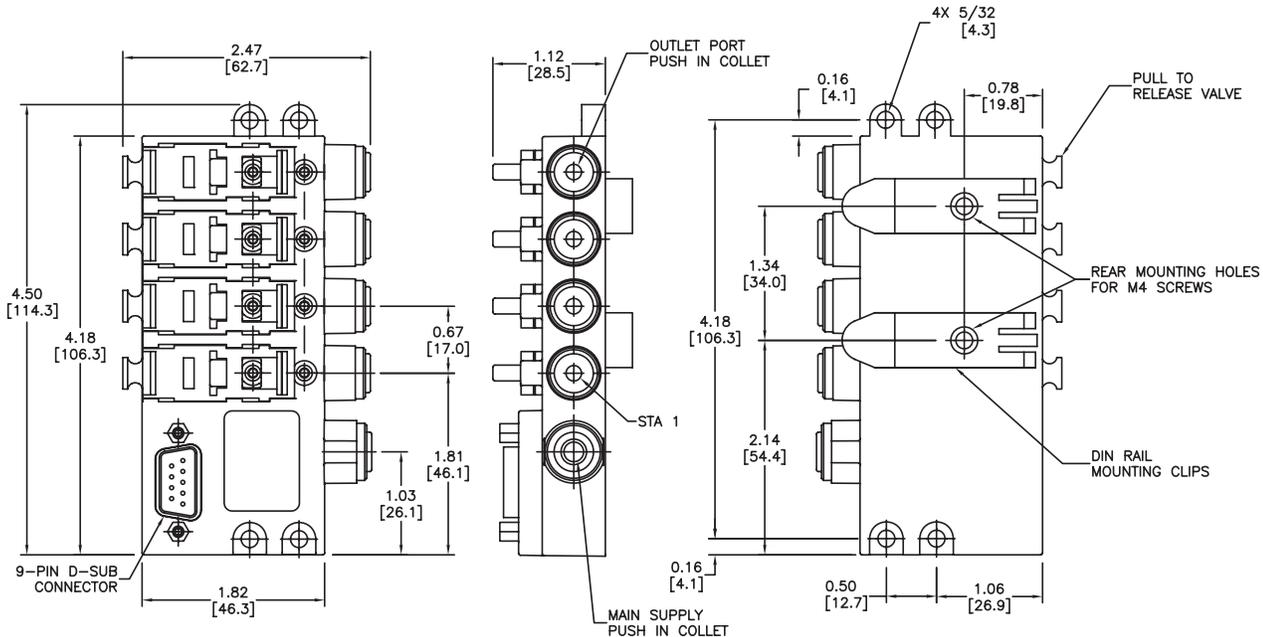
BVM Series Manifolds						
Part No.	Stations	Inlet	Outlet	Connection	Price	Weight (lbs)
<b>BVM-346M</b>	4	6 mm	5/32" (4 mm)	9-pin D-sub	Retired	0.3

\* Works with BVS series valves with flying leads ONLY. Does not accept DIN connector valves

## Dimensions

inches [mm]

### 4-Station Manifold



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

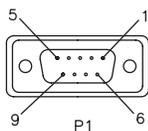


# Pneumatic Directional Control Solenoid Valves – BVS Series - Accessories

## Accessories

BVM Series Manifold Accessories			
Part No.	Description	Price	Weight (lbs)
<a href="#">ZL-DB9F-CBL-2P</a>	ZIPLink pigtail cable with 9-pin D-sub female connector, 28 AWG, 2.0 meter (6.6 ft) length	\$14.50	0.3
<a href="#">ZL-DB9F-CBL-5P</a>	ZIPLink pigtail cable with 9-pin D-sub female connector, 28 AWG, 5.0 meter (16.4 ft) length	\$27.50	0.5

### ZL-DB9F-CBL-xP Pinout



pin out

P1	P2	for BVM Series 4-station man	for BVM Series 8-station man
1	black	N/A	station 4
2	brown	N/A	station 3
3	red	N/A	station 2
4	orange	N/A	station 1
5	yellow	common	common
6	green	station 1	station 5
7	blue	station 2	station 6
8	violet	station 3	station 7
9	grey	station 4	station 8



**ZL-DB9F-CBL-xP**



See solenoid valve cables and connectors section



Above photo shows an assembled BVM Series manifold with BVS Series Solenoids and BVM blanking plug

Note: Manifold must have a BVS valve (flying leads ONLY)

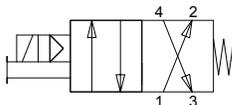


# Pneumatic Directional Control Solenoid Valves – BVS-4 Series



**BVS Series Solenoid with Leads**

**Valve Symbol**



NITRA pneumatic BVS-4 series modular solenoid valves are body ported 4-port (4-way) spool valve models have removable flying leads or DIN Form C connector. Units are only DIN rail mountable when used with BVM series manifolds.

## Features

- Body ported, 4-port (4-way) spool valves
- 1/4" (6mm) push-to-connect ports
- Flow coefficients (Cv) 0.8
- 2-position, single solenoid spring return
- 12 VDC, 24 VDC, 24 VAC or 120 VAC solenoid coils with LED status indication & surge suppression diode
- Flying leads or DIN Form C connection
- Lever manual operator - latching
- 2-year warranty



## BVS (4-port, 2-position) 4 Series Specifications

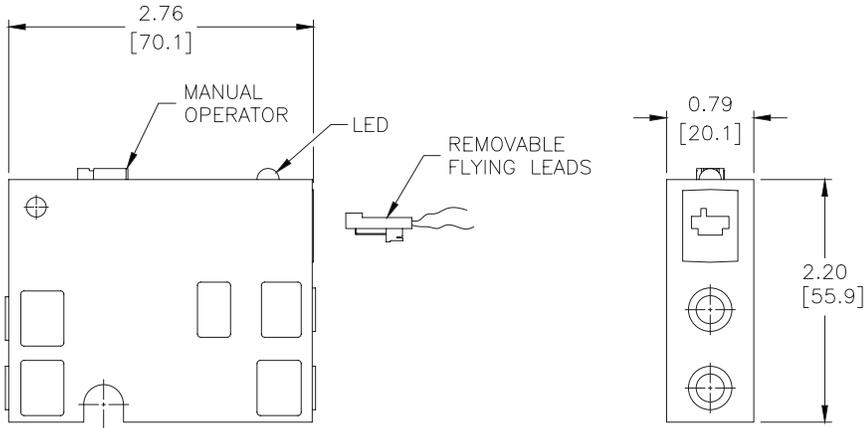
<b>Models</b>	<b>BVS-4251-24A</b>
<b>Price</b>	Retired
<b>Weight (lbs)</b>	0.2
<b>Acting</b>	Spool (2-Position)
<b>Port Size</b>	1/4" Push-to-Connect
<b>Orifice Size</b>	0.2" [5.0 mm] (Cv = 0.8)
<b>Fluid</b>	Air or Inert Gas (to be filtered by 40 μ filter element)
<b>Min. / Max. Pressure</b>	30 psi (2 bar) - 120 psi (8.3 bar)
<b>Vacuum</b>	Air pilot models can be used in vacuum applications with external air signal to pilot ports.
<b>Body</b>	Glass Reinforced Thermoplastic
<b>Voltage</b>	24 VAC
<b>Inrush Power</b>	1.4 VA
<b>Continuous ON Power</b>	1.2 VA
<b>Expected Life</b>	20,000,000 cycles at max 3 cycles/second
<b>Wiring</b>	Removable 18" Flying Leads
<b>Response Time</b>	0.016 sec
<b>Temperature - Operation and Storage</b>	0 to 120 °F (-18 to +49 °C)
<b>Lubrication</b>	Not Required
<b>Protection</b>	IP 65



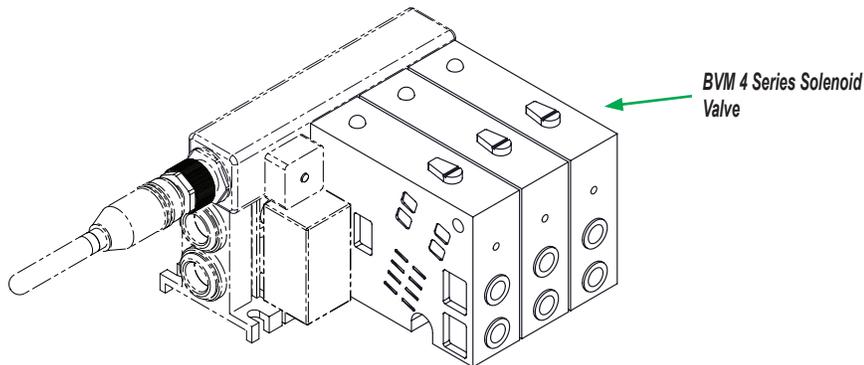
# Pneumatic Directional Control Solenoid Valves – BVS-4 Series

## Dimensions

inches [mm]



**BVS 4 Series w/Removable Leads**



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Directional Control Valves – AVS Air Pilot Valves

NITRA™ pneumatic AVS-5 series directional control air valves are body ported 5-port (4-way) spool valves. Available port sizes are 1/8", 1/4", 3/8" or 1/2" NPT with flow coefficients (Cv) from 0.67 to 2.79. Models are available with single pilot spring return or double pilot 2-position operation. In addition, double pilot models are available with 3-position center closed operation. The AVS series can be used in individual valve applications, or multiple valves can be field assembled on AM-5 series manifolds for simplifying piping connections (AVS-52 & AVS-53 series only). AM-5 series manifolds are available in 2, 4, 6 or 8 stations.



Single Pilot Valve



Double Pilot Valve

## Features

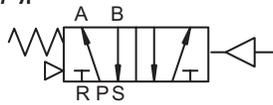
- Body ported, 5-port (4-way) spool valves
- 1/8", 1/4", 3/8" or 1/2" NPT ports
- 2-position, single pilot normally closed, spring return; 2-position, double pilot; 3-position, double pilot center closed
- Single valve or multiple manifold mounted valve applications
- 2-year warranty



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting options



Diagram "A"



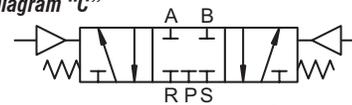
Single Pilot, Spring Return

Diagram "B"



Double Pilot, 2-Position

Diagram "C"



Double Pilot, 3-Position, Center Closed



AVS Series Air Pilot Valve Specifications												
Models	AVS-5241	AVS-5251	AVS-526C1	AVS-5242	AVS-5252	AVS-526C2	AVS-5343	AVS-5353	AVS-536C3	AVS-5444	AVS-5454	AVS-546C4
Price	\$31.00	\$40.50	\$65.00	\$32.50	Retired	\$66.00	\$46.50	\$56.00	\$71.00	\$50.00	\$71.00	\$81.00
Weight (lbs)	0.3	0.4	0.5	0.3	0.4	0.5	0.5	0.6	0.7	1.1	1.2	1.4
Valve Type	5-port 2-position		5-port 3-position closed center	5-port 2-position		5-port 3-position closed	5-port 2-position		5-port 3-position closed	5-port 2-position		5-port 3-position closed center
Acting	single air pilot	double air pilot		single air pilot	double air pilot		single air pilot	double air pilot		single air pilot	double air pilot	
Diagram	A	B	C	A	B	C	A	B	C	A	B	C
Port Size	1/8" NPT			Inlet port 1/4" NPT - Exhaust 1/8" NPT			Inlet port 3/8" NPT - Exhaust 1/4" NPT			1/2" NPT		
Pilot Port Size	1/8 NPT											
Flow Cv	0.78	0.67	0.89	0.67	1.67	1.00	2.79	1.68				
Fluid	Air (to be filtered by 40 µ filter element)											
Min. / Max. Pressure	20 to 115 psi (Pilot must be at least 50% of inlet pressure)											
Max Activate Rate	5 cycles/sec	3 cycles/sec	5 cycles/sec	3 cycles/sec	5 cycles/sec	3 cycles/sec	5 cycles/sec	3 cycles/sec				
Temperature	-5 to +60 °C (23 to 140 °F)											
Lubrication	Not Required											
Body	Aluminum Alloy											
Drawing Figure	1	2	3	1	2	3	4	5	6	7	8	9



# Pneumatic Directional Control - Foot Pedal Valve with Guard

NITRA™ pneumatic CVS series directional control foot pedal valves are 5-port (4-way) spool valves that are ideal for non-electrical operator control applications. Available in 1/4" NPT with a flow coefficient (Cv) of 0.80. Models are available with momentary or latching operation.



Foot Pedal Valve with Guard

## Features

- Body ported, 5-port (4-way) spool valves
- 1/4" NPT ports
- Momentary or latching models
- Includes guard to prevent accidental actuation
- 2-year warranty



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting options

Diagram "A"



5-Port, 2-Pos. Foot Pedal Without Lock (Momentary)

Diagram "B"



5-Port, 2-Pos. Foot Pedal With Lock (Latching)

CVS Series Air Pilot Valve Specifications		
Model	CVS-5272-FP (Momentary)	CVS-527D2-FP (Latching)
Price	\$53.00	\$59.00
Weight (lbs)	2.3	2.4
Valve Type	5-port 2-position	
Acting	Direct Acting	
Diagram	A	B
Port Size	1/4" NPT	
Flow Cv	0.80	
Fluid	Air (to be filtered by 40 μ filter element)	
Min. / Max. Pressure	0-115 psi	
Temperature	-5 to +60 °C (23 to 140 °F)	
Lubrication	Not Required	
Body	Aluminum Alloy	
Drawing Figure	10	



# Pneumatic Directional Control – Manual Valves

NITRA™ pneumatic directional control manual valves are body ported spool or ball valves. Available port sizes are 1/8", 1/4" or 1/2" NPT with flow coefficients (Cv) from 0.78 to 5.29. Models are available in 2-position or 3-position, detented or spring return operation styles.

## Features

- Body ported, 5-port spool or 4-port rotary valves
- 2-position or 3-position detented operation models
- 2-position or 3-position spring return models
- 2-year warranty



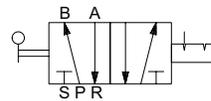
Side View

**Toggle Style Hand Lever Valve**



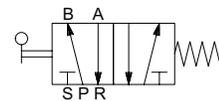
See [www.AutomationDirect.com](http://www.AutomationDirect.com) for a wide variety of fitting options

Diagram "A"



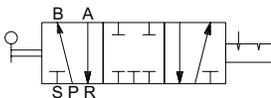
5-Port, 2-Pos. Toggle Detented

Diagram "B"



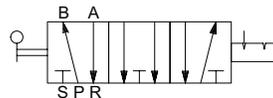
5-Port, 2-Pos. Spring Return

Diagram "C"



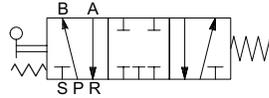
5-Port, 3-Pos. Center Closed Detented

Diagram "D"



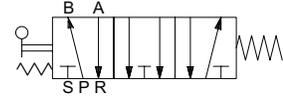
5-Port, 3-Pos. Center Exhaust Detented

Diagram "E"



5-Port, 3-Pos. Center Closed Spring Return

Diagram "F"



5-Port, 3-Pos. Center Exhaust Spring Return

### Toggle Style Hand Lever Valve Specifications

Models	<a href="#">AVS-527D1-HL</a>	<a href="#">AVS-537D2-HL</a>	<a href="#">AVS-527I1-HL</a>	<a href="#">AVS-528DC1-HL</a>	<a href="#">AVS-528DE1-HL</a>	<a href="#">AVS-538DC1-HL</a>	<a href="#">AVS-538DE1-HL</a>	<a href="#">AVS-528C1-HL</a>	<a href="#">AVS-528E1-HL</a>	<a href="#">AVS-538C1-HL</a>	<a href="#">AVS-538E1-HL</a>	<a href="#">AVS-537E2-HL</a>
Price	\$33.00	\$48.00	\$56.00	\$56.00	\$58.00	\$75.00	\$78.00	\$73.00	\$73.00	\$70.00	\$83.00	\$72.00
Weight (lbs)	0.40	0.60	0.40	0.60	0.40	0.40	0.60	0.60	0.40	0.40	0.60	0.60
Valve Type	5-port 2-position detented		5-port 2-position spring return	5-port 3-position center closed detented	5-port 3-position center exhaust detented	5-port 3-position center closed detented	5-port 3-position center exhaust detented	5-port 3-position center closed spring return	5-port 3-position center exhaust spring return	5-port 3-position center closed spring return	5-port 3-position center exhaust spring return	5-port 2-position spring return
Acting	Direct Action Hand Lever											
Diagram	A		B	C	D	C	D	E	F	E	F	B
Port Size	1/8" NPT	1/4" NPT	1/8" NPT	1/8" NPT	1/8" NPT	1/4" NPT	1/4" NPT	1/8" NPT	1/8" NPT	1/4" NPT	1/4" NPT	1/4" NPT
Flow Cv	0.78	1.39	0.78	0.67	0.67	1.00	1.00	0.67	0.67	1.00	1.00	1.39
Fluid	Air (to be filtered by 40 µ filter element)											
Min. / Max. Pressure	0-115 psi											
Temperature	-5 to +60 °C (23 to 140 °F)											
Lubrication	Not Required											
Body	Aluminum Alloy											
Drawing Figure	11											



# Pneumatic Directional Control – Manual Valves



See [www.AutomationDirect.com](http://www.AutomationDirect.com) for  
a wide variety of fitting options

## Push-Pull Valves

Diagram "A"



5-Port, 2-Pos. Push-Pull Detented

Push-Pull Valve Specifications		
Models	<u>AVS-527D1-PP</u>	<u>AVS-537D2-PP</u>
Price	\$31.00	\$38.00
Weight (lbs)	0.3	0.6
Valve Type	5-port 2-position detented	
Acting	Direct Acting Push-Pull	
Diagram	A	
Port Size	1/8" NPT	1/4" NPT
Flow Cv	0.78	1.39
Fluid	Air (to be filtered by 40 µ filter element)	
Min. / Max. Pressure	0-115 psi	
Temperature	-5 to +60 °C (23 to 140 °F)	
Lubrication	Not Required	
Body	Aluminum Alloy	
Drawing Figure	12	



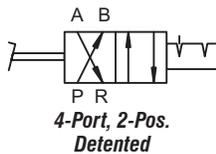
# Pneumatic Directional Control – Manual Valves



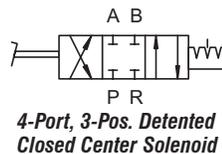
See [www.AutomationDirect.com](http://www.AutomationDirect.com) for  
a wide variety of fitting options

**Rotary Style Hand Lever Valve**

**Diagram "A"**



**Diagram "B"**



Rotary Style Hand Lever Valve Specifications				
Models	<u><a href="#">CVR-437D2-HL</a></u>	<u><a href="#">CVR-438D2-HL</a></u>	<u><a href="#">CVR-447D4-HL</a></u>	<u><a href="#">CVR-448D4-HL</a></u>
<b>Price</b>	\$33.50	\$33.50	\$41.00	\$41.00
<b>Weight (lbs)</b>	1.5	1.5	3.1	3.1
<b>Valve Type</b>	4-port 2-position detented	4-port 3-position detented closed center	4-port 2-position detented	4-port 3-position detented closed center
<b>Acting</b>	Rotary Style Hand Lever			
<b>Diagram</b>	A	B	A	B
<b>Port Size</b>	1/4" NPT	1/4" NPT	1/2" NPT	1/2" NPT
<b>Flow Cv</b>	0.89	0.89	5.29	5.29
<b>Fluid</b>	Air (to be filtered by 40 μ filter element)			
<b>Min. / Max. Pressure</b>	0-145 psi			
<b>Temperature</b>	-5 to +63 °C (23 to 145 °F)			
<b>Lubrication</b>	Not Required			
<b>Body</b>	Aluminum Alloy			
<b>Drawing Figure</b>	13			

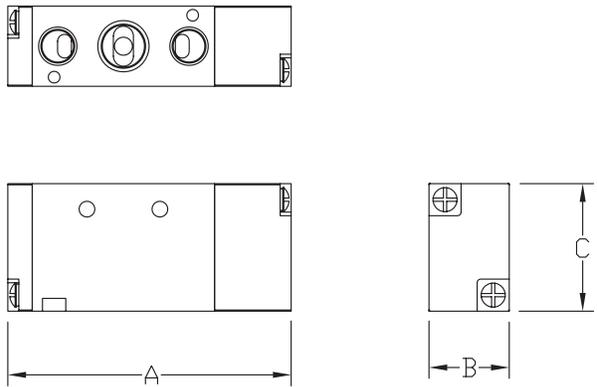


# Pneumatic Directional Control – Manual Valve Dimensions

## Dimensions

mm [inches]

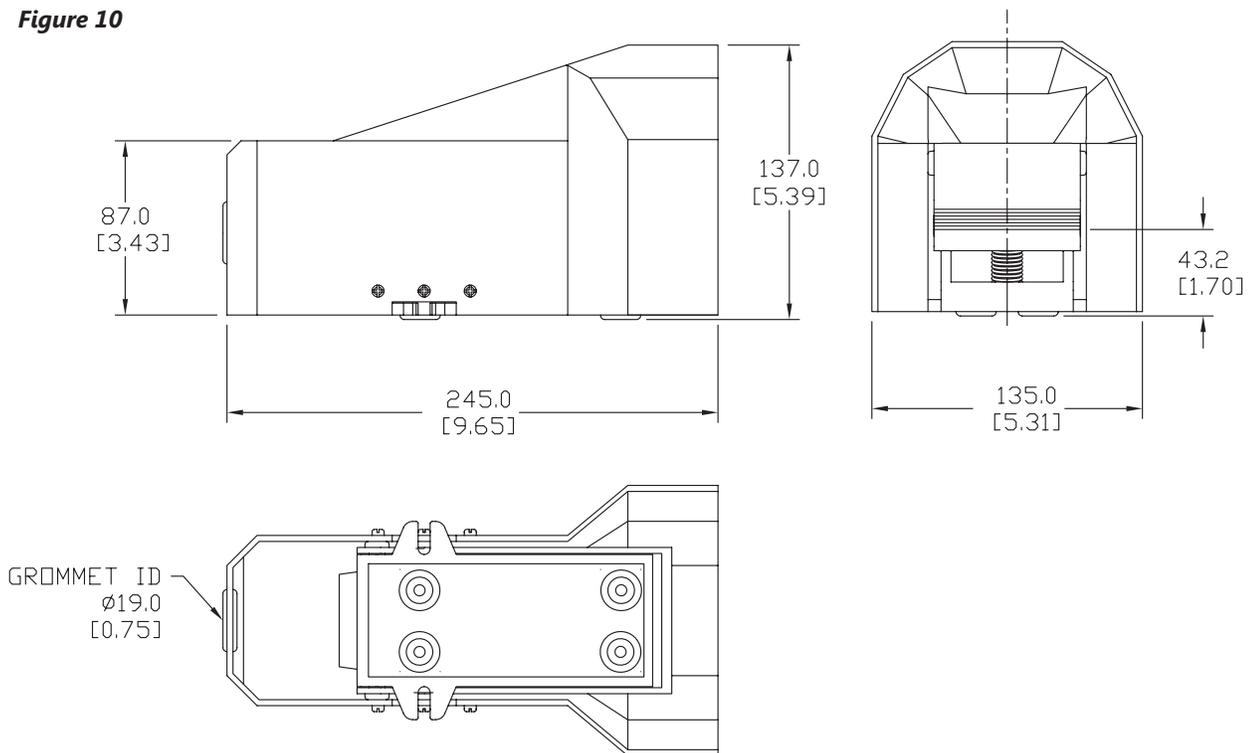
Figures 1-9



PILOT VALVE DIMENSIONS									
DWG FIGURE	1	2	3	4	5	6	7	8	9
DIM. A	77.7 [3.06]	92.0 [3.62]	111.0 [4.37]	95.5 [3.76]	111.0 [4.37]	130.0 [5.12]	128.0 [5.04]	142.0 [5.51]	163.0 [6.42]
DIM. B	22.0 [0.87]	22.0 [0.87]	22.0 [0.87]	27.0 [1.06]	27.0 [1.06]	27.0 [1.06]	34.0 [1.34]	34.0 [1.34]	34.0 [1.34]
DIM. C	35.0 [1.38]	35.0 [1.38]	35.0 [1.38]	40.0 [1.57]	40.0 [1.57]	40.0 [1.57]	50.0 [1.97]	50.0 [1.97]	50.0 [1.97]

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings

Figure 10



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings

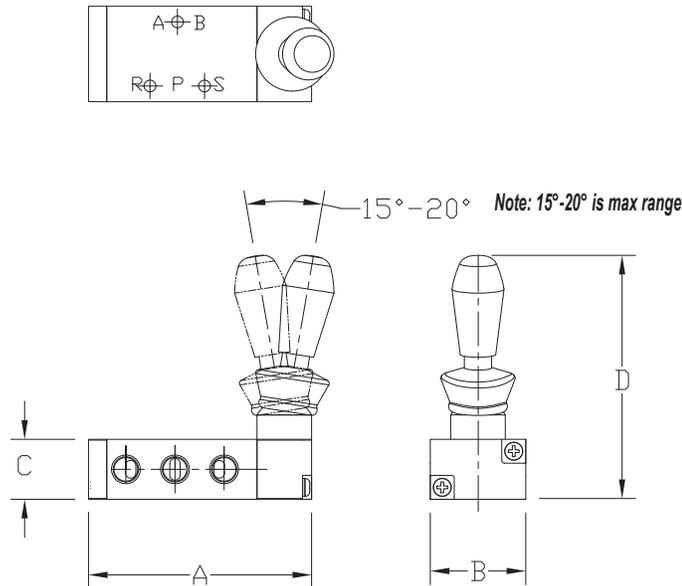


# Pneumatic Directional Control - Manual Valve Dimensions

## Dimensions

mm [inches]

Figure 11



Push-Pull Valve Specifications				
Model	A mm [inches]	B mm [inches]	C mm [inches]	D mm [inches]
<a href="#">AVS-527D1-HL</a>	81.8 [3.22]	35.0 [1.38]	22.0 [0.87]	89.5 [3.52]
<a href="#">AVS-537D2-HL</a>	100.9 [3.97]	40.2 [1.58]	27.1 [1.07]	91.6 [3.61]
<a href="#">AVS-5271-HL</a>	81.5 [3.21]	35.0 [1.38]	22.0 [0.87]	89.9 [3.54]
<a href="#">AVS-528DC1-HL</a>	81.5 [3.21]	35.0 [1.38]	22.0 [0.87]	89.9 [3.54]
<a href="#">AVS-528DE1-HL</a>	81.5 [3.21]	35.0 [1.38]	22.0 [0.87]	89.9 [3.54]
<a href="#">AVS-538DC1-HL</a>	101.0 [3.98]	40.0 [1.57]	27.0 [1.06]	94.0 [3.70]
<a href="#">AVS-538DE1-HL</a>	101.0 [3.98]	40.0 [1.57]	27.0 [1.06]	94.0 [3.70]
<a href="#">AVS-528C1-HL</a>	100.5 [3.96]	35.0 [1.38]	22.0 [0.87]	90.4 [3.56]
<a href="#">AVS-528E1-HL</a>	100.5 [3.96]	35.0 [1.38]	22.0 [0.87]	90.4 [3.56]
<a href="#">AVS-538C1-HL</a>	120.0 [4.72]	40.0 [1.57]	27.0 [1.06]	94.0 [3.70]
<a href="#">AVS-538E1-HL</a>	120.0 [4.72]	40.0 [1.57]	27.0 [1.06]	94.0 [3.70]
<a href="#">AVS-5372-HL</a>	101.0 [3.98]	40.0 [1.57]	27.0 [1.06]	94.0 [3.70]

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# Pneumatic Directional Control – Manual Valve Dimensions

## Dimensions

mm [inches]

Figure 12

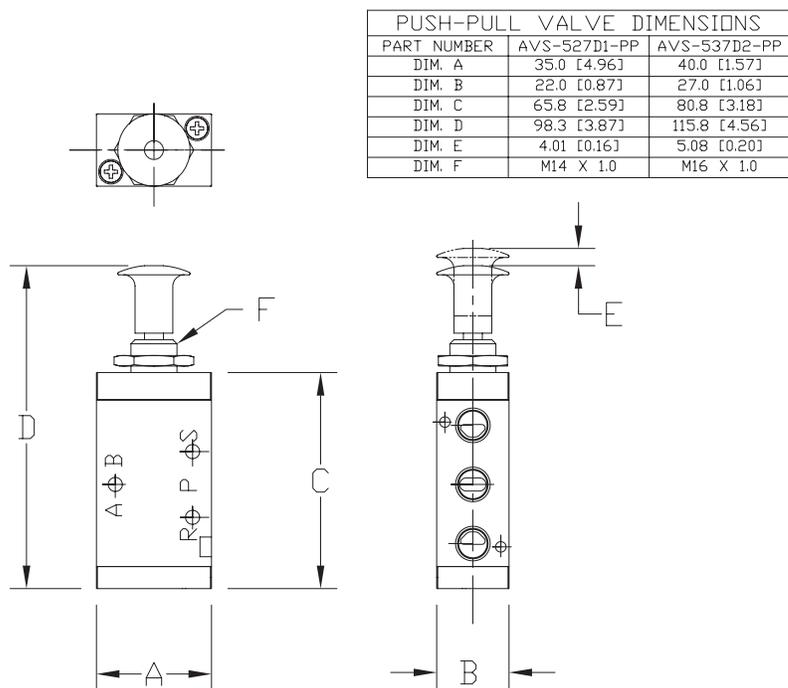
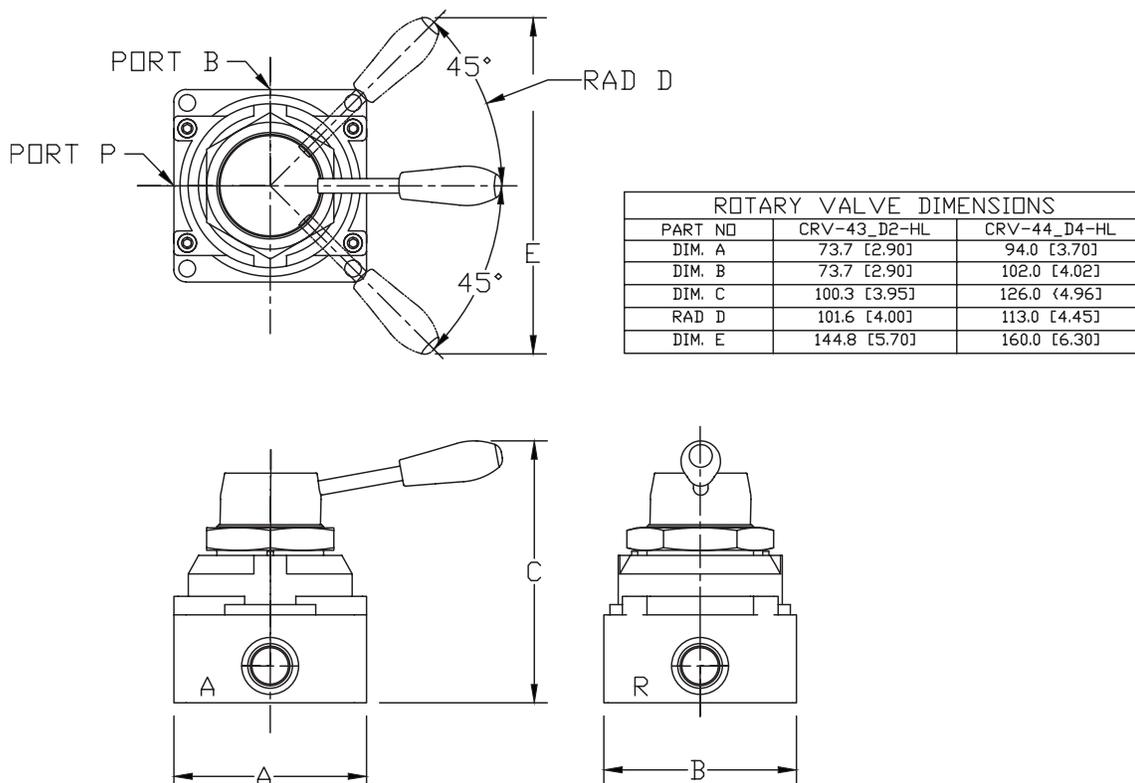


Figure 13



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# Pneumatic Pushbuttons, 22 mm

NITRA® pneumatic pushbuttons are all plastic and come with adapters to allow mounting of up to two 3-way valves, or one valve and one to three contact blocks. They fit in a standard 22.5 mm hole, just like electrical pushbuttons.

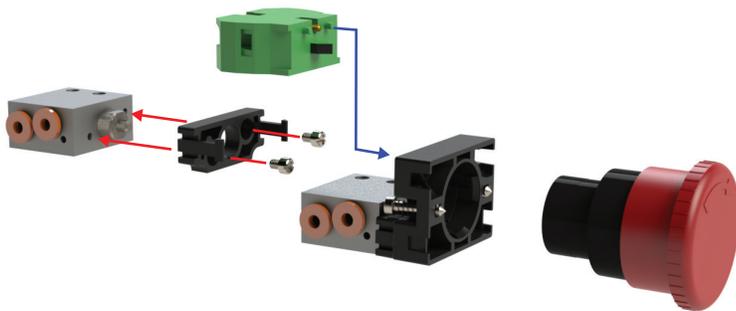
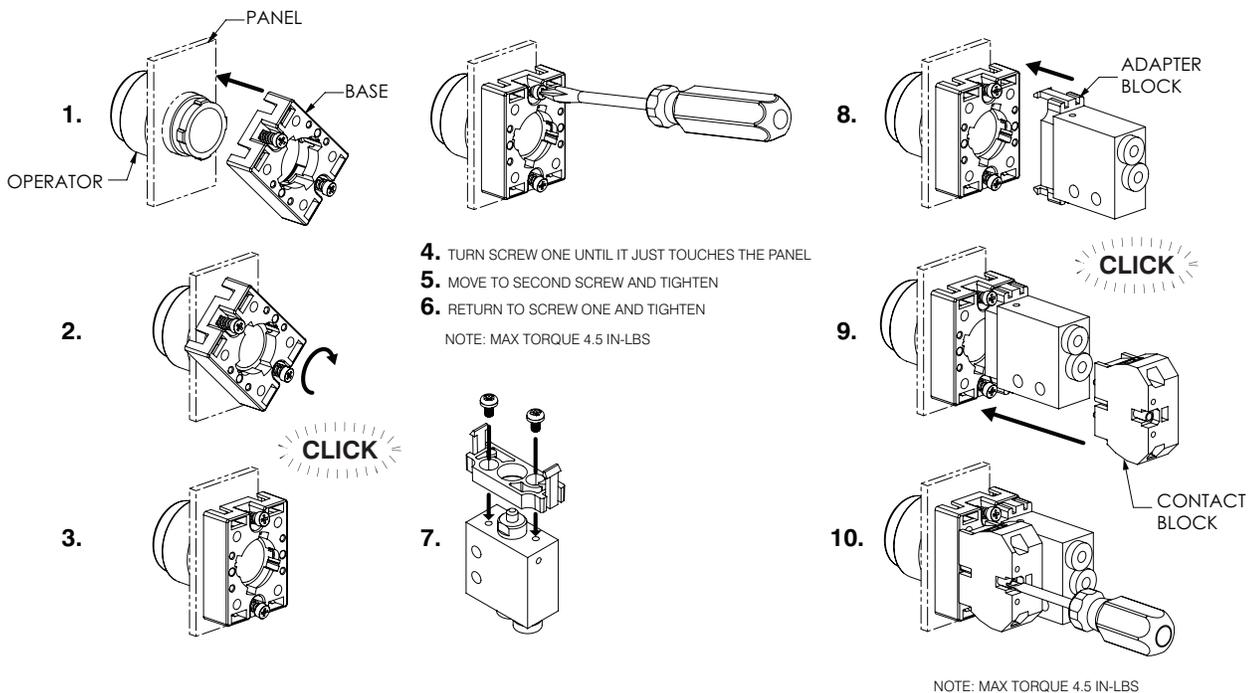
## Features

- Plastic bezel and button
- Valve adapters and mounting screws included
- Valves sold separately
- Bases will work with GCX plastic operators and **only** the three ECX Series contact blocks shown below



Pushbutton Specifications	
Operating Temperature	-13 to 158 °F (-25 to +70 °C)
Storage Temperature	-40 to 176 °F (-40 to +80 °C)
Mechanical Life	1,000,000 cycles
Switching Cycles	3600 cycles/hr
Mounting (Valve)	(4) M3x5 valve mounting screws included
Protection	IP65 after installation
Approvals	CE

## Adapter Block Installation



**ECX1040-2**



**ECX1042-2**



**ECX1030-2**



# Pneumatic Pushbuttons, 22 mm

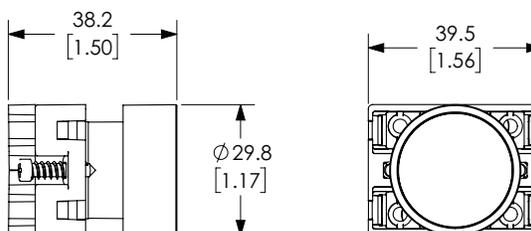
## Momentary flush pushbuttons with protective plastic ring (30 mm diameter actuator)



**ECP3100**

Part Number	Color	Description	Weight (lbs)	Price
<a href="#">ECP3100</a>	Black	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: black, flush, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3101</a>	Red	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: red, flush, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3102</a>	Green	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: green, flush, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3103</a>	Yellow	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: yellow, flush, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3104</a>	Blue	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: blue, flush, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3105</a>	White	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: white, flush, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3106</a>	Red	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: red, flush, 30mm, round, plastic, operator text "(O)".	0.07	\$3.25
<a href="#">ECP3107</a>	Green	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: green, flush, 30mm, round, plastic, operator text "(I)".	0.07	\$3.25

### Dimensions mm [inches]



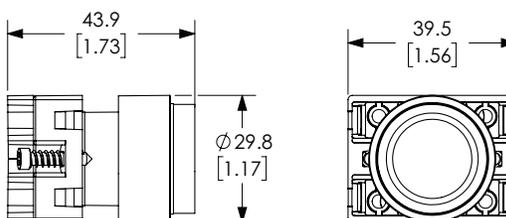
## Momentary extended pushbuttons with protective plastic ring (30mm diameter actuator)



**ECP3110**

Part Number	Color	Description	Weight (lbs)	Price
<a href="#">ECP3110</a>	Black	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: black, extended, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3111</a>	Red	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: red, extended, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3112</a>	Green	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: green, extended, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3113</a>	Yellow	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: yellow, extended, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3114</a>	Blue	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: blue, extended, 30mm, round, plastic.	0.07	\$3.00
<a href="#">ECP3115</a>	White	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: white, extended, 30mm, round, plastic.	0.07	\$3.00

### Dimensions mm [inches]



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# Pneumatic Pushbuttons, 22 mm Mushroom

## Mushroom pushbutton operator (40 mm & 60 mm diameter actuator)



**ECP3131**



**ECP3133**



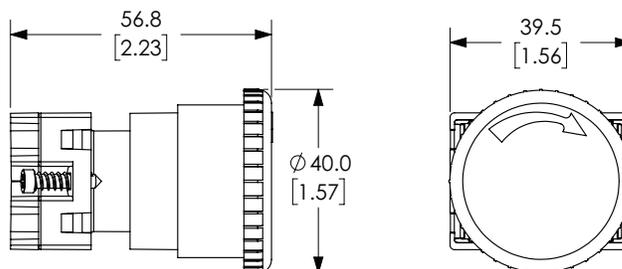
**ECP3138**

Part Number	Color	Description	Weight (lbs)	Price
<b>ECP3131</b>	Red	NITRA pneumatic pushbutton, IP65, 22 mm, twist-to-release, emergency stop, plastic base, plastic bezel, black, operator only, Operator: red, mushroom, 40mm, round, plastic.	0.1	\$8.25
<b>ECP3132</b>	Black	NITRA pneumatic pushbutton, IP65, 22 mm, twist-to-release, plastic base, plastic bezel, black, operator only, Operator: black, mushroom, 60mm, round, plastic.	0.1	\$10.50
<b>ECP3133</b>	Black	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: black, mushroom, 60mm, round, plastic.	0.1	\$11.50
<b>ECP3134</b>	Black	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: black, mushroom, 40mm, round, plastic.	0.1	\$6.25
<b>ECP3135</b>	Red	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: red, mushroom, 40mm, round, plastic.	0.1	\$6.25
<b>ECP3136</b>	Red	NITRA pneumatic pushbutton, IP65, 22 mm, twist-to-release, emergency stop, plastic base, plastic bezel, black, operator only, Operator: red, mushroom, 60mm, round, plastic.	0.1	\$10.00
<b>ECP3137</b>	Red	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: red, mushroom, 60mm, round, plastic.	0.1	\$8.75
<b>ECP3138</b>	Yellow	NITRA pneumatic pushbutton, IP65, 22 mm, twist-to-release, plastic base, plastic bezel, black, operator only, Operator: yellow, mushroom, 60mm, round, plastic.	0.1	\$10.50
<b>ECP3139</b>	Yellow	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: yellow, mushroom, 40mm, round, plastic.	0.1	\$6.25

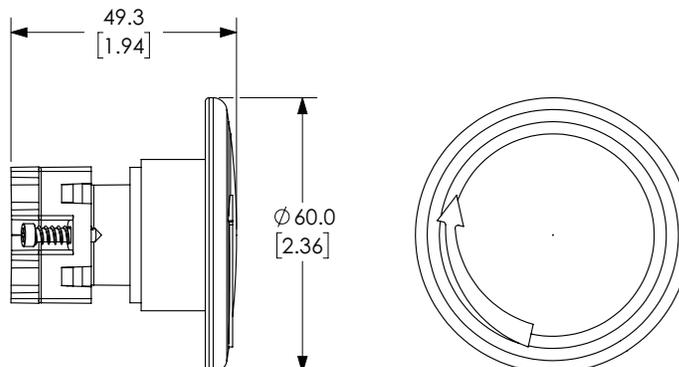
### Dimensions

mm [inches]

#### 40mm Versions



#### 60mm Versions



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# Pneumatic Pushbuttons, 22 mm Key Operated & Double Headed

## Mushroom pushbutton operator - key operated (40 mm dia. actuator)



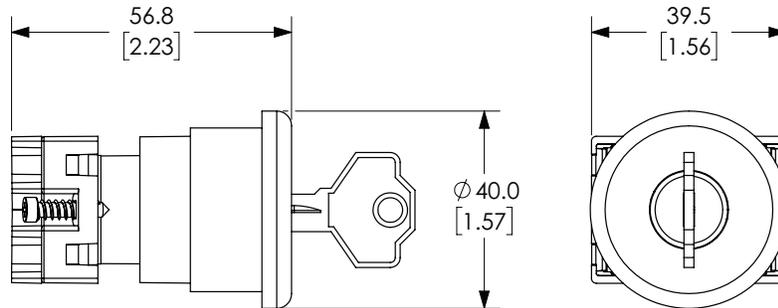
**ECP3141**

Part Number	Color	Description	Weight (lbs)	Price
<b><u>ECP3141</u></b>	Red	NITRA pneumatic pushbutton, IP65, 22 mm, key operated release, plastic base, plastic bezel, black, operator only, Operator: red, mushroom, 40 mm, round, plastic.	0.19	\$12.50



*Note: Keyed switches come with two keys. All plastic 22mm keyed switches are keyed the same. Replacement keys are available. Order part no. ECX1067-2 (pkg. of 2). Keys for plastic 22mm keyed switches are not compatible with Cutler-Hammer key switches.*

### Dimensions mm [inches]



## Double headed pushbutton operator



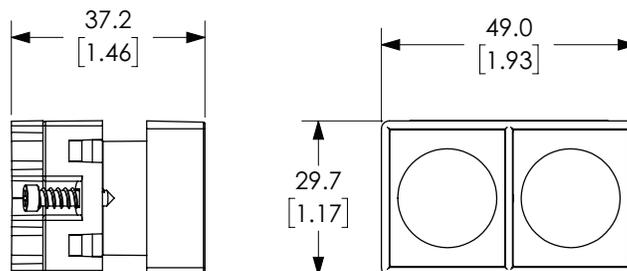
**ECP3150**



**ECP3152**

Part Number	Color	Description	Weight (lbs)	Price
<b><u>ECP3150</u></b>	Green/Red	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: green and red, double headed, rectangular, plastic.	0.08	\$5.50
<b><u>ECP3152</u></b>	Green/Red	NITRA pneumatic pushbutton, IP65, 22 mm, momentary, plastic base, plastic bezel, black, operator only, Operator: green and red, double headed, rectangular, plastic, operator text "(I) and (O)".	0.08	\$6.25

### Dimensions mm [inches]



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# Pneumatic Selector Switches, 22 mm Lever

## Knob selector switches



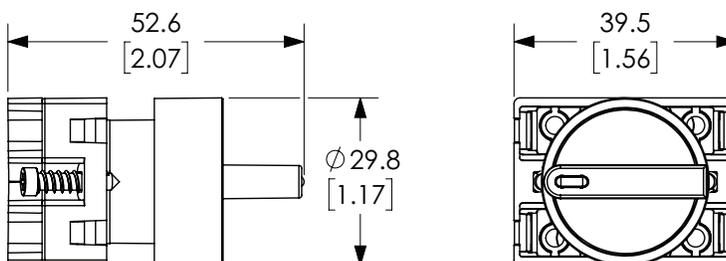
**ECP3300**

Part Number	Color	Description	Weight (lbs)	Price
<a href="#"><u>ECP3300</u></a>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 2-position, maintained, plastic base, plastic bezel, operator only, Operator: black, knob, 30 mm, round, plastic.	0.09	\$5.25
<a href="#"><u>ECP3310</u></a>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 2-position, spring return from right, plastic base, plastic bezel, operator only, Operator: black, knob, 30 mm, round, plastic.	0.09	\$6.50
<a href="#"><u>ECP3320</u></a>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 3-position, maintained, plastic base, plastic bezel, operator only, Operator: black, knob, 30 mm, round, plastic.	0.09	\$5.25
<a href="#"><u>ECP3330</u></a>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 3-position, spring return to center from right or left, plastic base, plastic bezel, operator only, Operator: black, knob, 30 mm, round, plastic.	0.09	\$6.25



**ECP3320**

### Dimensions mm [inches]



## Long lever selector switches



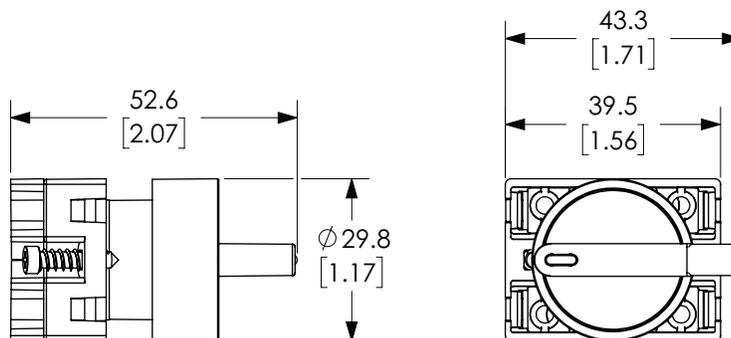
**ECP3350**

Part Number	Color	Description	Weight (lbs)	Price
<a href="#"><u>ECP3350</u></a>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 2-position, maintained, plastic base, plastic bezel, operator only, Operator: black, lever, 30 mm, round, plastic.	0.09	\$6.50
<a href="#"><u>ECP3360</u></a>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 2-position, spring return from right, plastic base, plastic bezel, operator only, Operator: black, lever, 30 mm, round, plastic.	0.09	\$6.75
<a href="#"><u>ECP3370</u></a>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 3-position, maintained, plastic base, plastic bezel, operator only, Operator: black, lever, 30 mm, round, plastic.	0.09	\$6.50
<a href="#"><u>ECP3380</u></a>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 3-position, spring return to center from right or left, plastic base, plastic bezel, operator only, Operator: black, lever, 30 mm, round, plastic.	0.09	\$6.75



**ECP3370**

### Dimensions mm [inches]



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# Pneumatic Key Selector Switches, 22 mm

## Key selector switches



**ECP3420**

Part Number	Color	Description	Weight (lbs)	Price
<b>ECP3420</b>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 2-position, maintained, key removable in all positions, plastic base, plastic bezel, operator only, Operator: black, key, 30 mm, round, plastic.	0.17	\$12.50
<b>ECP3430</b>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 2-position, spring return from right, key removable left position, plastic base, plastic bezel, operator only, Operator: black, key, 30 mm, round, plastic.	0.17	\$12.50
<b>ECP3470</b>	Black	NITRA pneumatic selector switch, IP65, 22 mm, 3-position, maintained, key removable in all positions, plastic base, plastic bezel, operator only, Operator: black, key, 30 mm, round, plastic.	0.17	\$11.50

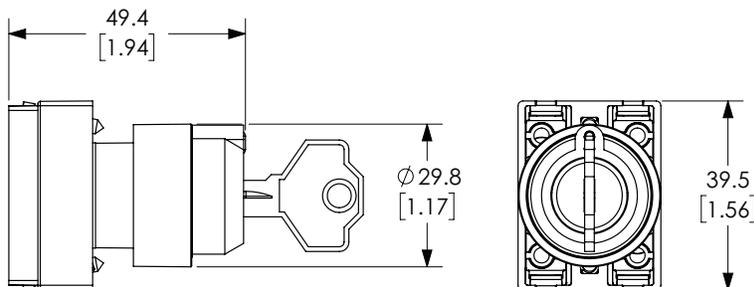


*Note: Keyed switches come with two keys. All plastic 22 mm keyed switches are keyed the same. Replacement keys are available. Order part no. ECX1067-2 (pkg. of 2). Keys for plastic 22 mm keyed switches are not compatible with Cutler-Hammer key switches.*



**ECP3470**

### Dimensions mm [inches]



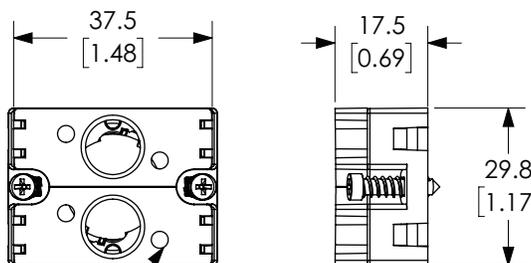
## Pneumatic switch accessory - support base with adapters



**ECP3029-02**

Part Number	Description	Weight (lbs)	Price
<b>ECP3029-02</b>	NITRA valve adapter block, replacement, plastic. For use with ECP series pneumatic pushbuttons.	0.03	\$1.00

### Dimensions mm [inches]



M3 THRU HOLE SCREWS INCLUDED

*Note: base sold as three piece kit.*

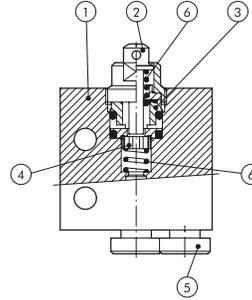
See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Manual Valves

## Pneumatic Manual Valve Materials

1. Aluminum valve body
2. Chemically nickel-plated brass button
3. Brass distance plates
4. NBR gaskets
5. Stainless steel, brass and plastic push-to-connect cartridges
6. Stainless steel springs



## Pneumatic Metal Plunger Valves

These pneumatic valves are used with Nitra pneumatic pushbuttons and switches

## Features

- Available in normally open or normally closed
- 5/32" [4 mm] push-to-connect ports located on side or end

### Valve Symbols

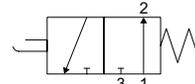


Diagram "A"

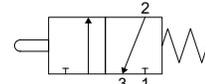


Diagram "B"

Specifications				
<b>Models</b>	<i>EVP-CA-PL</i>	<i>EVP-AA-PL</i>	<i>EVP-CS-PL</i>	<i>EVP-AS-PL</i>
<b>Price</b>	\$24.00	\$26.50	\$21.50	\$24.00
<b>Weight (lbs)</b>	0.1	0.1	0.1	0.1
<b>Valve Type</b>	2-port (3-way) 2-position			
<b>Acting</b>	Metal plunger, normally closed, spring return	Metal plunger, normally open, spring return	Metal plunger, normally closed, spring return	Metal plunger, normally open, spring return
<b>Diagram</b>	B	A	B	A
<b>Port Size</b>	Axial ports 5/32 in (4 mm)		Side ports 5/32 in (4 mm)	
<b>Flow (Cv)</b>	0.13	0.13	0.13	0.13
<b>Fluid</b>	Air (to be filtered by 40 μ filter element)			
<b>Min. / Max. Pressure</b>	7.25 to 145 psi (0.5 to 10 bar)			
<b>Temperature</b>	14 to 140 °F (-10 to +60 °C)			
<b>Lubrication</b>	Not Required			
<b>Body</b>	Aluminum			
<b>Protection</b>	IP65			

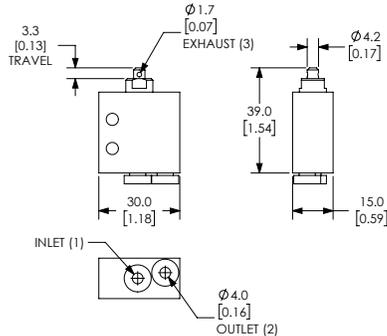


*EVP-CA-PL*

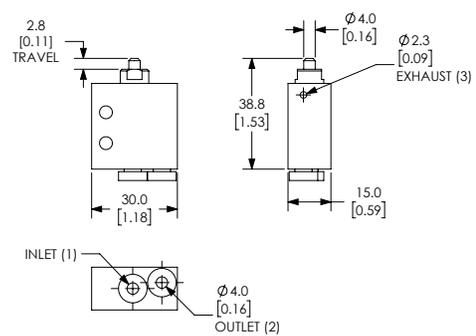


*EVP-CS-PL*

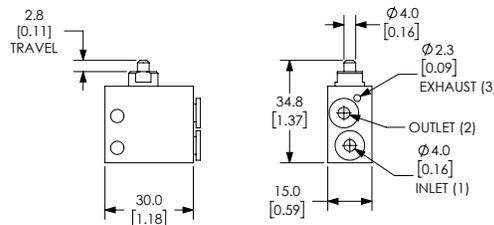
## Dimensions mm [inches]



*EVP-CA-PL*



*EVP-AA-PL*



*EVP-CS-PL / EVP-AS-PL*

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Manual Valves

## Pneumatic Metal Plunger Valves with metal roller

### Features

- These valves function as pneumatic limit switches
- Available in normally open or normally closed
- 5/32" [4 mm] push-to-connect ports located on side or end



**EVP-CA-R**



**EVP-AS-R**

### Valve Symbols

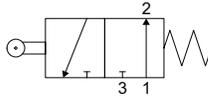


Diagram "C"

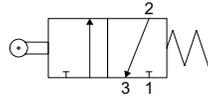
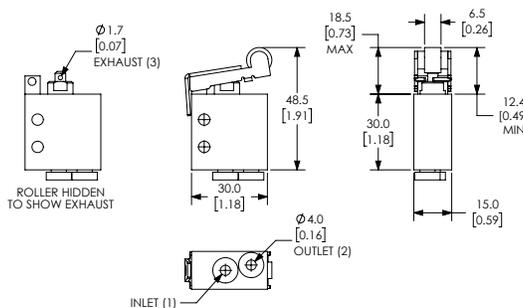


Diagram "D"

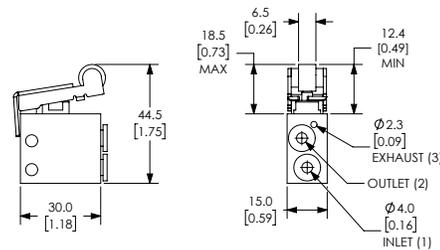
Specifications				
Models	<i>EVP-CA-R</i>	<i>EVP-AA-R</i>	<i>EVP-CS-R</i>	<i>EVP-AS-R</i>
Price	\$28.00	\$28.00	\$26.00	\$28.50
Weight (lbs)	0.1	0.1	0.1	0.1
Valve Type	2-port (3-way) 2-position			
Acting	Metal plunger with metal roller, normally closed, spring return	Metal plunger with metal roller, normally open, spring return	Metal plunger with metal roller, normally closed, spring return	Metal plunger with metal roller, normally open, spring return
Diagram	D	C	D	C
Port Size	Axial ports 5/32 in (4 mm)		Side ports 5/32 in (4 mm)	
Flow (Cv)	0.13	0.13	0.13	0.13
Fluid	Air (to be filtered by 40 μ filter element)			
Min. / Max. Pressure	7.25 to 145 psi (0.5 to 10 bar)			
Temperature	14 to 140 °F (-10 to +60 °C)			
Lubrication	Not Required			
Body	Aluminum			
Protection	IP65			

### Dimensions

mm [inches]



**EVP-CA-R / EVP-AA-R**



**EVP-CS-R / EVP-AS-R**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Manual Valves

## Pneumatic Metal Plunger Valves with one-way metal roller

### Features

- These valves function as pneumatic limit switches
- Available in normally closed
- 5/32" [4 mm] push-to-connect ports located on side or end



Valve Symbol

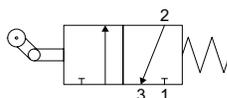


Diagram "E"

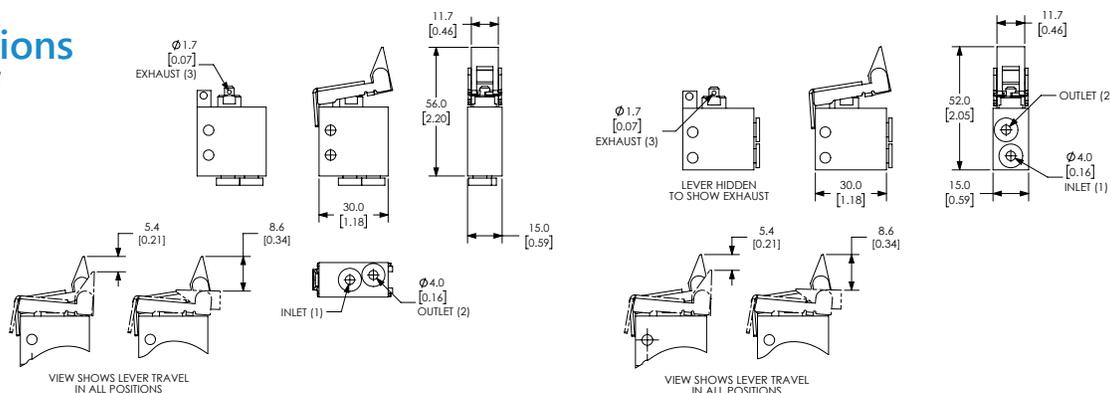
**EVP-CA-T**



**EVP-CS-T**

Specifications		
Models	<i>EVP-CA-T</i>	<i>EVP-CS-T</i>
Price	\$29.50	\$27.50
Weight (lbs)	0.1	0.1
Valve Type	2-port (3-way) 2-position	
Acting	Metal plunger with one-way metal roller, normally closed, spring return	Metal plunger with one-way metal roller, normally closed, spring return
Diagram	E	E
Port Size	Axial ports 5/32 in (4 mm)	Side ports 5/32 in (4 mm)
Flow (Cv)	0.13	0.13
Fluid	Air (to be filtered by 40 μ filter element)	
Min. / Max. Pressure	7.25 to 145 psi (0.5 to 10 bar)	
Temperature	14 to 140 °F (-10 to +60 °C)	
Lubrication	Not Required	
Body	Aluminum	
Protection	IP65	

### Dimensions mm [inches]



**EVP-CA-T**

**EVP-CS-T**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Manual Valves

## Pneumatic Metal Plunger Valves for thru-panel mounting

### Features

- These valves function as pneumatic limit switches
- Available in normally closed
- 5/32" [4 mm] push-to-connect ports located on side or end
- Fits 1/2" diameter hole in panel



Valve Symbol

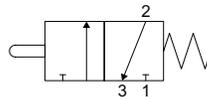


Diagram "B"

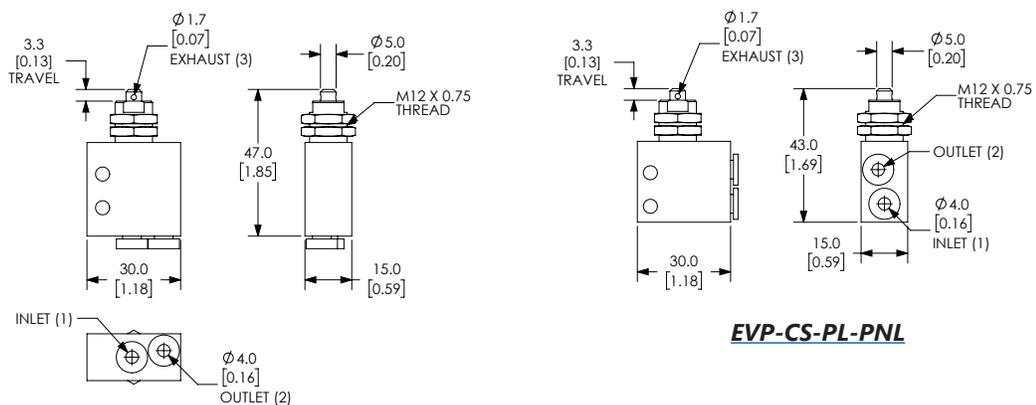
**EVP-CA-PL-PNL**



**EVP-CS-PL-PNL**

Specifications		
Models	<b>EVP-CA-PL-PNL</b>	<b>EVP-CS-PL-PNL</b>
Price	\$26.00	\$23.50
Weight (lbs)	0.1	0.1
Valve Type	2-port (3-way) 2-position	
Acting	Metal plunger, normally closed, spring return, through panel mount	Metal plunger, normally closed, spring return, through panel mount
Diagram	B	B
Port Size	Axial ports 5/32 in (4 mm)	Side ports 5/32 in (4 mm)
Flow (Cv)	0.13	0.13
Fluid	Air (to be filtered by 40µ filter element)	
Min. / Max. Pressure	7.25 to 145 psi (0.5 to 10 bar)	
Temperature	14 to 140 °F (-10 to +60 °C)	
Lubrication	Not Required	
Body	Aluminum	
Protection	IP65	

### Dimensions mm [inches]



**EVP-CA-PL-PNL**

**EVP-CS-PL-PNL**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

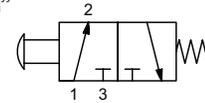


# Pneumatic Manual Valves

## Manual Valves, Normally Closed, Spring Return, Pushbutton

NITRA GVP manual valves offer a simple, convenient method for directional control and other pneumatic valve applications. All valves can be through panel mounted for a very clean looking operator interface. Valves with male NPT inlets can be threaded into MR series air manifolds to simplify supply connections.

Diagram "A"



3-port, 2-position



Part No. GVP-3C2P-PB

- Swivel output port
- High flow
- Poppet design contributes to product life
- Made in USA



Part No. GVP-3C1M2P-PB

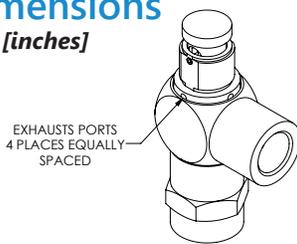


Part No. GVP-3C1F-PB

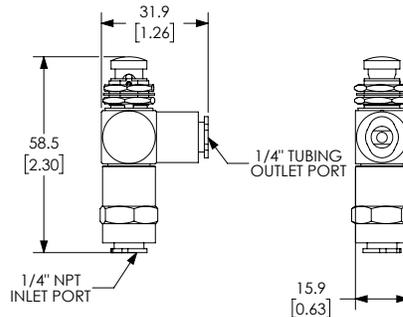
Specifications			
Models	<u>GVP-3C2P-PB</u>	<u>GVP-3C1M2P-PB</u>	<u>GVP-3C1F-PB</u>
Price	\$39.50	\$38.00	\$34.00
Weight (lbs)	0.1	0.1	0.1
Valve Type	3-port (3-way) 2-position		
Acting	Pushbutton, normally closed, spring return, through panel mount		
Diagram	A	A	A
Port Size	90-degree ports, 1/4in tube inlet(s), 1/4in tube outlet(s), (1) vent hole exhaust(s)	90-degree ports, 1/8in male NPT inlet(s), 1/4in tube outlet(s), (1) vent hole exhaust(s)	90-degree ports, 1/8in female NPT inlet(s), 1/8in FNPT outlet(s), (1) vent hole exhaust(s)
Flow (Cv)	0.29	0.29	0.29
Fluid	Air (to be filtered by 40 μ filter element)		
Min. / Max. Pressure	0 to 125 psi (0 to 8.62 bar)		
Temperature	-20 to +160 °F (-51 to +71 °C)		
Lubrication	Not Required		
Body	Aluminum/ Anodize, Brass/ Electroless Nickel, Stainless Steel, Nylon, Acetal Copolymer, Buna-N		
Protection	IP65		

### Dimensions mm [inches]

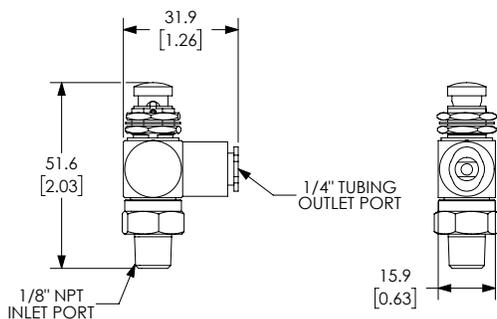
Note: For panel mounting  
 • Maximum thickness 0.25"  
 • Diameter Ø 0.484 thru



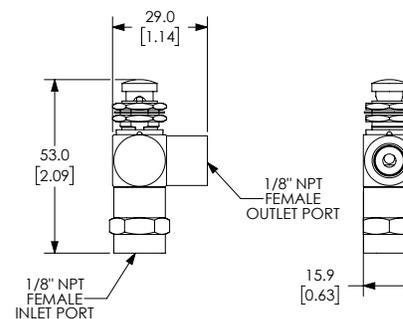
TYPICAL EXHAUST ON GVP- VALVES  
 LOCK NUTS AND WASHERS NOT SHOWN FOR CLARITY



Part No. GVP-3C2P-PB



Part No. GVP-3C1M2P-PB



Part No. GVP-3C1F-PB

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



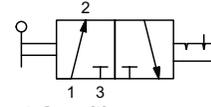
# Pneumatic Manual Valves

## Manual Valves, Normally Closed, Detented, Toggle

NITRA GVP manual valves offer a simple, convenient method for directional control and other pneumatic valve applications. All valves can be through panel mounted for a very clean looking operator interface. Valves with male NPT inlets can be threaded into MR series air manifolds to simplify supply connections.

- Swivel output port
- High flow
- Poppet design contributes to product life
- Made in USA

Diagram "A"



3-port, 2-position



Part No. GVP-3C2P-TD



Part No. GVP-3C1M2P-TD



Part No. GVP-3C1F-TD

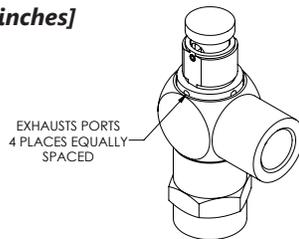


Specifications			
Models	<u>GVP-3C2P-TD</u>	<u>GVP-3C1M2P-TD</u>	<u>GVP-3C1F-TD</u>
Price	\$41.00	\$42.00	\$40.00
Weight (lbs)	0.1	0.1	0.1
Valve Type	3-port (3-way) 2-position, NC		
Acting	Toggle style actuator, normally closed, detented, through panel mount		
Diagram	A	A	A
Port Size	90-degree ports, 1/4in tube inlet(s), 1/4in tube outlet(s), (1) vent hole exhaust(s)	90-degree ports, 1/8in male NPT inlet(s), 1/4in tube outlet(s), (1) vent hole exhaust(s)	90-degree ports, 1/8in female NPT inlet(s), 1/8in FNPT outlet(s), (1) vent hole exhaust(s)
Flow (Cv)	0.23	0.23	0.23
Fluid	Air (to be filtered by 40 μ filter element)		
Min. / Max. Pressure	0 to 125 psi (0 to 8.62 bar)		
Temperature	-20 to +160 °F (-51 to +71 °C)		
Lubrication	Not Required		
Body	Aluminum/ Anodize, Brass/ Electroless Nickel, Stainless Steel, Nylon, Acetal Copolymer, Buna-N		
Protection	IP65		

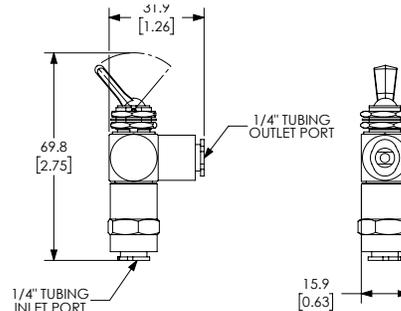
## Dimensions

mm [inches]

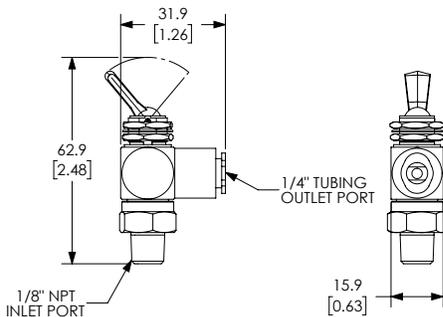
Note: For panel mounting  
 • Maximum thickness 0.25"  
 • Diameter Ø 0.484 thru



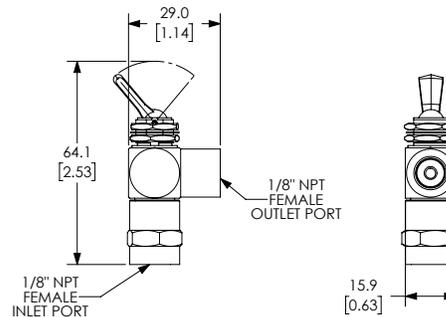
TYPICAL EXHAUST ON GVP- VALVES  
 LOCK NUTS AND WASHERS NOT SHOWN FOR CLARITY



Part No. GVP-3C2P-TD



Part No. GVP-3C1M2P-TD



Part No. GVP-3C1F-TD

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Manual Valves

## 303 Stainless Steel Single Stem Style



Part No. GVS-3COF-TD-SS



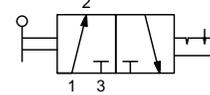
Part No. GVS-3COF-PB-SS

NITRA GVS manual valves offer a simple, convenient method for directional control and other pneumatic valve applications. All valves can be through panel mounted for a very clean looking operator interface.

- Single stem design
- Stainless Steel construction
- High flow
- Made in USA

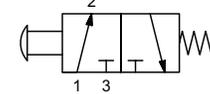


Diagram "A"



3-port, 2-position

Diagram "B"

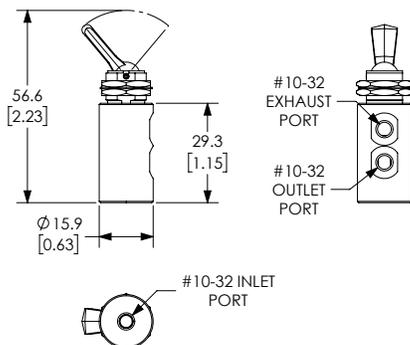


3-port, 2-position

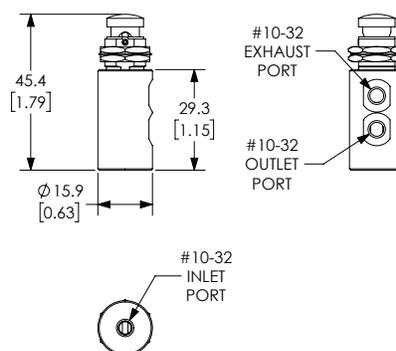
Specifications		
Models	<u>GVS-3COF-TD-SS</u>	<u>GVS-3COF-PB-SS</u>
Price	\$45.00	\$43.50
Weight (lbs)	0.1	0.1
Valve Type	3-port (3-way) 2-position	
Acting	Toggle style actuator, normally closed, detented, through panel mount	Pushbutton, normally closed, spring return, through panel mount
Diagram	A	B
Port Size	90-degree ports, #10-32 female threaded inlet(s), #10-32 female threaded outlet(s), #10-32 female threaded exhaust(s)	90-degree ports, #10-32 female threaded inlet(s), #10-32 female threaded outlet(s), #10-32 female threaded exhaust(s)
Flow (Cv)	0.27	0.27
Fluid	Air (to be filtered by 40µ filter element)	
Min. / Max. Pressure	26" Hg to 125 psi (-0.8 to 8.62 bar)	
Temperature	-20 to +160 °F (-51 to +71 °C)	
Lubrication	Not Required	
Body	Brass/ Electroless Nickel, Aluminum/ Anodize, Stainless Steel, Buna-N	
Protection	IP65	

### Dimensions mm [inches]

- Note: For panel mounting
- Maximum thickness 0.25"
  - Diameter Ø 0.484 thru



Part No. GVS-3COF-TD-SS



Part No. GVS-3COF-PB-SS

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# Pneumatic Manual Valves

## Aluminum Single Stem Style



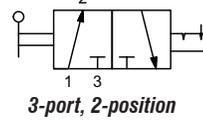
Part No. **GVS-3C1F-TD**

NITRA GVS manual valves offer a simple, convenient method for directional control and other pneumatic valve applications. All valves can be through panel mounted for a very clean looking operator interface.

- Single stem design
- High flow
- Made in USA

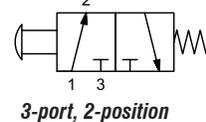


Diagram "A"



3-port, 2-position

Diagram "B"



3-port, 2-position



Part No. **GVS-3C1F-PB**



Part No. **GVS-3CS1F-TD**

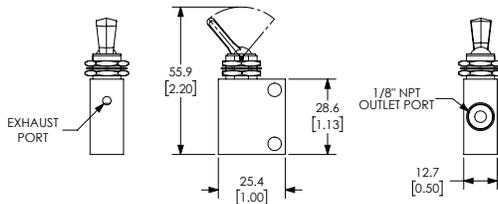


Part No. **GVS-3CS1F-PB**

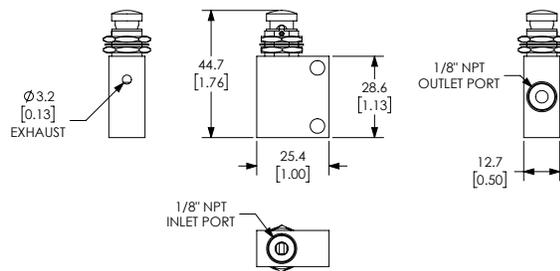
Specifications				
<b>Models</b>	<b>GVS-3C1F-TD</b>	<b>GVS-3C1F-PB</b>	<b>GVS-3CS1F-TD</b>	<b>GVS-3CS1F-PB</b>
<b>Price</b>	\$31.50	\$27.50	\$40.00	\$38.00
<b>Weight (lbs)</b>	0.05	0.05	0.1	0.1
<b>Valve Type</b>	3-port (3-way) 2-position			
<b>Acting</b>	Toggle style actuator, normally closed, detented, through panel mount	Pushbutton, normally closed, spring return, through panel mount	Toggle style actuator, normally closed, detented, through panel mount	Pushbutton, normally closed, spring return, through panel mount
<b>Diagram</b>	A	B	A	B
<b>Port Size</b>	1/8in female NPT inlet(s), 1/8in female NPT outlet(s), vent hole exhaust	1/8in female NPT inlet(s), 1/8in female NPT outlet(s), vent hole exhaust	Side ports, 1/8in female NPT inlet(s), 1/8in female NPT outlet(s), 1/8in female NPT exhaust(s)	Side ports, 1/8in female NPT inlet(s), 1/8in female NPT outlet(s), 1/8in female NPT exhaust(s)
<b>Flow (Cv)</b>	0.42	0.42	0.42	0.42
<b>Fluid</b>	Air (to be filtered by 40 μ filter element)			
<b>Min. / Max. Pressure</b>	0 to 125 psi (0 to 8.62 bar)			
<b>Temperature</b>	-20 to +160 °F (-51 to +71 °C)			
<b>Lubrication</b>	Not Required			
<b>Body</b>	Aluminum/ Anodize, Brass/ Electroless Nickel, Acetal, Stainless Steel, Nylon, Brass, Buna-N			
<b>Protection</b>	IP65			

## Dimensions

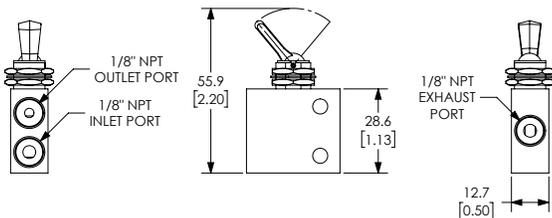
Note: For panel mounting  
 · Maximum thickness 0.25"  
 · Diameter Ø 0.484 thru



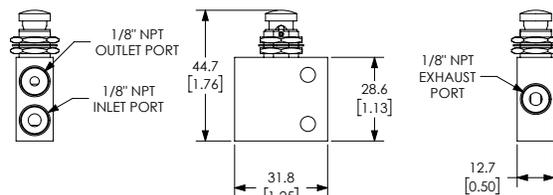
Part No. **GVS-3C1F-TD**



Part No. **GVS-3C1F-PB**



Part No. **GVS-3CS1F-TD**



Part No. **GVS-3CS1F-PB**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Manual Valves

## Aluminum and Stainless Single Stem Style



Part No. [GVS-331F-TD](#)



Part No. [GVS-331F-TM](#)



Part No. [GVS-231F-TD](#)



Part No. [GVS-231F-TM](#)

NITRA GVS manual valves offer the unique feature of two spool valves in one body with a common inlet port. Available as either (2) 3-way NC or (2) 2-way NC with a momentary or detented toggle operator. All valves can be through-panel mounted for a very clean looking operator interface.

- Single stem design
- High flow
- Made in USA



Diagram "A"

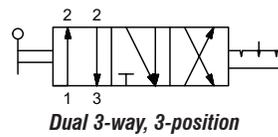


Diagram "B"

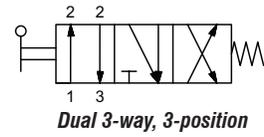


Diagram "C"

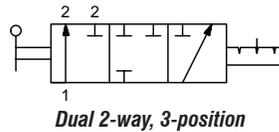
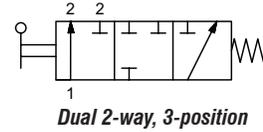


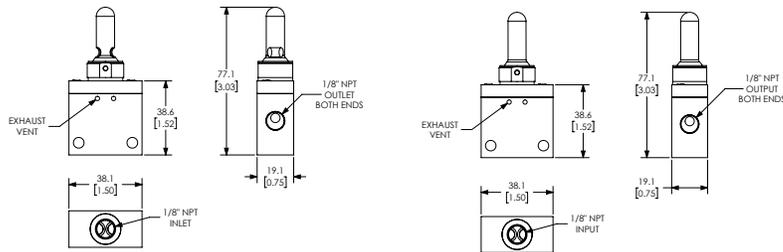
Diagram "D"



Specifications				
Models	<a href="#">GVS-331F-TD</a>	<a href="#">GVS-331F-TM</a>	<a href="#">GVS-231F-TD</a>	<a href="#">GVS-231F-TM</a>
Price	\$71.00	\$71.00	\$71.00	\$75.00
Weight (lbs)	0.3	0.3	0.3	0.3
Valve Type	Dual 3-way, 3-position, center exhaust		Dual 2-way, 3-position, center closed	
Acting	Toggle style actuator, detented, through panel mount	Toggle style, spring return, through panel mount	Toggle style actuator, detented, through panel mount	Toggle style, spring return, through panel mount
Diagram	A	B	C	D
Port Size	1/8in female NPT inlet(s), 1/8in female NPT outlet(s), 1 vent hole exhaust(s)	1/8in female NPT inlet(s), 1/8in female NPT outlet(s), 1 vent hole exhaust(s)	1/8in female NPT inlet(s), 1/8in female NPT outlet(s)	1/8in female NPT inlet(s), 1/8in female NPT outlet(s)
Flow (Cv)	0.54	0.54	0.54	0.54
Fluid	Air (to be filtered by 40 µ filter element)			
Min. / Max. Pressure	0 to 125 psi (0 to 8.62 bar)			
Temperature	-20 to +160 °F (-51 to +71 °C)			
Lubrication	Not Required			
Body	Aluminum/ Anodize, Brass/ Electroless Nickel, Acetal, Stainless Steel, Nylon, Brass, Buna-N			
Protection	IP65			

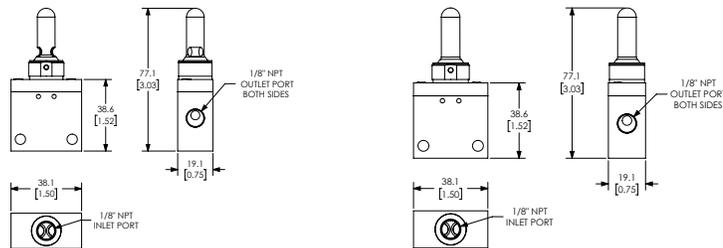
## Dimensions mm [inches]

Note: For panel mounting  
 • Maximum thickness 0.25"  
 • Diameter Ø 0.781 thru



Part No. [GVS-331F-TD](#)

Part No. [GVS-331F-TM](#)



Part No. [GVS-231F-TD](#)

Part No. [GVS-231F-TM](#)

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Pneumatic Manual Valves

## Heavy Duty Toggle and Pushbutton Valves



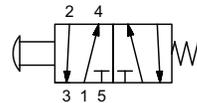
Part No. **GVS-520F-PB**

NITRA GVS manual valves offer a simple, convenient method for directional control and other pneumatic valve applications. All valves can be thru-panel mounted for a very clean looking operator interface.

- Single stem design
- High flow
- Made in USA

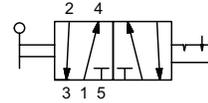


Diagram "A"



5-port, 2-position

Diagram "B"



5-port, 2-position



Part No. **GVS-520F-TD**



Part No. **GVS-521F-PB**



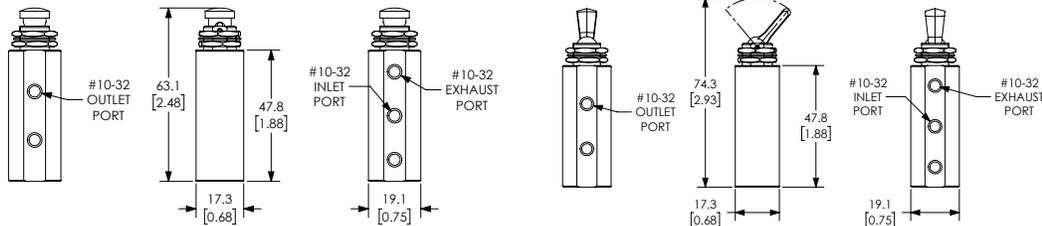
Part No. **GVS-521F-TD**

Specifications				
Models	GVS-520F-PB	GVS-520F-TD	GVS-521F-PB	GVS-521F-TD
Price	\$34.00	\$36.00	\$39.50	\$41.00
Weight (lbs)	0.1	0.1	0.1	0.15
Valve Type	5-port (4-way) 2-position			
Acting	Pushbutton, spring return, through panel mount	Toggle style actuator, detented, through panel mount	Pushbutton, spring return, through panel mount	Toggle style actuator, detented, through panel mount
Diagram	A	B	A	B
Port Size	#10-32 female threaded inlet(s), #10-32 female threaded outlet(s), #10-32 female threaded exhaust(s)	#10-32 female threaded inlet(s), #10-32 female threaded outlet(s), #10-32 female threaded exhaust(s)	1/8in FNPT inlet(s), 1/8in FNPT outlet(s), 1/8in FNPT exhaust(s)	1/8in FNPT inlet(s), 1/8in FNPT outlet(s), 1/8in FNPT exhaust(s)
Flow (Cv)	0.23	0.23	0.37	0.37
Fluid	Air (to be filtered by 40µ filter element)			
Min. / Max. Pressure	0 to 125 psi (0 to 8.62 bar)			
Temperature	-20 to +160 °F (-51 to +71 °C)			
Lubrication	Not Required			
Body	Aluminum/ Anodize, Brass/ Electroless Nickel, Acetal, Stainless Steel, Nylon, Brass, Buna-N			
Protection	IP65			

## Dimensions

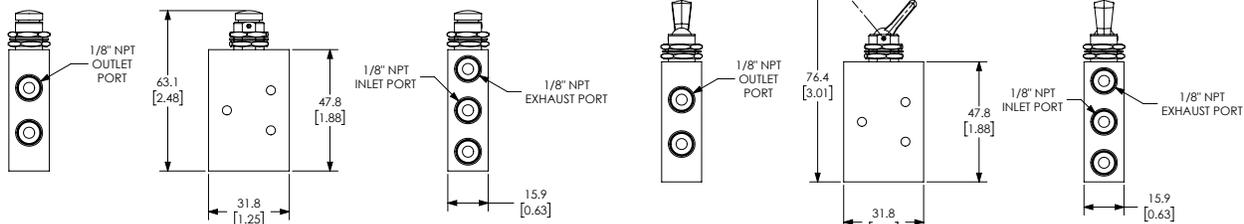
mm [inches]

Note: For panel mounting  
 • Maximum thickness 0.25"  
 • Diameter Ø 0.484 thru



Part No. **GVS-520F-PB**

Part No. **GVS-520F-TD**



Part No. **GVS-521F-PB**

Part No. **GVS-521F-TD**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

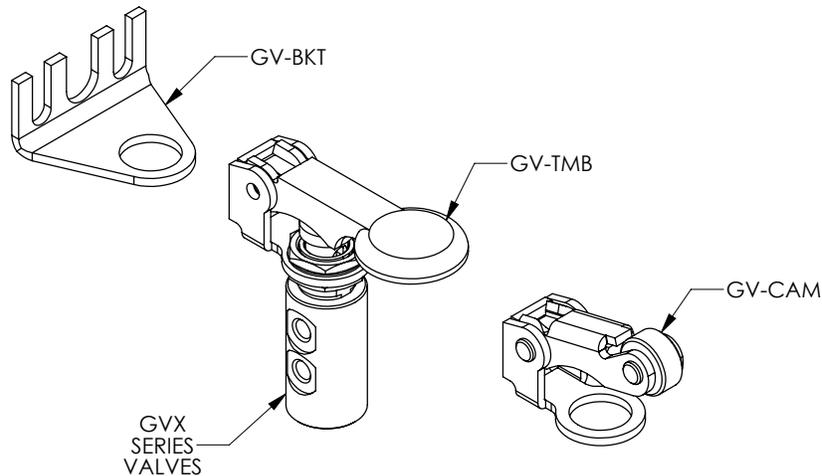


# GVP and GVS Series Pneumatic Valve Accessories



Nitra Pneumatic GVP and GVS Series Pneumatic Valve Accessories				
Item	Part No.	Description	Price	Weight (lbs)
	<b><u>GV-BKT</u></b>	NITRA 90 degree mounting bracket, plated steel. For use with all GVP and GVS valves.	\$3.50	0.5
	<b><u>GV-CAM</u></b>	NITRA roller cam actuator, plated steel, for use with all GVP and GVS valves. The roller is manufactured from durable acetal plastic. All cams feature a unique acetal pad which minimizes side load and virtually eliminates wear.	\$16.00	0.5
	<b><u>GV-TMB</u></b>	NITRA thumb actuator, plated steel, for use with all GVP and GVS valves.	\$15.00	0.5

**Assembly Example**



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.



# Exhaust Silencers

NITRA™ exhaust silencers are available in three styles and nine popular NPT and BSPT sizes. Add these to the exhaust ports of NITRA directional control solenoid valves to reduce noise.

**Features**

- Inch and metric sizes available
- Bronze cone and flat styles
- Plastic cylindrical
- Maximum pressure = 150 psi (10 bar)



SBC Series

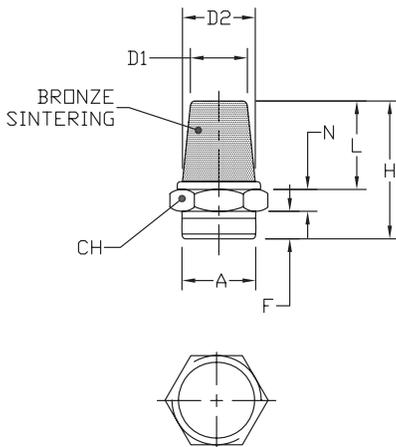


SBF Series



SPL Series

**SBC Silencers**

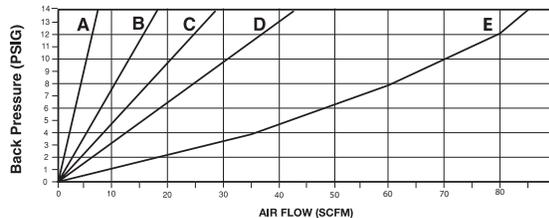


NITRA™ Bronze Cone Silencers											
Inch Sizes - dimensions in inches [mm]											
Part No.	Price	A	CH	D1	D2	F	H	L	N	Package Weight (lb)	Qty. per pack
<b>SBC-18N</b>	\$3.50	MNPT 1/8	0.47 [12.0]	0.32 [8.0]	0.28 [7.0]	0.24 [6.0]	0.94 [24.0]	0.55 [14.0]	0.16 [4.0]	0.01	2
<b>SBC-14N</b>	\$4.75	MNPT 1/4	0.63 [16.0]	0.47 [12.0]	0.40 [10.0]	0.32 [8.0]	1.18 [30.0]	0.71 [18.0]	0.16 [4.0]	0.01	
<b>SBC-38N</b>	\$6.75	MNPT 3/8	0.71 [18.0]	0.55 [14.0]	0.39 [11.0]	0.35 [9.0]	1.38 [35.0]	0.83 [21.0]	0.197 [5.0]	0.05	
<b>SBC-12N</b>	\$12.50	MNPT 1/2	0.94 [24.0]	0.75 [19.0]	0.59 [15.0]	0.40 [10.0]	1.73 [44.0]	1.10 [28.0]	0.24 [6.0]	0.15	
Metric Sizes - dimensions in inches [mm]											
<b>SBC-M5</b>	\$2.50	M5	0.31 [8.0]	0.20 [5.0]	0.16 [4.0]	0.20 [5.0]	0.79 [20.0]	0.47 [12.0]	0.12 [3.0]	0.01	2
<b>SBC-18R</b>	\$3.50	R 1/8	0.47 [12.0]	0.32 [8.0]	0.28 [7.0]	0.24 [6.0]	0.94 [24.0]	0.55 [14.0]	0.16 [4.0]	0.01	
<b>SBC-14R</b>	\$4.00	R 1/4	0.63 [16.0]	0.47 [12.0]	0.40 [10.0]	0.32 [8.0]	1.18 [30.0]	0.71 [18.0]	0.16 [4.0]	0.01	
<b>SBC-38R</b>	\$6.00	R 3/8	0.71 [18.0]	0.55 [14.0]	0.39 [11.0]	0.35 [9.0]	1.38 [35.0]	0.83 [21.0]	0.197 [5.0]	0.05	
<b>SBC-12R</b>	\$10.50	R 1/2	0.94 [24.0]	0.75 [19.0]	0.59 [15.0]	0.40 [10.0]	1.73 [44.0]	1.10 [28.0]	0.24 [6.0]	0.15	

## Flow Characteristics

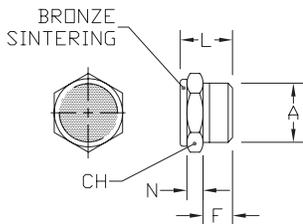
**Bronze Cone Silencers**

- A: SBC-M5
- B: SBC-18N; SBC-18R
- C: SBC-14N; SBC-14R
- D: SBC-38N; SBC-38R
- E: SBC-12N; SBC-12R



Noise Elimination = > 20db  
Filtered Element = 40 micron

**SBF Silencers**



NITRA™ Bronze Flat Silencers									
Inch Sizes - dimensions in inches [mm]									
Part No.	Price	A	CH	F	L	N	Package Weight (lb)	Qty. per pack	
<b>SBF-18N</b>	\$3.50	MNPT 1/8	0.47 [12.0]	0.24 [6.0]	0.47 [12.0]	0.16 [4.0]	0.01	2	
<b>SBF-14N</b>	\$4.25	MNPT 1/4	0.67 [17.0]	0.32 [8.0]	0.59 [15.0]	0.16 [4.0]	0.01		
<b>SBF-38N</b>	\$7.50	MNPT 3/8	0.75 [19.0]	0.35 [9.0]	0.67 [17.0]	0.20 [5.0]	0.05		
<b>SBF-12N</b>	\$11.00	MNPT 1/2	0.94 [24.0]	0.40 [10.0]	0.71 [18.0]	0.24 [6.0]	0.15		
Metric Sizes - dimensions in inches [mm]									
<b>SBF-M5</b>	\$2.50	M5	0.31 [8.0]	0.20 [5.0]	0.35 [9.0]	0.12 [3.0]	0.01	2	
<b>SBF-18R</b>	\$3.50	R 1/8	0.47 [12.0]	0.24 [6.0]	0.47 [12.0]	0.16 [4.0]	0.01		
<b>SBF-14R</b>	\$4.00	R 1/4	0.67 [17.0]	0.32 [8.0]	0.59 [15.0]	0.16 [4.0]	0.01		
<b>SBF-38R</b>	\$6.25	R 3/8	0.75 [19.0]	0.35 [9.0]	0.67 [17.0]	0.20 [5.0]	0.05		
<b>SBF-12R</b>	\$11.00	R 1/2	0.94 [24.0]	0.40 [10.0]	0.71 [18.0]	0.24 [6.0]	0.15		

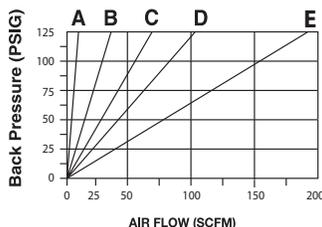


# Exhaust Silencers

## Flow Characteristics

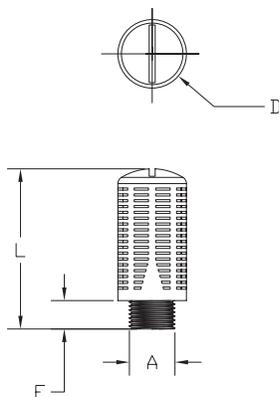
### Bronze Flat Silencers

- A: SBF-M5
- B: SBF-18N; SBF-18R
- C: SBF-14N; SBF-14R
- D: SBF-28N; SBF-38R
- E: SBF-12N; SBF-12R



Noise Elimination = > 30db  
 Filtered Element = 40 micron

### SPL Silencers



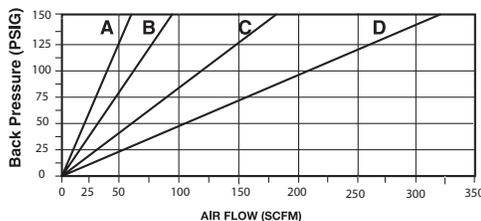
Note: SPL series plastic exhaust silencers have a maximum pressure of 80 PSI (5.5 bar).

NITRA™ Plastic Exhaust Silencers							
Inch Sizes - dimensions in inches [mm]							
Part No.	Price	A	D	L	F	Package Weight (lbs)	Qty. per pack
<b>SPL-18N</b>	\$2.75	MNPT 1/8	0.55 [13.8]	1.28 [32.4]	0.33 [8.3]	0.02	2
<b>SPL-14N</b>	\$3.00	MNPT 1/4	0.68 [17.3]	1.68 [42.5]	0.39 [9.9]	0.03	
<b>SPL-38N</b>	\$3.50	MNPT 3/8	0.87 [22.0]	2.10 [53.4]	0.40 [10.0]	0.06	
<b>SPL-12N</b>	\$3.50	MNPT 1/2	1.00 [25.4]	2.66 [67.6]	0.44 [11.1]	0.08	
Metric Sizes - dimensions in inches [mm]							
<b>SPL-18R</b>	\$2.75	R 1/8	0.60 [15.2]	1.33 [33.7]	0.24 [6.1]	0.02	2
<b>SPL-14R</b>	\$3.00	R 1/4	0.60 [18.8]	1.60 [40.6]	0.31 [7.7]	0.03	
<b>SPL-38R</b>	\$3.50	R 3/8	0.94 [24.0]	2.20 [55.9]	0.39 [9.9]	0.06	
<b>SPL-12R</b>	\$3.50	R 1/2	0.94 [24.0]	2.20 [55.9]	0.39 [9.9]	0.08	

## Flow Characteristics

### Plastic Silencers

- A: SPL-18N; SPL-18R
- B: SPL-14N; SPL-14R
- C: SPL-38N; SPL-38R
- D: SPL-12N; SPL-12R



Noise Elimination = > 30db  
 Filtered Element = 40 micron