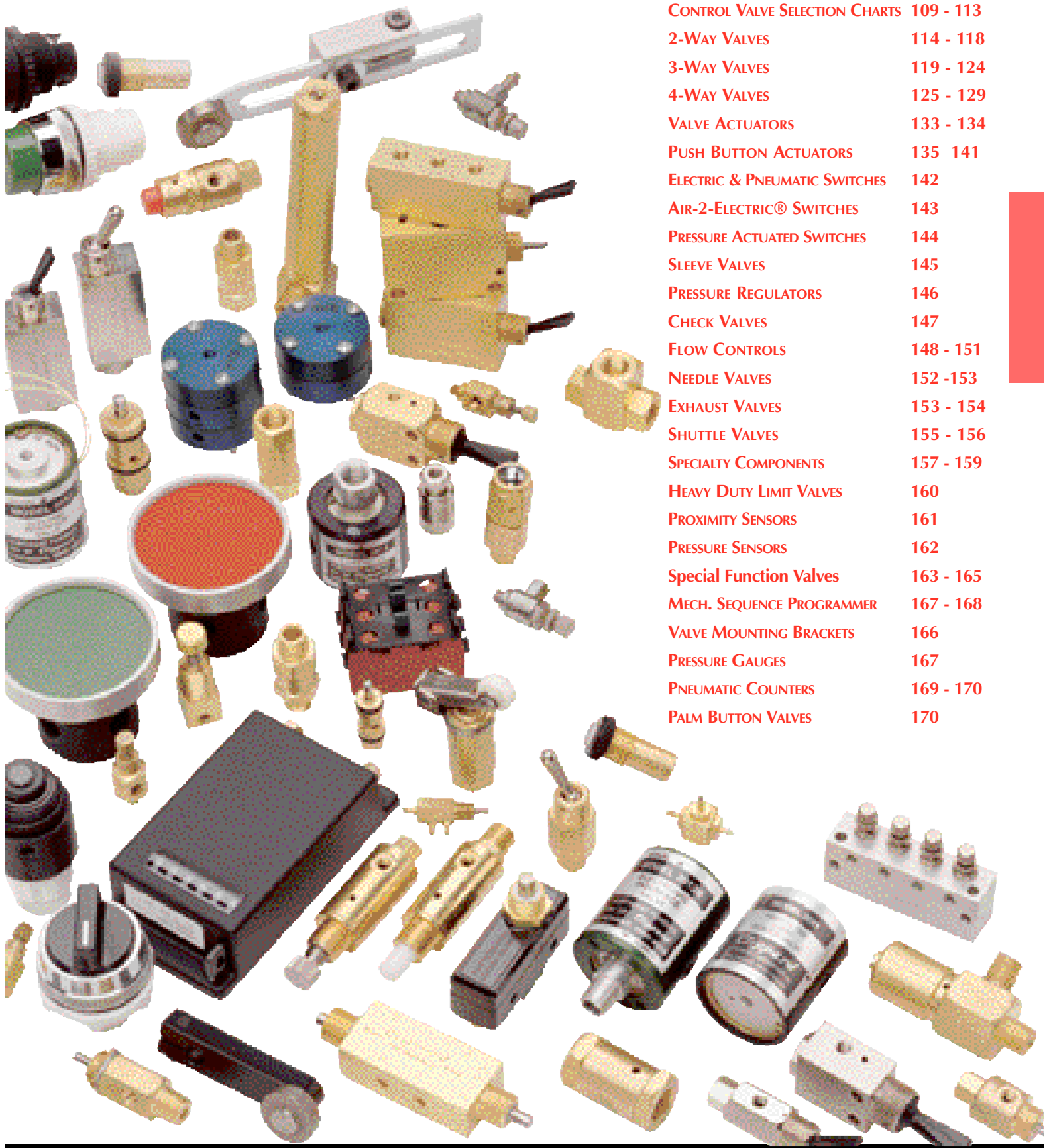


Control Valves



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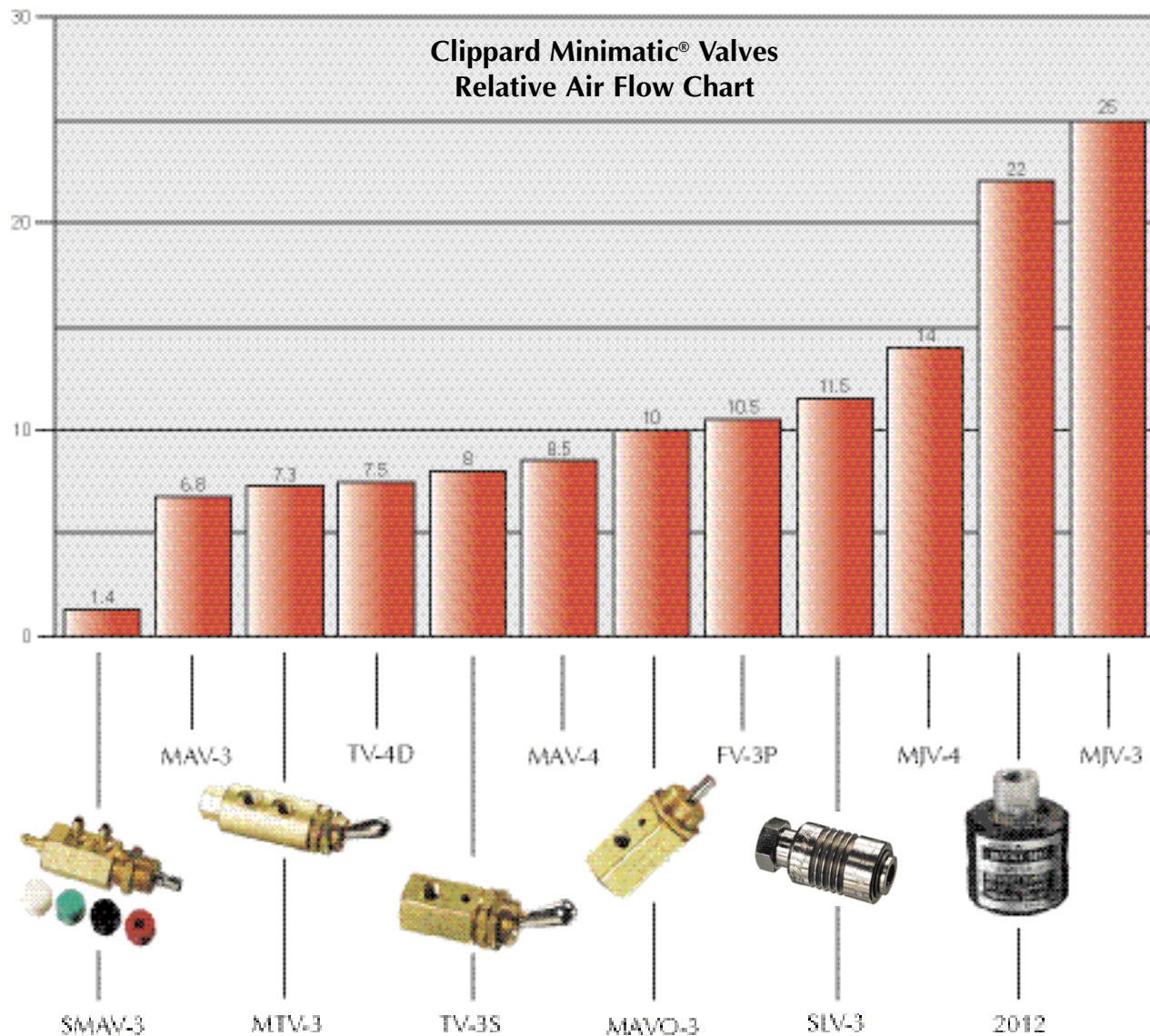
CONTROL VALVES



Every air system is unique . . . and Clippard has the air valve you need. Clippard control valves are available in poppet or spool design; 2-, 3-, or 4-way functions, in sizes from #3-56 and #10-32 (M5) through 1/8" NPT (G1/8) ports; and for pressures to 300 psig/21 bar. They are available with solenoid, air pilot, manual and mechanical actuators. Mounting styles include inline, panel mount, manifold mount or clearance holes for mounting screws.

When designing a pneumatic system, choose the proper size for each component. A valve of insufficient capacity may cause an entire system to operate slower than expected. Conversely, utilizing a valve which possesses greater capacity than is actually required results in needless size and often leads to excessive speed, impact, wear, and air consumption.

The chart below shows the variety of valve flows available from Clippard. It can be used as a guide to determine the proper valve for an actual application.



2-Way Valves

	Order No.	Style	Flow (@ 100 psig/6 bar)	Ports			Normally-Open	Normally-Closed	Momentary/Detented	Brass Toggle	Plastic Toggle	Page No.
				Inlet	Outlet	Exhaust						
Toggle Valves	MTV-2	Poppet	7.3 scfm	#10-32	#10-32	-		▲	D	▲		114
	MTV-2-M5	Poppet	175 l/min	M5	M5	-		▲	D	▲		114
	MTV-2P	Poppet	7.3 scfm	1/8" NPT	#10-32	-		▲	D	▲		114
	TV-2S	Spool	8 scfm	#10-32	#10-32	-		▲	D	▲		114
	TV-2S-M5	Spool	190 l/min	M5	M5	-		▲	D	▲		114
	TV-2SF	Spool	8 scfm	#10-32	#10-32	-		▲	D		▲	114
	TV-2SF-M5	Spool	190 l/min	M5	M5	-		▲	D		▲	114
	TV-2SP	Spool	8 scfm	1/8" NPT	#10-32	-		▲	D	▲		114
	TV-2SFP	Spool	8 scfm	1/8" NPT	#10-32	-		▲	D		▲	114
	TV-2M	Poppet	8 scfm	#10-32	#10-32	-		▲	M	▲		114
	TV-2M-M5	Poppet	190 l/min	M5	M5	-		▲	M	▲		114
	TV-2MF	Poppet	8 scfm	#10-32	#10-32	-		▲	M		▲	114
	TV-2MF-M5	Poppet	190 l/min	M5	M5	-		▲	M		▲	114
	TV-2MP	Poppet	6.8 scfm	1/8" NPT	#10-32	-		▲	M	▲		115
	TV-2MFP	Poppet	6.8 scfm	1/8" NPT	#10-32	-		▲	M		▲	115
	TVO-2M	Poppet	8 scfm	#10-32	#10-32	-	▲		M	▲		115
	TVO-2M-M5	Poppet	190 l/min	M5	M5	-	▲		M	▲		115
	TVO-2MF	Poppet	8 scfm	#10-32	#10-32	-	▲		M		▲	115
	TVO-2MF-M5	Poppet	190 l/min	M5	M5	-	▲		M		▲	115
	TVO-2MP	Poppet	6.8 scfm	1/8" NPT	#10-32	-	▲		M	▲		115
	TVO-2MFP	Poppet	6.8 scfm	1/8" NPT	#10-32	-	▲		M		▲	115
Stem Valves	MAV-2	Poppet	6.8 scfm	#10-32	#10-32	-		▲				116
	MAV-2-M5	Poppet	170 l/min	M5	M5	-		▲				116
	MAV-2P	Poppet	6.8 scfm	1/8" NPT	#10-32	-		▲				116
	MAV-2C	Poppet	6 scfm	-	-	-		▲				116
	MJV-2C	Poppet	22 scfm	-	-	-		▲				117
	MAV-2R	Poppet	6.8 scfm	#10-32	#10-32	-		▲				116
	MAV-2R-M5	Poppet	170 l/min	M5	M5	-		▲				116
	MAVO-2	Spool	10 scfm	#10-32	#10-32	-	▲					116
	MAVO-2-M5	Spool	245 l/min	M5	M5	-	▲					116
	MAVO-2P	Spool	10 scfm	1/8" NPT	#10-32	-	▲					117
	MAVO-2C	Spool	10 scfm	-	-	-	▲					116
	MJV-2	Poppet	25 scfm	1/8" NPT	1/8" NPT	-		▲				117
	MJV-2-MG	Poppet	600 l/min	G1/8	G1/8	-		▲				117
	MJVO-2	Spool	12 scfm	1/8" NPT	1/8" NPT	-	▲					117
	MJVO-2-MG	Spool	600 l/min	G1/8	G1/8	-	▲					117
	MJVO-2C	Spool	15 scfm	-	-	-	▲					117
Air-Piloted	PAV-2	Poppet	6.8 scfm	1/8" NPT	#10-32	-		▲				118
	PAV-2P	Poppet	6.8 scfm	1/8" NPT	1/8" NPT	-		▲				118
	PAVO-2	Poppet	11.6 scfm	#10-32	#10-32	-	▲					118
	PAVO-2P	Poppet	11.6 scfm	#10-32	1/8" NPT	-	▲					118



SELECTION CHARTS

3-Way Valves

Order No.	Style	Air (@ 100 psig/6 bar	Ports				Normally-Open	Normally-Closed	Momentary/Detented	Brass Toggle	Plastic Toggle	Page No.
			Inlet	Outlet	Exhaust							
Toggle Valves	MTV-3	Poppet	7 scfm	#10-32	#10-32	#10-32		▲	D	▲		119
	MTV-3-M5	Poppet	175 l/min	M5	M5	M5		▲	D	▲		119
	MTV-3P	Poppet	7 scfm	1/8" NPT	#10-32	#10-32		▲	D	▲		119
	MJTV-3	Poppet	25 scfm	1/8" NPT	1/8" NPT	1/8" NPT		▲	D	▲		120
	MJTV-3-MG	Poppet	600 l/min	G1/8	G1/8	G1/8		▲	D	▲		120
	FTV-3	Spool	10 scfm	#10-32	#10-32	#10-32		▲	D	▲		121
	FTV-3-M5	Spool	240 l/min	M5	M5	M5		▲	D	▲		121
	FTV-3F	Spool	10 scfm	#10-32	#10-32	#10-32		▲	D		▲	121
	FTV-3F-M5	Spool	130 l/min	M5	M5	M5		▲	D		▲	121
	FTV-3P	Spool	10.5 scfm	1/8" NPT	1/8" NPT	1/8" NPT		▲	D	▲		121
	FTV-3P-MG	Spool	250 l/min	G1/8	G1/8	G1/8		▲	D	▲		121
	FTV-3FP	Spool	10.5 scfm	1/8" NPT	1/8" NPT	1/8" NPT		▲	D		▲	121
	FTV-3FP-MG	Spool	250 l/min	G1/8	G1/8	G1/8		▲	D		▲	121
	FBV-3D	Spool	5.0 scfm	#10-32	#10-32	hole in body		▲	D		▲	127
	FBV-3D-F	Spool	7.5 scfm	#10-32	#10-32	hole in body		▲	D		▲	127
	FBV-3M	Spool	5.0 scfm	#10-32	#10-32	hole in body		▲	M		▲	127
	FBV-3M-F	Spool	7.5 scfm	#10-32	#10-32	hole in body		▲	M		▲	127
	FBV-3DM	Spool	5.0 scfm	#10-32	#10-32	hole in body		▲	DM		▲	127
	FBV-3DM-F	Spool	7.5 scfm	#10-32	#10-32	hole in body		▲	DM		▲	127
	FBV-3DP	Spool	5.0 scfm	1/8" NPT	1/8" NPT	hole in body		▲	D		▲	127
	FBV-3DP-F	Spool	7.5 scfm	1/8" NPT	1/8" NPT	hole in body		▲	D		▲	127
	FBV-3MP	Spool	5.0 scfm	1/8" NPT	1/8" NPT	hole in body		▲	M		▲	127
	FBV-3MP-F	Spool	7.5 scfm	1/8" NPT	1/8" NPT	hole in body		▲	M		▲	127
	FBV-3DMP	Spool	5.0 scfm	1/8" NPT	1/8" NPT	hole in body		▲	DM		▲	127
	FBV-3DMP-F	Spool	7.5 scfm	1/8" NPT	1/8" NPT	hole in body		▲	DM		▲	127
	TV-3S	Spool	8 scfm	#10-32	#10-32	hole in body		▲	D	▲		119
	TV-3S-M5	Spool	190 l/min	M5	M5	hole in body		▲	D	▲		119
	TV-3SF	Spool	8 scfm	#10-32	#10-32	hole in body		▲	D		▲	119
	TV-3SF-M5	Spool	190 l/min	M5	M5	hole in body		▲	D		▲	119
	TV-3SP	Spool	8 scfm	1/8" NPT	#10-32	hole in body		▲	D	▲		119
	TV-3SFP	Spool	8 scfm	1/8" NPT	#10-32	hole in body		▲	D		▲	119
	TV-3M	Spool	6.8 scfm	#10-32	#10-32	hole in body		▲	M	▲		119
	TV-3M-M5	Spool	170 l/min	M5	M5	hole in body		▲	M	▲		119
	TV-3MF	Spool	6.8 scfm	#10-32	#10-32	hole in body		▲	M		▲	119
	TV-3MF-M5	Spool	170 l/min	M5	M5	hole in body		▲	M		▲	119
	TV-3MP	Spool	6.8 scfm	1/8" NPT	#10-32	hole in body		▲	M	▲		120
	TV-3MFP	Spool	6.8 scfm	1/8" NPT	#10-32	hole in body		▲	M		▲	120

3-Way Valves Cont'd.

	Order No.	Style	Flow @ 100 psig/6 bar	Ports			Normally-Open	Normally-Closed	Momentary/Detented	Brass Toggle	Plastic Toggle	Page No.
				Inlet	Outlet	Exhaust						
Toggle Valves	TVO-3M	Spool	6.8 scfm	#10-32	#10-32	hole in body	▲		M	▲		120
	TVO-3M-M5	Spool	170 l/min	M5	M5	hole in body	▲		M	▲		120
	TVO-3MF	Spool	6.8 scfm	#10-32	#10-32	hole in body	▲		M		▲	120
	TVO-3MF-M5	Spool	170 l/min	M5	M5	hole in body	▲		M		▲	120
	TVO-3MP	Spool	6.8 scfm	1/8" NPT	#10-32	hole in body	▲		M	▲		120
	TVO-3MFP	Spool	6.8 scfm	1/8" NPT	#10-32	hole in body	▲		M		▲	120
	SMTV-3	Spool	1.4 scfm	#3-56*	#3-56*	hole in body	▲	▲	D	▲		121
	FV-3	Spool	10 scfm	#10-32	#10-32	through stem	▲	▲				123
	FV-3-M5	Spool	240 l/min	M5	M5	through stem	▲	▲				123
	FV-3-MG	Spool	240 l/min	G1/8	G1/8	through stem	▲	▲				123
	FV-3D	Spool	10 scfm	#10-32	#10-32	through stem	▲	▲				123
	FV-3D-M5	Spool	240 l/min	M5	M5	through stem	▲	▲				123
	FV-3DP	Spool	10.5 scfm	1/8" NPT	1/8" NPT	through stem	▲	▲				123
	FV-3D-MG	Spool	240 l/min	G1/8	G1/8	through stem	▲	▲				123
	FV-3P	Spool	10.5 scfm	1/8" NPT	1/8" NPT	through stem	▲	▲				123
Stem Valves	MAV-3	Poppet	6.8 scfm	#10-32	#10-32	through stem		▲				122
	MAV-3-M5	Poppet	170 l/min	M5	M5	through stem		▲				122
	MAV-3P	Poppet	6.8 scfm	1/8" NPT	#10-32	through stem		▲				122
	MAV-3C	Poppet	6 scfm	-	-	through stem		▲				122
	MAV-3R	Poppet	6.8 scfm	#10-32	#10-32	through stem		▲				122
	MAV-3R-M5	Poppet	170 l/min	M5	M5	through stem		▲				122
	MAVO-3	Spool	10 scfm	#10-32	#10-32	holes in body	▲					122
	MAVO-3-M5	Spool	245 l/min	M5	M5	holes in body	▲					122
	MAVO-3P	Spool	10 scfm	#10-32	#10-32	holes in body	▲					122
	MAVO-3C	Spool	10 scfm	-	-	holes in body	▲					122
	MJV-3	Poppet	25 scfm	1/8" NPT	1/8" NPT	through stem		▲				123
	MJV-3-MG	Poppet	600 l/min	G1/8	G1/8	through stem		▲				123
	MJV-3C	Poppet	22 scfm	-	-	through stem		▲				123
	MJVO-3	Spool	12 scfm	1/8" NPT	1/8" NPT	holes in body	▲					123
	MJVO-3-MG	Spool	600 l/min	G1/8	G1/8	holes in body	▲					123
	MJVO-3C	Spool	15 scfm	-	-	holes in body	▲					123
	SMAV-3	Spool	1.4 scfm	#3-56	#3-56	#3-56	▲	▲				121
Air-Piloted	PAV-3	Poppet	6.8 scfm	#10-32	#10-32	holes in body		▲				124
	PAV-3P	Poppet	6.8 scfm	#10-32	1/8" NPT	holes in body		▲				124
	PAVO-3	Poppet	11.6 scfm	#10-32	#10-32	holes in body	▲					124
	PAVO-3P	Poppet	11.6 scfm	#10-32	1/8" NPT	holes in body	▲					124



SELECTION CHARTS

4-Way Valves

	Order No.	Style	Flow @ 100 psig/6 bar	Ports			Normally-Open	Normally-Closed	Momentary/Detented	Brass Toggle	Plastic Toggle	Page No.
				Inlet	Outlet	Exhaust						
Toggle Valves	TV-4D	Spool	7.5 scfm	#10-32	#10-32	holes in body		▲	D		▲	126
	TV-4D-M5	Spool	180 l/min	M5	M5	holes in body		▲	D		▲	126
	TV-4M	Spool	7.5 scfm	#10-32	#10-32	holes in body		▲	D		▲	126
	TV-4M-M5	Spool	180 l/min	M5	M5	holes in body		▲	D		▲	126
	TV-4DM	Spool	7.5 scfm	#10-32	#10-32	holes in body		▲	D		▲	126
	TV-4DM-M5	Spool	180 l/min	M5	M5	holes in body		▲	D		▲	126
	TV-4DP	Spool	7.5 scfm	1/8" NPT	1/8" NPT	holes in body		▲	D		▲	126
	TV-4MP	Spool	7.5 scfm	1/8" NPT	1/8" NPT	holes in body		▲	D		▲	126
	TV-4DMP	Spool	7.5 scfm	1/8" NPT	1/8" NPT	holes in body		▲	D		▲	126
	MTV-4	Spool	10 scfm	#10-32	#10-32	holes in body	▲	▲	D	▲		125
	MTV-4-M5	Spool	240 l/min	M5	M5	holes in body	▲	▲	D	▲		125
	MTV-4F	Spool	10 scfm	#10-32	#10-32	holes in body	▲	▲	D		▲	125
	MTV-4F-M5	Spool	240 l/min	M5	M5	holes in body	▲	▲	D		▲	125
	MJTV-4	Spool	10.5 scfm	1/8" NPT	1/8" NPT	holes in body	▲	▲	D	▲		125
	MJTV-4-MG	Spool	250 l/min	G1/8	G1/8	holes in body	▲	▲	D	▲		125
	MJTV-4F	Spool	10.5 scfm	1/8" NPT	1/8" NPT	holes in body	▲	▲	D		▲	125
	MJTV-4F-MG	Spool	250 l/min	G1/8	G1/8	holes in body	▲	▲	D		▲	125
	MTV-5	Spool	10 scfm	#10-32	#10-32	#10-32	▲	▲	D	▲		125
	MTV-5-M5	Spool	240 l/min	M5	M5	M5	▲	▲	D	▲		125
	MTV-5F	Spool	10 scfm	#10-32	#10-32	#10-32	▲	▲	D		▲	125
	MTV-5F-M5	Spool	240 l/min	M5	M5	M5	▲	▲	D		▲	125
	MJTV-5	Spool	10.5 scfm	1/8" NPT	1/8" NPT	1/8" NPT	▲	▲	D	▲		125
	MJTV-5-MG	Spool	250 l/min	G1/8	G1/8	G1/8	▲	▲	D	▲		125
	MJTV-5F	Spool	10.5 scfm	1/8" NPT	1/8" NPT	1/8" NPT	▲	▲	D		▲	125
	MJTV-5F-MG	Spool	250 l/min	G1/8	G1/8	G1/8	▲	▲	D		▲	125
Stem Valves	MAV-4	Spool	8.5 scfm	#10-32	#10-32	holes in body	▲	▲				128
	MAV-4-M5	Spool	240 l/min	M5	M5	holes in body	▲	▲				128
	MAV-4D	Spool	8.5 scfm	#10-32	#10-32	holes in body	▲	▲				128
	MAV-4D-M5	Spool	240 l/min	M5	M5	holes in body	▲	▲				128
	MJV-4	Spool	14 scfm	1/8" NPT	1/8" NPT	holes in body	▲	▲				128
	MJV-4-MG	Spool	396 l/min	G1/8	G1/8	holes in body	▲	▲				128
	MJV-4D	Spool	14 scfm	1/8" NPT	1/8" NPT	holes in body	▲	▲				128
	MJV-4D-MG	Spool	396 l/min	G1/8	G1/8	holes in body	▲	▲				128
Air-Piloted	FV-4	Spool	10 scfm	#10-32	#10-32	holes in body	▲	▲				128
	FV-4-M5	Spool	240 l/min	M5	M5	holes in body	▲	▲				128
	FV-4-MG	Spool	250 l/min	G1/8	G1/8	holes in body	▲	▲				128
	FV-4P	Spool	10.5 scfm	1/8" NPT	1/8" NPT	holes in body	▲	▲				128

4-Way Valves Cont'd.

	Order No.	Style	Flow @ 100 psig/6 bar	Ports			Normally-Open	Normally-Closed	Momentary/Detented	Brass Toggle	Plastic Toggle	Page No.
				Inlet	Outlet	Exhaust						
Air-Piloted Valves	FV-4P-MG	Spool	250 l/min	G1/8	G1/8	holes in body	▲	▲				128
	FV-4D	Spool	10 scfm	#10-32	#10-32	holes in body	▲	▲				128
	FV-4D-M5	Spool	240 l/min	M5	M5	holes in body	▲	▲				128
	FV-4DP	Spool	10.5 scfm	1/8" NPT	1/8" NPT	holes in body	▲	▲				128
	FV-4D-MG	Spool	250 l/min	G1/8	G1/8	holes in body	▲	▲				128
	FV-5	Spool	10 scfm	#10-32	#10-32	#10-32	▲	▲				129
	FV-5-M5	Spool	240 l/min	M5	M5	#10-32	▲	▲				129
	FV-5P	Spool	10.5 scfm	1/8" NPT	1/8" NPT	1/8" NPT	▲	▲				129
	FV-5P-MG	Spool	250 l/min	G1/8	G1/8	G1/8	▲	▲				129
	FV-5D	Spool	10 scfm	#10-32	#10-32	#10-32	▲	▲				129
	FV-5D-M5	Spool	240 l/min	M5	M5	M5	▲	▲				129
	FV-5DP	Spool	10.5 scfm	1/8" NPT	1/8" NPT	1/8" NPT	▲	▲				129
	FV-5DP-MG	Spool	250 l/min	G1/8	G1/8	G1/8	▲	▲				129

Options

-NP Nickel Plating

This option provides a bright finish on brass parts for decorative purposes that also protects the surface from corrosion and tarnishing. It has a nominal thickness of 0.0015", and does not affect the fit or function of the part.

-ENP Electroless Nickel Plating

This option provides a low luster finish on brass parts for decorative purposes that also protects the surface from corrosion and tarnishing. It has a nominal thickness of 0.0002", and does not affect the fit or function of the part.

-V Viton

This option replaces the standard Buna-N seals with Viton seals either for high temperature (up to + 400°F) applications or those that require Viton for chemical compatibility.

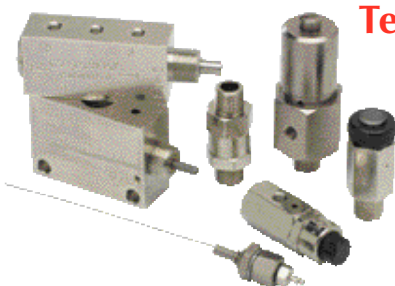
Clippard miniature valves and associated products have evolved into a widely used system of fluid power control devices, known for quality, value and performance.

Over the past five decades, a diverse range of industries in the U.S. and throughout the world have come to rely on Minimatics



to control machines, systems, and processes through an unlimited list of applications. Clippard quality in design, engineering, manufacturing, as well as an expansive product offering, make Minimatics the preferred choice for miniature and subminiature pneumatic applications.

Recognized as the original and most complete line of miniature fluid power components, Clippard's Minimatic line is available across the globe through a network of fully-trained, stocking distributors. Clippard and our distributors stand ready to provide expert application assistance, support, and technical answers, to help you achieve the highest level of performance in your system.



Temperature Range

All Control Valves in this section have a temperature range of 32° to 230°F/0° to 110°C



2-WAY TOGGLE VALVES



TWO-WAY TOGGLE VALVES

Two-way valves are the simplest pneumatic component—their function is

merely to turn an air supply on and off. They may best be compared to a water faucet; in the “on” position water

flows from inlet to outlet, and in the “off” position the water flow is stopped. Two-way toggle valves may have a poppet or spool, and may be either a 2 position or have a momentary actuation.

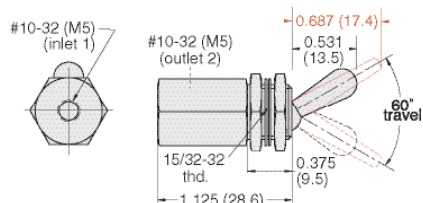
Medium: Air, Water or Oil

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Force For Full Stem Travel: 12 oz. nominal

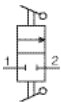
Mounting: 15/32-32 thread. Nuts and lockwashers furnished.

2 Position Spool Valves



Input Pressure: 150 psig/10 bar max.

Air Flow: 4.5 SCFM @ 50 psig; 8.0 SCFM @ 100 psig;
190 l/min @ 6 bar



Part No. Description

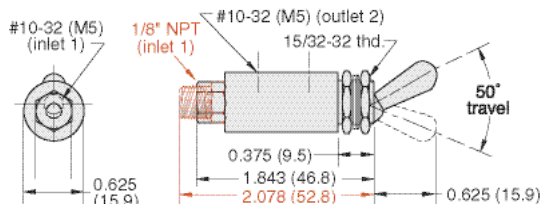
TV-2S2 Position Spool Valve, NP Brass Toggle, #10-32

TV-2S-M5 . . .2 Position Spool Valve, NP Brass Toggle, M5

TV-2SF2 Position Spool Valve, Plastic Toggle, #10-32

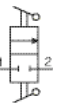
TV-2SF-M5 . . .2 Position Spool Valve, Plastic Toggle, M5

2 Position Poppet Valves



Input Pressure: 150 psig/10 bar max.

Air Flow: 4.0 SCFM @ 50 psig; 7.3 SCFM @ 100 psig;
175 l/min @ 6 bar



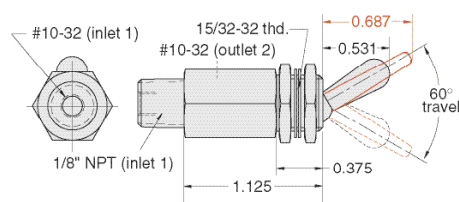
Part No. Description

MTV-22 Position Poppet Valve, #10-32

MTV-2-M5 . . .2 Position Poppet Valve, M5

MTV-2P2 Position Poppet Valve, 1/8" NPT

2 Position Spool Valves with 1/8" NPT Inlet



Input Pressure: 150 psig max.

Air Flow: 4.5 SCFM @ 50 psig; 8.0 SCFM @ 100 psig;

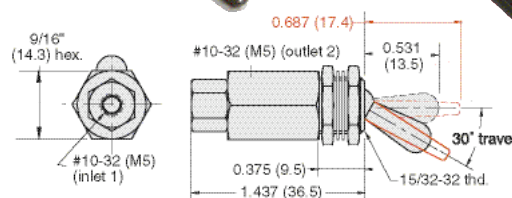
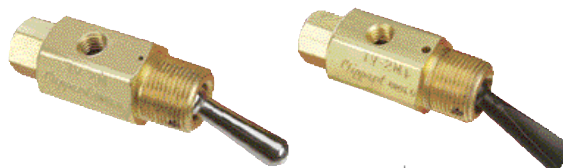


Part No. Description

TV-2SP2 Position Spool Valve, NP Brass Toggle, 1/8" NPT

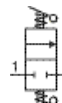
TV-2SFP2 Position Spool Valve, Plastic Toggle, 1/8" NPT

2 Position N.C. Poppet with Momentary Actuation



Input Pressure: 150 psig/10 bar max.

Air Flow: 4.5 SCFM @ 50 psig; 8.0 SCFM @ 100 psig;
175 l/min @ 6 bar



Part No. Description

TV-2M2 Position N.C. Poppet Valve, NP Brass Toggle, #10-32

TV-2M-M5 . . .2 Position N.C. Poppet Valve, NP Brass Toggle, M5

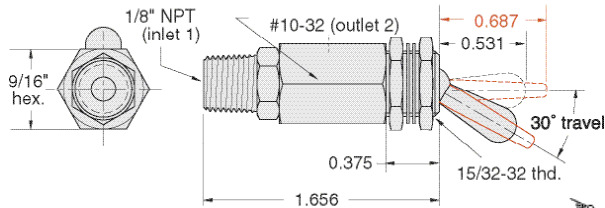
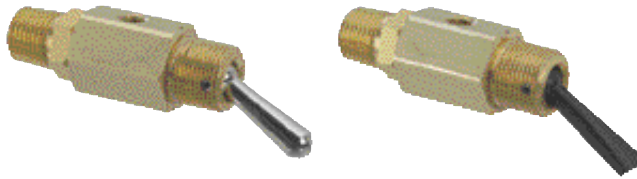
TV-2MF2 Position N.C. Poppet Valve, Plastic Toggle, #10-32

TV-2MF-M5 . . .2 Position N.C. Poppet Valve, Plastic Toggle, M5

2-WAY TOGGLE VALVES



2 Position N.C. Spool w/Momentary Actuation



Input Pressure: 150 psig max.

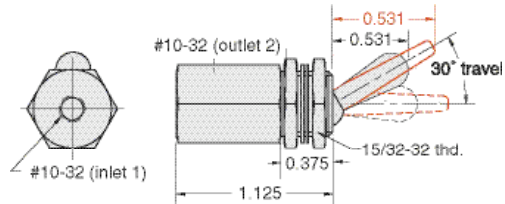
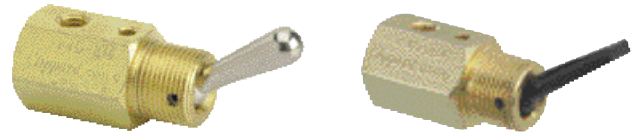
Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig



Part No. Description

TV-2MP2 Position Spool Valve, NP Brass Toggle, 1/8" NPT
TV-2MFP2 Position Spool Valve, Plastic Toggle, 1/8" NPT

2 Position N.O. Poppet w/Momentary Actuation



Input Pressure: 150 psig/10 bar max

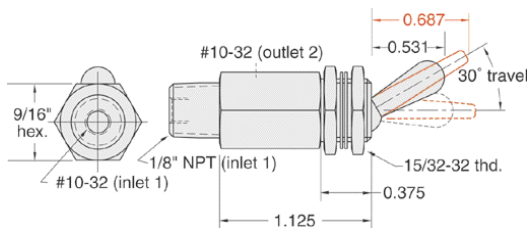
Air Flow: 4.5 SCFM @ 50 psig; 8.0 SCFM @ 100 psig;
 190 l/min @ 6 bar



Part No. Description

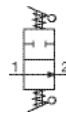
TVO-2M2 Position N.O. Poppet Valve, NP Brass Toggle, #10-32
TVO-2M-M5 .2 Position N.O. Poppet Valve, NP Brass Toggle, M5
TVO-2MF2 Position N.O. Poppet Valve, Plastic Toggle, #10-32
TVO-2MF-M5 2 Position N.O. Poppet Valve, Plastic Toggle, M5

2 Position N.O. Poppet with Momentary Actuation



Input Pressure: 150 psig max.

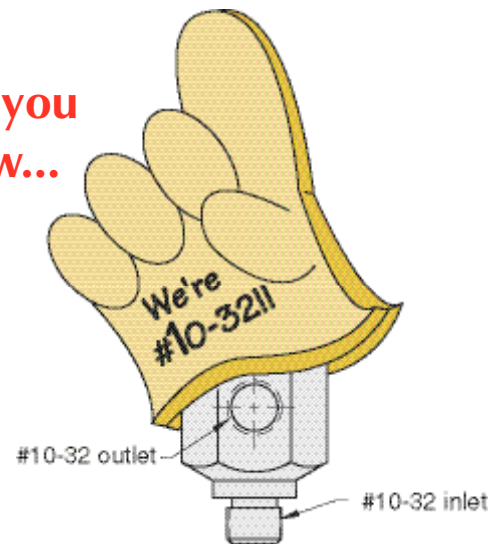
Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig



Part No. Description

TVO-2MP2 Position Toggle Poppet Valve, NP Brass Toggle
TVO-2MFP2 Position Toggle Poppet Valve, Plastic Toggle

Did you know...



Clippard was the first to use the #10-32 threaded port for Miniature valves, cylinders, and fittings which continues to be the industry standard today.



2-WAY STEM VALVES



2-WAY STEM VALVES

Two-way valves are the simplest pneumatic component – their function is merely to turn an air

supply on or off. They may be compared to a light switch; in the “on” position electricity flows from supply to the

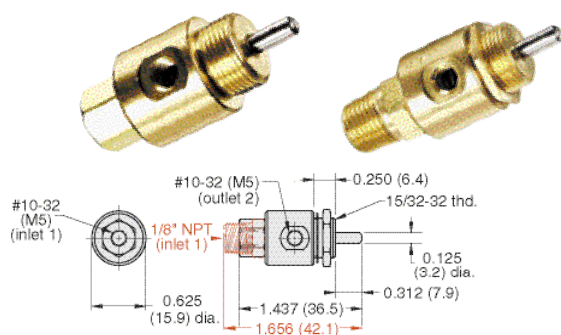
light, and in the “off” position the electrical current flow is stopped. Two-way stem valves may have a poppet or spool, and, by depressing the stem, a normally closed (NC) valve is opened and a normally open (NO) valve is closed. A variety of actuators may be attached to the valve such as roller cam followers, manual push buttons or pilot actuators; see the Valve Actuators section of this catalog.

Medium: Air, Water or Oil

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Stem Travel: 1/8" (3.2)

Normally-Closed Poppet 2-Way Valves



Input Pressure: 300 psig/21 bar max.

Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig;
170 l/min @ 6 bar

Force For Full Stem Travel: 24 oz. nominal

Mounting: 15/32-32 thread. Nut and lockwasher furnished.



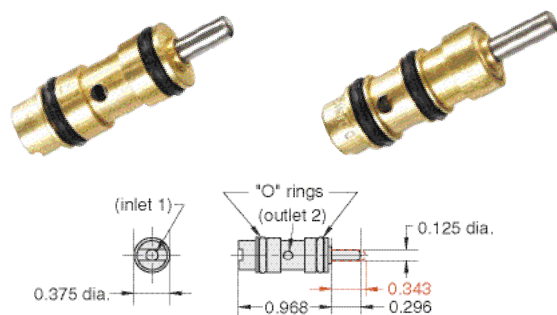
Part No. Description

MAV-2Two-Way Normally-Closed Valve, #10-32

MAV-2-M5 . . .Two-Way Normally-Closed Valve, M5

MAV-2PTwo-Way Normally-Closed Valve, 1/8" NPT

Miniature Poppet Cartridge Valves



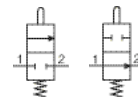
Input Pressure: 300 psig

Air Flow: 3.0 SCFM @ 50 psig; 6.0 SCFM @ 100 psig

Force For Full Stem Travel: 24 oz. nominal

Mounting: Inserts into a 3/8" bore (0.375" ±0.001")

Note: See page 113 for retaining details

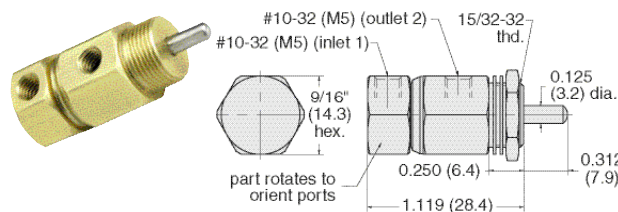


Part No. Description

MAV-2CTwo-Way Normally-Closed Poppet Cartridge Valve

MAVO-2C . . .Two-Way Normally-Open Poppet Cartridge Valve

N.C. Poppet Valves with Rotatable Inlet



Input Pressure: 300 psig/21 bar max.

Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig;
170 l/min @ 6 bar

Force For Full Stem Travel: 24 oz. nominal

Mounting: 15/32-32 thread. Nut and lockwasher furnished.

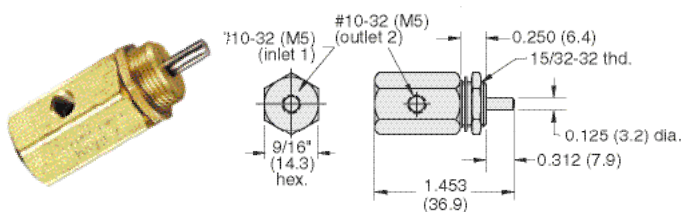


Part No. Description

MAV-2RTwo-Way Poppet Valve with Rotatable Inlet, #10-32

MAV-2R-M5 .Two-Way Poppet Valve with Rotatable Inlet, M5

Normally-Open Spool Valves



Input Pressure: 150 psig/10 bar max.

Air Flow: 6.0 SCFM @ 50 psig; 10 SCFM @ 100 psig;
245 l/min @ 6 bar

Force For Full Stem Travel: 32 oz. nominal

Mounting: 15/32-32 thread. Nut and lockwasher furnished.



Part No. Description

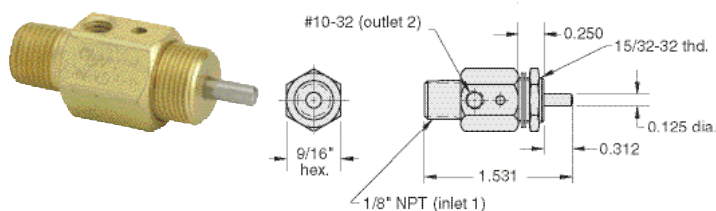
MAVO-2Two-Way Normally-Open Stem Valve, #10-32

MAVO-2-M5 .Two-Way Normally-Open Stem Valve, M5

2-WAY STEM VALVES



Normally-Closed Spool Cartridge Valve



Input Pressure: 150 psig max.

Air Flow: 6 SCFM @ 50 psig; 100 SCFM @ 100 psig

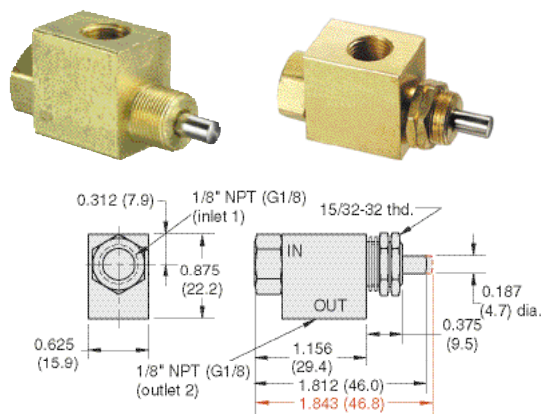
Force For Full Stem Travel: 32 oz. nominal

Mounting: 15/32-32 thread. Nut and lockwasher furnished.



Part No. Description
MAVO-2P . . .Normally-Closed Spool Cartridge Valve

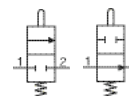
J-Series Miniature Poppet Valves



Input Pressure: MJV-2/MJV-2-MG - 300 psig/21 bar max.

MJVO-2/MJVO-2-MG - 150 psig/10 bar max.

Air Flow: MJV-2/MJV-2-MG - 14.0 SCFM @ 50 psig;
25 SCFM @ 100 psig; 600 l/min @ 6 bar
MJVO-2/MJVO-2-MG - 7 SCFM @ 50 psig;
12 SCFM @ 100 psig; 600 l/min @ 6 bar



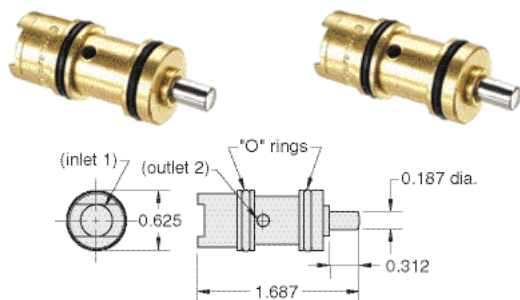
Force For Full Stem Travel: MJV-2/MJV-2-MG - 38 oz. nominal

MJVO-2/MJVO-2-MG - 36 oz. nominal

Mounting: 15/32-32 thread. Nuts and lockwashers furnished.

Part No. Description
MJV-2Normally-Closed Poppet Valve, 1/8" NPT
MJV-2-MG . . .Normally-Closed Poppet Valve, G1/8
MJVO-2Normally-Open Spool Valve, 1/8" NPT
MJVO-2-MG .Normally-Open Spool Valve, G1/8

J-Series Cartridge Valves



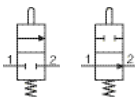
Input Pressure: 300 psig

Air Flow: 3.0 SCFM @ 50 psig; 6.0 SCFM @ 100 psig

Force For Full Stem Travel: 24 oz. nominal

Mounting: Inserts into a 3/8" bore (0.375" 0.001")

Note: See page 118 for mounting details



Part No. Description
MJV-2CNormally-Closed Poppet Cartridge Valve
MJVO-2C . . .Normally-Open Poppet Cartridge Valve

CAPTIVATED PUSH BUTTONS



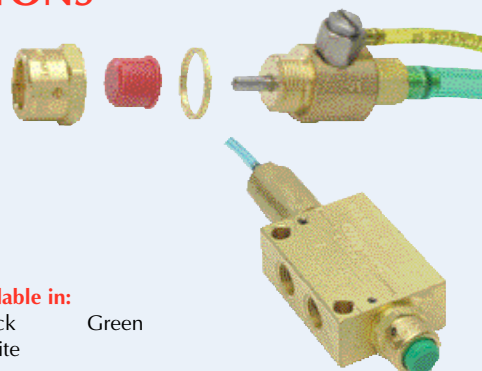
The small compact size make the push buttons adaptable to panel mounting. Unlike set screw retained buttons, the screw-on design will not allow the button to fall off. Designed to work with Clippard MAV, MJV, and FV series valves, these buttons also help protect the valve by preventing over-traveling of the stem and the potential for side-load on the valve. See page 135 for more information.

Button Housing Available in:

Black Chrome Nickel Plated
Brass

Button Colors Available in:

Yellow Black Green
Red White





2-WAY AIR-PILOTED VALVES

2-WAY AIR-PILOTED VALVES

Two-way valves are the simplest pneumatic component – their function is merely to turn an air supply on or off. They may be compared to a beer tap, in the “on” position beer flows from the keg to the mug and in the “off” position the beer flow is stopped. Two-way air piloted valves may have a poppet or spool and when an air signal is applied to the pilot, a normally closed (NC) valve is opened and a normally open (NO) valve is closed. When the pilot signal is removed, the valve reverts back to its original position.

Medium: Air, Water or Oil

Materials: Brass body, Buna-N seals, stainless steel stem and spring

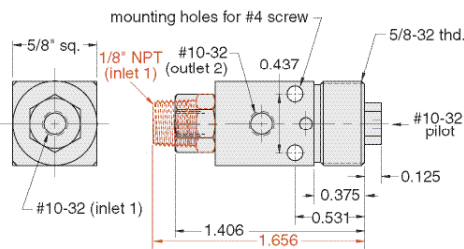
Stem Travel: 1/8”

Mounting: 5/8-32 thread or #4 screw. Nut and lockwasher may be ordered separately. Part Number: PAV-MH

Air Pilot Pressure: 15 psig min.

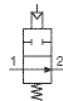
Foot Bracket: FB-1791

Air-Piloted Normally-Closed Poppet Valves



Input Pressure: 300 psig max.

Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig

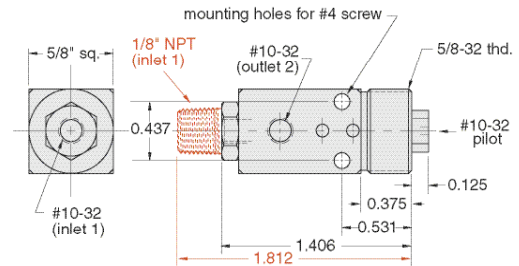


Part No. Description

PAV-2Normally-Closed Poppet Valve, #10-32

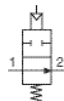
PAV-2PNormally-Closed Poppet Valve, 1/8" NPT

Air-Piloted Normally-Open Poppet Valves



Input Pressure: 150 psig max.

Air Flow: 6.8 SCFM @ 50 psig; 11.6 SCFM @ 100 psig



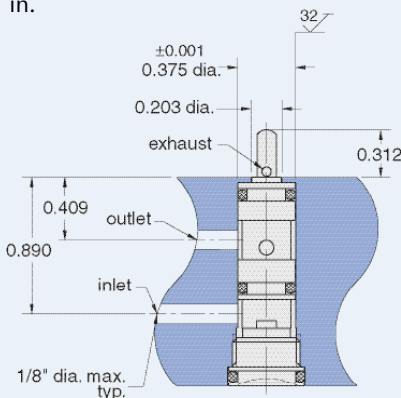
Part No. Description

PAVO-2Normally-Open Poppet Valve, #10-32

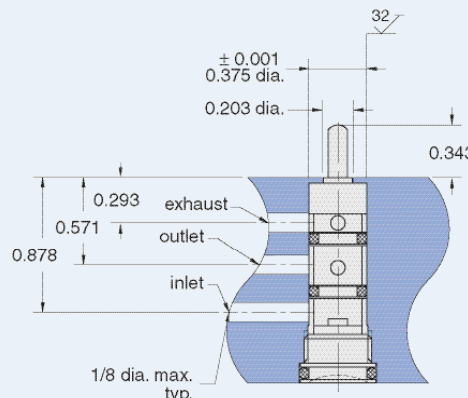
PAVO-2PNormally-Open Poppet Valve, 1/8" NPT

CARTRIDGE VALVE MOUNTING

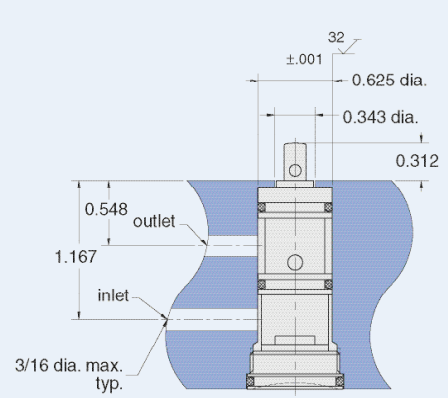
Clippard miniature cartridge valves offer the user flexibility in the application of 2-way and 3-way normally open or normally closed valves. Two sizes are provided: to fit either a 0.375" diameter bore or 0.625" diameter bore. They are used in Clippard heavy duty limit switches and are suitable for pneumatic tools and manifolds or for any use where a valve needs to be built in.



MAV-2C/3C



MAVO-2C/3C



MJV-2C/3C

3-WAY TOGGLE VALVES



3-WAY TOGGLE VALVES

Three-way valves are 2-way valves with the added function of exhausting the outlet when the valve is closed. When the toggle is in the "on" position air flows from the inlet to the outlet and the exhaust port is blocked. Moving the toggle to the "off" position closes the inlet and opens the outlet to an exhaust port which vents the outlet to atmosphere. 3-way toggle valves may have a poppet or spool and by movement

of the toggle may either be 2-position or have a momentary actuation.

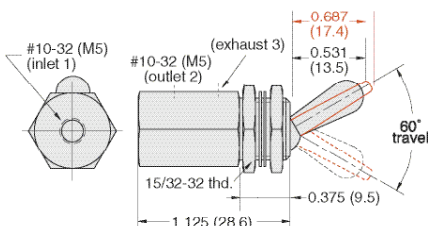
Medium: Air, Water or Oil

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Stem Travel: 1/8" (3.2)

Mounting: 15/32-32 thd. Nuts and lockwashers furnished

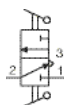
2 Position Spool Valves



Input Pressure: 150 psig/10 bar max.

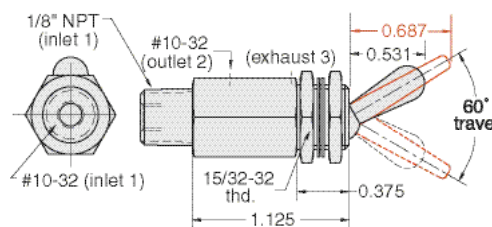
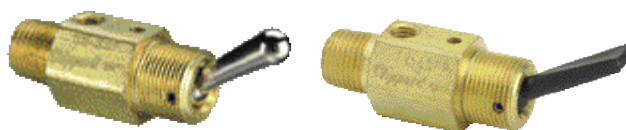
Air Flow: 4.5 SCFM @ 50 psig; 8.0 SCFM @ 100 psig;
190 l/min @ 6 bar

Force For Full Stem Travel: 12 oz. nominal



Part No.	Description
TV-3S	2 Position Spool Valve, NP Brass Toggle, #10-32
TV-3S-M5	2 Position Spool Valve, NP Brass Toggle, M5
TV-3SF	2 Position Spool Valve, Plastic Toggle, #10-32
TV-3SF-M5	2 Position Spool Valve, Plastic Toggle, M5

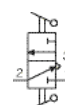
2 Position Spool Valve with 1/8" NPT Inlet



Input Pressure: 150 psig

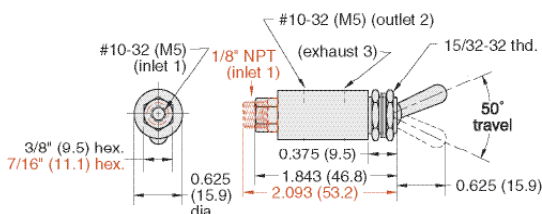
Air Flow: 11.6 SCFM @ 50 psig; 8.0 SCFM @ 100 psig

Force For Full Stem Travel: 12 oz. nominal



Part No.	Description
TV-3SP	2 Position Spool Valve, NP Brass Toggle
TV-3SFP	2 Position Spool Valve, Plastic Toggle

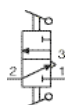
2 Position Poppet Valves



Input Pressure: 150 psig/10 bar max.

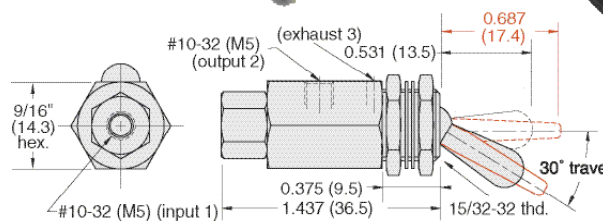
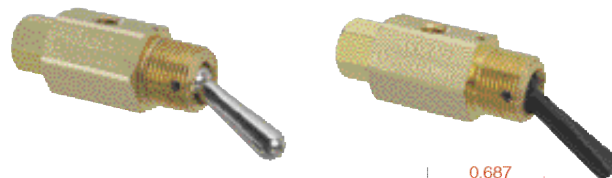
Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig;
175 l/min @ 6 bar

Force For Full Stem Travel: 16 oz. nominal



Part No.	Description
MTV-3	2 Position Poppet Valve, #10-32
MTV-3-M5	2 Position Poppet Valve, M5
MTV-3P	2 Position Poppet Valve, 1/8" NPT

2 Position N.C. Poppet with Momentary Actuation



Input Pressure: 150 psig/10 bar max.

Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig;
175 l/min @ 6 bar

Force For Full Stem Travel: 12 oz. nominal

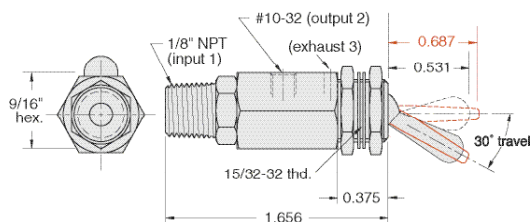
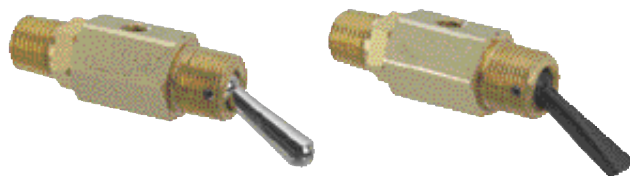


Part No.	Description
TV-3M	2 Position Poppet Valve, NP Brass Toggle, #10-32
TV-3M-M5	2 Position Poppet Valve, NP Brass Toggle, M5
TV-3MF	2 Position Poppet Valve, Plastic Toggle, #10-32
TV-3MF-M5	2 Position Poppet Valve, Plastic Toggle, M5



3-WAY TOGGLE VALVES

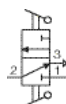
2 Position N.C. Spool w/Momentary Actuation



Input Pressure: 150 psig max.

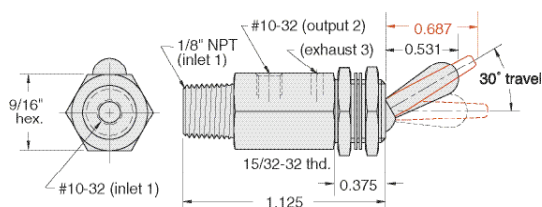
Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig

Force For Full Stem Travel: 12 oz. nominal



Part No.	Description
TV-3MP	. . . 2 Position Spool Valve, NP Brass Toggle
TV-3MFP	. . . 2 Position Spool Valve, Plastic Toggle

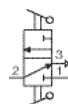
2 Position N.O. Poppet w/Momentary Actuation



Input Pressure: 300 psig max.

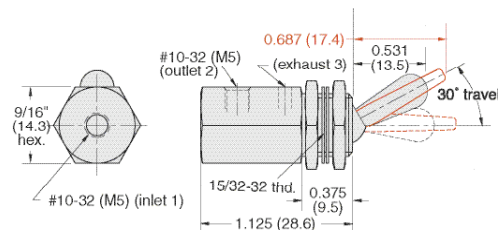
Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig

Force For Full Stem Travel: 12 oz. nominal



Order Information
TVO-3MP . . . 2 Position Spool Valve, NP Brass Toggle
TVO-3MFP . . . 2 Position Spool Valve, Plastic Toggle

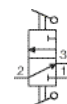
2 Position N.O. Poppet w/Momentary Actuation



Input Pressure: 300 psig/21 bar max.

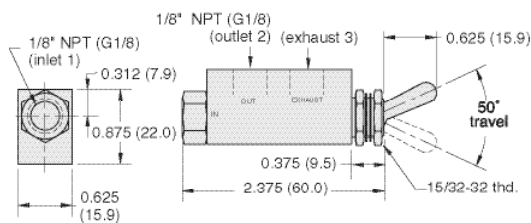
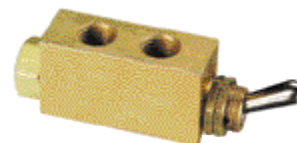
Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig;
170 lpm @ 6 bar

Force For Full Stem Travel: 12 oz. nominal



Part No.	Description
TVO-3M	. . . 2 Position Spool Valve, NP Brass Toggle, #10-32
TVO-3M-M5	. 2 Position Spool Valve, NP Brass Toggle, M5
TVO-3MF	. . . 2 Position Spool Valve, Plastic Toggle, #10-32
TVO-3MF-M5	2 Position Spool Valve, Plastic Toggle, M5

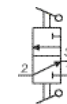
2 Position Poppet Valves



Input Pressure: 100 psig/6.9 bar max.

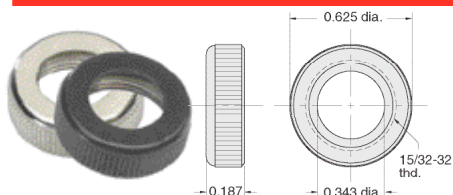
Air Flow: 14 SCFM @ 50 psig; 25 SCFM @ 100 psig;
600 l/min @ 6 bar

Force For Full Stem Travel: 16 oz. nominal



Part No.	Description
MJTV-3	. . . . 2 Position Poppet Valve, 1/8" NPT
MJTV-3-MG	. 2 Position Poppet Valve, G1/8

15/32 Panel Mounting Nut



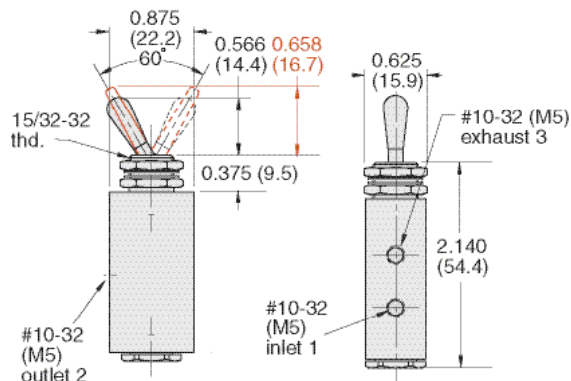
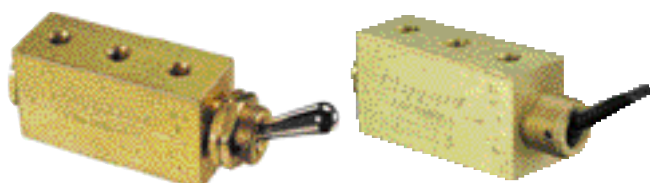
Brass with black or bright nickel finish

Part No.
11406-1Black
11406-2Bright

3-WAY TOGGLE & STEM VALVES



2 Position Spool Valves

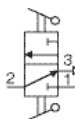


Input Pressure: 150 psig/10 bar max.

Air Flow: 6 SCFM @ 50 psig; 10 SCFM @ 100 psig;
280 l/min @ 6 bar

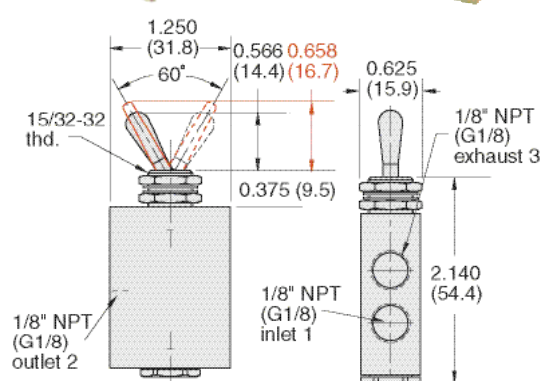
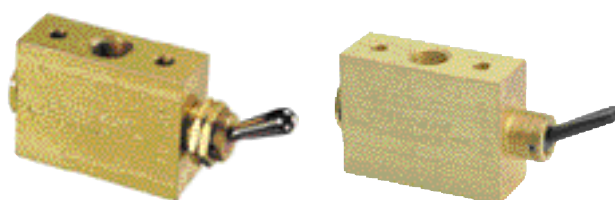
Force For Full Stem Travel: 16 oz. nominal

Mounting: 15/32-32 thread. Nuts and lockwashers furnished.



Part No.	Description
FTV-3	. . . . .2 Position Spool Valve, NP Brass Toggle, #10-32
FTV-3-M5	. . . . .2 Position Spool Valve, NP Brass Toggle, M5
FTV-3F	. . . . .2 Position Spool Valve, Plastic Toggle, #10-32
FTV-3F-M5	. . . . .2 Position Spool Valve, Plastic Toggle, M5

2 Position Spool Valves

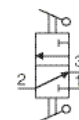


Input Pressure: 150 psig/10 bar max.

Air Flow: 6.5 SCFM @ 50 psig; 10.5 SCFM @ 100 psig;
290 l/min @ 6 bar

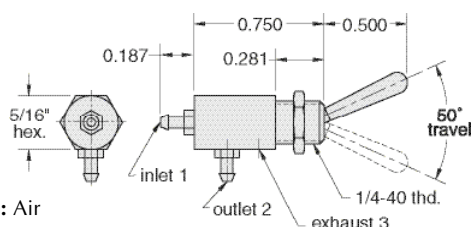
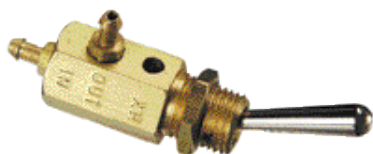
Force For Full Stem Travel: 16 oz. nominal

Mounting: 15/32-32 thread. Nuts and lockwashers furnished.



Part No.	Description
FTV-3P	. . . . .2 Position Spool Valve, NP Brass Toggle, 1/8" NPT
FTV-3P-MG	. . . . .2 Position Spool Valve, NP Brass Toggle, G1/8
FTV-3FP	. . . . .2 Position Spool Valve, Plastic Toggle, 1/8" NPT
FTV-3FP-MG	. . . . .2 Position Spool Valve, Plastic Toggle, G1/8

Sub-Miniature Spool Valve



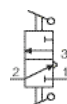
Medium: Air

Input Pressure: 100 psig max.

Air Flow: 1.4 SCFM @ 100 psig

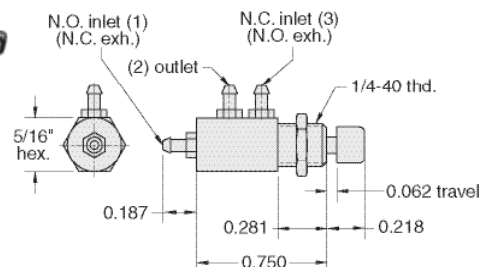
Force For Full Stem Travel: 24 oz. nominal

Spool Material: Delrin®



Part No.	Description
SMTV-3	. . . . .Sub-Miniature Spool Valve

Sub-Miniature N.O. or N.C. Spool Valve



Medium: Air

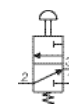
Stem Travel: 1/16"

Input Pressure: 100 psig max.

Air Flow: 1.4 SCFM @ 100 psig

Force For Full Stem Travel: 20 oz. nominal

Spool Material: Delrin®



Part No.	Description
SMAV-3	. . . . .Sub-Miniature N.O. or N.C.



3-WAY STEM VALVES



3-WAY STEM VALVES

Three-way valves are 2-way valves with the added function of exhausting the outlet when the valve is closed. When the stem is depressed, the valve is in the

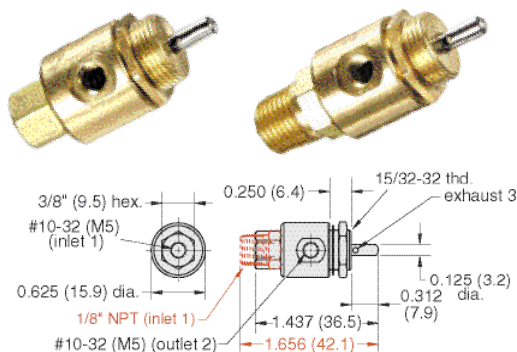
"on" position allowing air to flow from the inlet to the outlet while blocking the exhaust. Releasing the stem closes the inlet and opens the outlet to an exhaust port which vents the outlet to atmosphere. 3-way stem valves may have a poppet or spool and be normally closed (NC) or normally open (NO).

Medium: Air

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Stem Travel: 1/8" (3.2)

Miniature 3-Way Poppet Valves

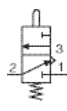


Input Pressure: 300 psig/21 bar max.

Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig;
170 l/min @ 6 bar

Force For Full Stem Travel: 24 oz. nominal

Mounting: 15/32-32 thread. Nut and lockwasher furnished.



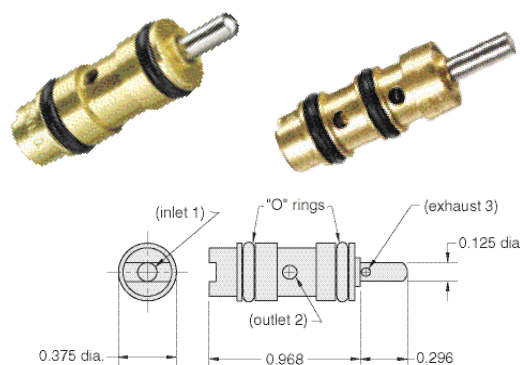
Part No. Description

MAV-3Miniature Poppet Valve, #10-32

MAV-3-M5 . .Miniature Poppet Valve, M5

MAV-3P . . .Miniature Poppet Valve, 1/8" NPT

Miniature Cartridge Valves



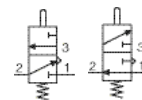
Input Pressure: 300 psig

Air Flow: 3.0 SCFM @ 50 psig; 6.0 SCFM @ 100 psig

Force For Full Stem Travel: 24 oz. nominal

Mounting: Inserts into a 3/8" bore (0.375" 0.001")

Note: See page 118 for mounting details

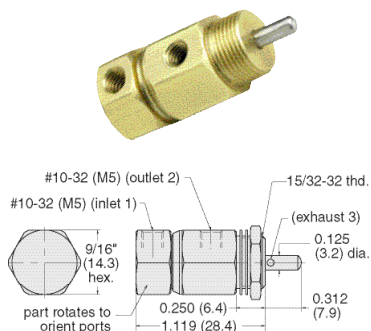


Part No. Description

MAV-3C . . .Normally-Open Poppet Cartridge Valve

MAVO-3C . .Normally-Closed Spool Cartridge Valve

N. C. Poppet Valves with Rotatable Inlet



Input Pressure: 300 psig/21 bar max.

Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig;
170 l/min @ 6 bar

Force For Full Stem Travel: 24 oz. nominal

Mounting: 15/32-32 thread. Nut and lockwasher furnished.

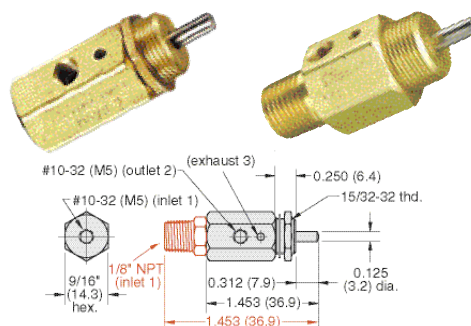


Part No. Description

MAV-3RNormally-Closed Valve with Rotatable Inlet, #10-32

MAV-3R-M5 .Normally-Closed Valve with Rotatable Inlet, M5

Normally-Open Spool Valves



Input Pressure: 150 psig/10 bar max.

Air Flow: 6.0 SCFM @ 50 psig; 10 SCFM @ 100 psig;
245 l/min @ 6 bar

Force For Full Stem Travel: 32 oz. nominal

Mounting: 15/32-32 thread. Nut and lockwasher furnished.



Part No. Description

MAVO-3Normally-Open Spool Valve, #10-32

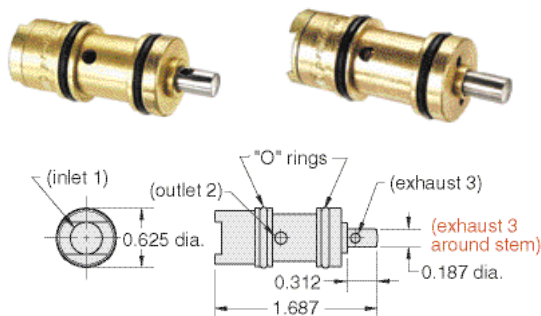
MAVO-3-M5 Normally-Open Spool Valve, M5

MAVO-3P . . .Normally-Open Spool Valve, 1/8" NPT

3-WAY STEM VALVES



J-Series Poppet Cartridge Valves



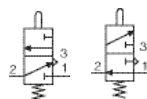
Input Pressure: 300 psig

Air Flow: 11 SCFM @ 50 psig; 22 SCFM @ 100 psig

Force For Full Stem Travel: 38 oz. nominal

Mounting: Inserts into a 5/8" bore (0.625" ±0.001")

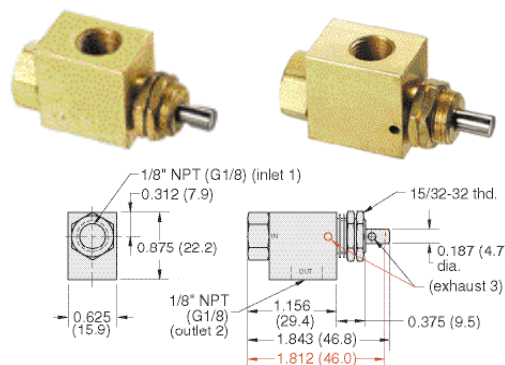
Note: See page 118 for mounting details



Part No. Description

MJV-3CThree-Way Normally-Closed Poppet Cartridge Valve
MJVO-3C . . .Three-Way Normally-Open Poppet Cartridge Valve

J-Series 3-Way Poppet Valves

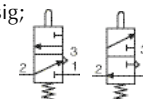


Input Pressure: MJV-3/MJV-3-MG - 300 psig/21 bar max.
 MJVO-3/MJVO-3-MG - 150 psig/10 bar max.

Air Flow: 14.0 SCFM @ 50 psig; 25 SCFM @ 100 psig;
 600 l/min @ 6 bar

Force For Full Stem Travel: 38 oz. nominal

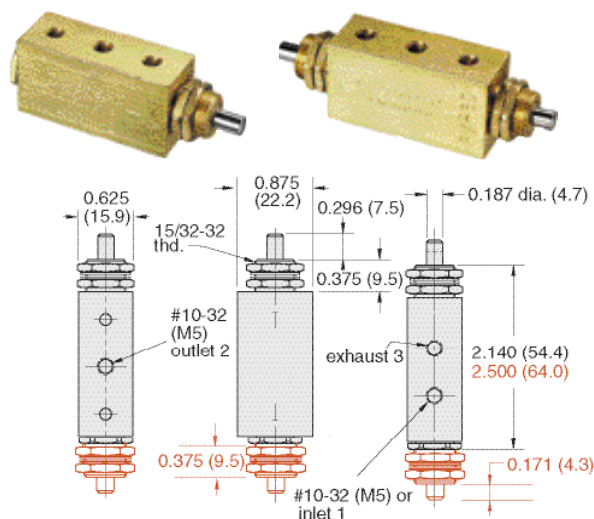
Mounting: 15/32-32 thread. Nuts and lockwashers furnished.



Part No. Description

MJV-3Normally-Closed Valve with Spring Return, 1/8" NPT
MJV-3-MG . .Normally-Closed Valve with Spring Return, G1/8
MJVO-3 . . .Normally-Open Spool Valve, 1/8" NPT
MJVO-3-MG .Normally-Open Spool Valve, G1/8

FV-Series 3-Way Spool Valves



Input Pressure: Vacuum to 150 psig/10 bar max.

Air Flow: 6 SCFM @ 50 psig; 10 SCFM @ 100 psig;
 240 l/min @ 6 bar

Force For Full Stem Travel: FV-3 & FV-3-M5 - 4 1/2 pounds nominal.
 FV-3D & FV-3D-M5 - 1 1/2 pounds nominal

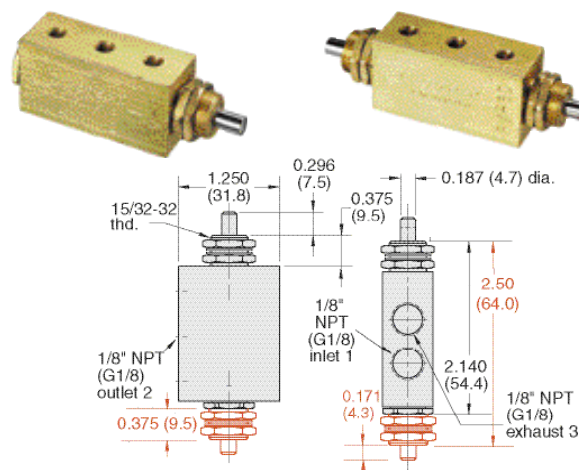
Mounting: 5/32-32 thread. Nuts and lockwashers furnished.



Part No. Description

FV-3Three-Way Spool Valve, #10-32
FV-3-M5 . . .Three-Way Spool Valve, M5
FV-3DThree-Way Two Position Spool Valve, #10-32
FV-3D-M5 . .Three-Way Two Position Spool Valve, M5

FV-Series 3-Way Spool Valves



Input Pressure: Vacuum to 150 psig/10 bar max.

Air Flow: 6.5 SCFM @ 50 psig; 10.5 SCFM @ 100 psig;
 240 l/min @ 6 bar

Force For Full Stem Travel: FV-3P & FV-3-MG - 4 1/2 pounds nominal.
 FV-3DP & FV-3D-MG - 1 1/2 pounds nominal

Mounting: 5/32-32 thread. Nuts and lockwashers furnished.

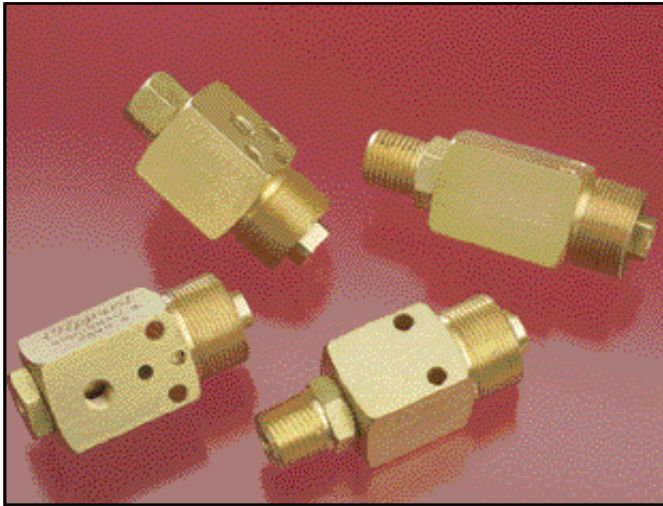


Part No. Description

FV-3PSpool Plunger Actuated Spring Return Valve, 1/8" NPT
FV-3-MG . .Spool Plunger Actuated Spring Return Valve, G1/8
FV-3DP . . .Spool Double Plunger 2 Position Valve, 1/8" NPT
FV-3D-MG . .Spool Double Plunger 2 Position Valve, G1/8



3-WAY AIR-PILOTED & LIMIT VALVES



3-WAY AIR-PILOTED VALVES

Three-way valves are 2-way valves with the added function of exhausting the outlet when the valve is closed. When an air signal is applied to the pilot of a normally closed (NC) valve the inlet is open to the outlet and the exhaust is blocked; removing the pilot closes the inlet and the outlet is open to the exhaust port which vents to atmosphere. When an air signal is applied to the pilot of a normally open (NO) valve the inlet is blocked and the outlet is vented; removing the pilot opens the inlet to the outlet and blocks the exhaust.

Medium: Air only

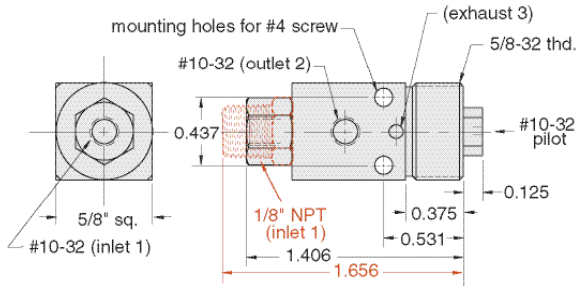
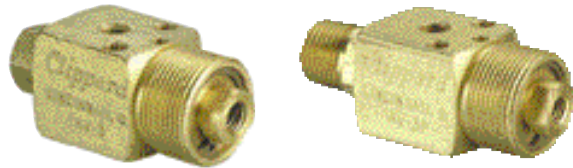
Materials: Brass body, Buna-N seals, stainless steel stem and spring

Mounting: 5/8-32 thread or #4 screw. Nut and lockwasher may be ordered separately. Part Number: PAV-MH

Air Pilot Pressure: 15 psig min.

Foot Bracket: FB-1791

Air-Piloted Normally-Closed Poppet Valves



Input Pressure: 300 psig max.

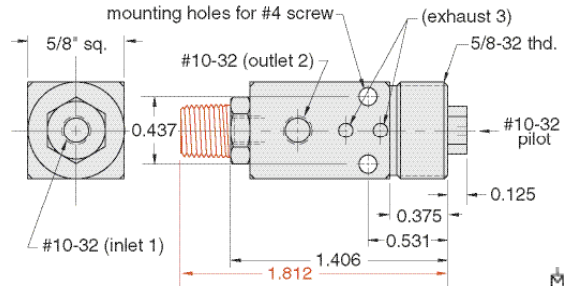
Air Flow: 4.0 SCFM @ 50 psig; 6.8 SCFM @ 100 psig

Part No. Description

PAV-3Normally-Closed Poppet Valve, #10-32

PAV-3PNormally-Closed Poppet Valve, 1/8" NPT

Air-Piloted Normally-Open Poppet Valves



Input Pressure: 150 psig max.

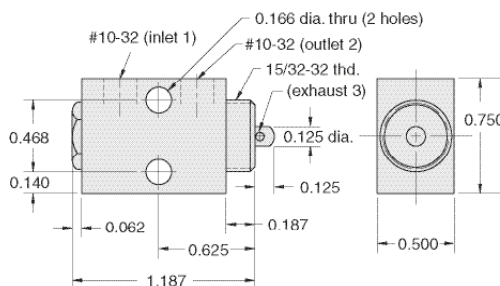
Air Flow: 6.8 SCFM @ 50 psig; 11.6 SCFM @ 100 psig

Part No. Description

PAVO-3Normally-Open Poppet Valve, #10-32

PAVO-3PNormally-Open Poppet Valve, 1/8" NPT

Miniature Limit Valve



Stem Travel: 1/8"

Input Pressure: 150 psig max.

Air Flow: 4 SCFM @ 50 psig; 7 SCFM @ 100 psig

Force for Full Stem Travel: 48 oz. nominal

Mounting: Dual #20 holes or 15/32-32 thd. Nut and lockwasher furnished

Part No. Description

MLV-3Normally-Closed Miniature Limit Valve

4-WAY TOGGLE VALVES



4-WAY TOGGLE VALVES

Four-way valves are 3-way valves with an additional outlet. When the toggle is in one position air flows from the inlet to one of the outlets. The second outlet is open to the exhaust port which is vented to atmosphere. Moving the toggle to the opposite position opens the inlet to the second outlet

while exhausting the first outlet. 4-way toggle valves are spool valves that by movement of the toggle may either be 2-position or have a momentary actuation.

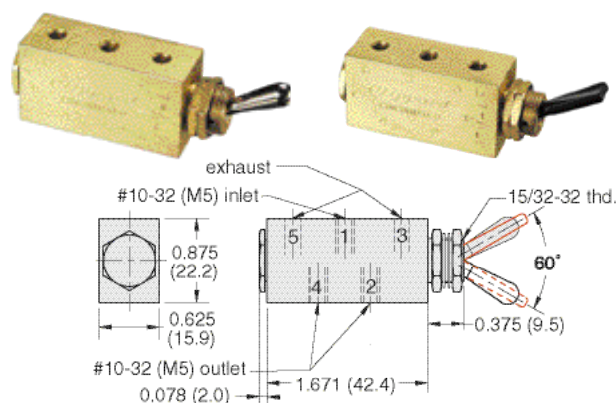
Medium: Air, Water or Oil

Stem Travel: 1/8" (3.2)

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Mounting: 15/32-32 thread. Nuts and lockwashers furnished.

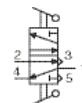
2 Position Spool Valves



Input Pressure: 150 psig/10 bar max.

Air Flow: 6 SCFM @ 50 psig; 10 SCFM @ 100 psig;
240 l/min @ 6 bar

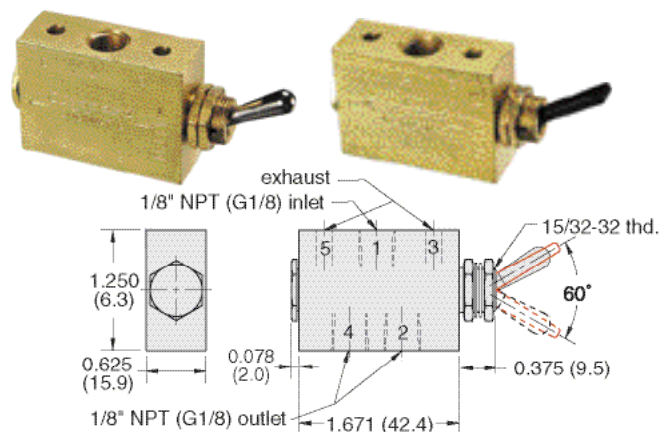
Force For Full Stem Travel: 12 oz. nominal



Part No. Description

MTV-4 2 Position Spool Valve, NP Brass Toggle, #10-32
MTV-4-M5 . . . 2 Position Spool Valve, NP Brass Toggle, M5
MTV-4F 2 Position Spool Valve, Plastic Toggle, #10-32
MTV-4F-M5 . . 2 Position Spool Valve, Plastic Toggle, M5

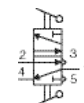
J-Series 2 Position Spool Valves



Input Pressure: 150 psig/10 bar max.

Air Flow: 6.5 SCFM @ 50 psig; 10.5 SCFM @ 100 psig;
250 l/min @ 6 bar

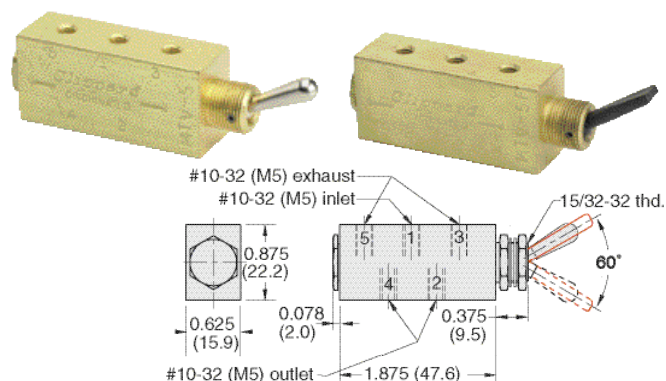
Force For Full Stem Travel: 12 oz. nominal



Part No. Description

MJTV-4 2 Position Spool Valve, NP Brass Toggle, 1/8" NPT
MJTV-4-MG . . 2 Position Spool Valve, NP Brass Toggle, G1/8
MJTV-4F 2 Position Spool Valve, Plastic Toggle, 1/8" NPT
MJTV-4F-MG . . 2 Position Spool Valve, Plastic Toggle, G1/8

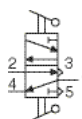
2 Position Fully-Ported Spool Valves



Input Pressure: 150 psig/10 bar max.

Air Flow: 6 SCFM @ 50 psig; 10 SCFM @ 100 psig;
240 l/min @ 6 bar

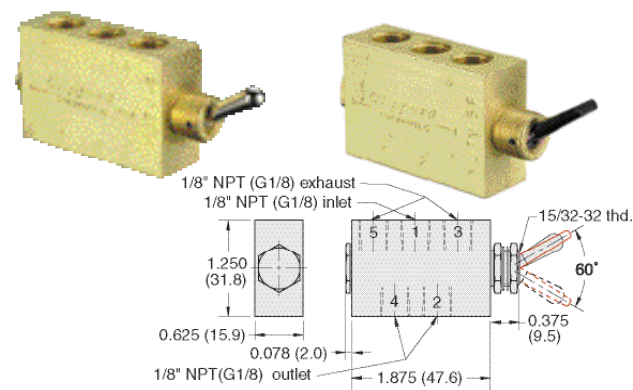
Force For Full Stem Travel: 16 oz. nominal



Part No. Description

MTV-5 2 Position Spool Valve, NP Brass Toggle, #10-32
MTV-5-M5 . . . 2 Position Spool Valve, NP Brass Toggle, M5
MTV-5F 2 Position Spool Valve, Plastic Toggle, #10-32
MTV-5F-M5 . . 2 Position Spool Valve, Plastic Toggle, M5

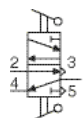
J-Series 2 Position Fully-Ported Spool



Input Pressure: 150 psig/10 bar max.

Air Flow: 6.5 SCFM @ 50 psig; 10.5 SCFM @ 100 psig;
250 l/min @ 6 bar

Force For Full Stem Travel: 16 oz. nominal



Part No. Description

MJTV-5 2 Position Spool Valve, NP Brass Toggle, 1/8" NPT
MJTV-5-MG . . 2 Position Spool Valve, NP Brass Toggle, G1/8
MJTV-5F 2 Position Spool Valve, Plastic Toggle, 1/8" NPT
MJTV-5F-MG . . 2 Position Spool Valve, Plastic Toggle, G1/8

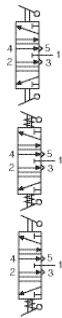


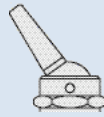
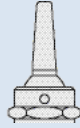
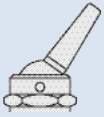
4-WAY TOGGLE VALVES

3 Position Toggle Valves

By choosing valves with different toggle position options the user can customize the application to best suit the needs. For example, the DM model can be used on the momentary side as a "jog" or "manual" control, and with the detented side for "automatic" or "run" mode.

Valves are made of solid brass, bright dipped finish to resist corrosion; stems and springs are of stainless steel, toggle of black acetyl plastic, and seals of Buna-N rubber.



Model Number				
TV-4D TV-4D-M5 TV-4DP	#10-32 M5 1/8" NPT	Detented	SPRING CENTERED supply blocked both sides exhausted	Detented
TV-4M TV-4M-M5 TV-4MP	#10-32 M5 1/8" NPT	Momentary		Momentary
TV-4DM TV-4DM-M5 TV-4DMP	#10-32 M5 1/8" NPT	Detented		Momentary

Medium: Air

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Input Pressure: 150 psig/10 bar max.

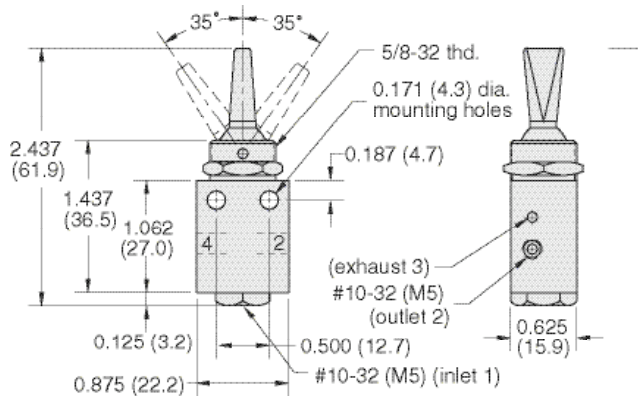
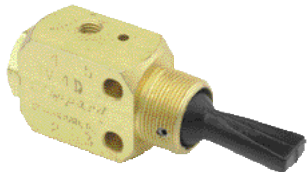
Air Flow: 4.5 SCFM @ 50 psig; 7.5 SCFM @ 100 psig;
180 l/min @ 6 bar

Force For Full Stem Travel: 8 oz. nominal

Toggle: Plastic

Mounting: 5/8-32 thread. Nut and lockwashers furnished.

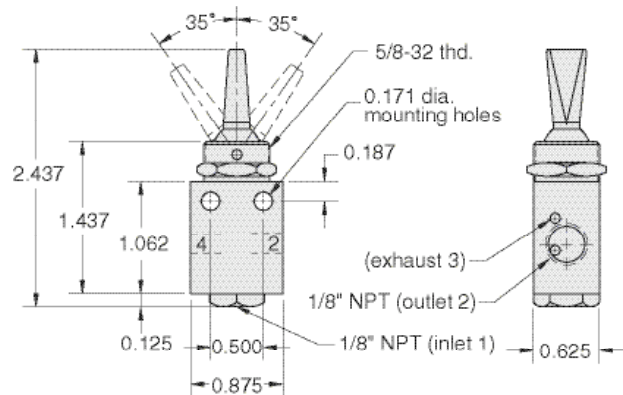
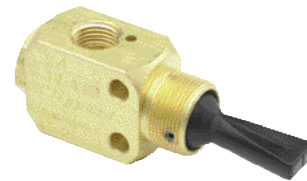
3 Position Toggle Valves, #10-32/M5



Part No. Description

TV-4DToggle Valve, Detented/Detented, #10-32
TV-4D-M5 . .Toggle Valve, Detented/Detented, M5
TV-4MToggle Valve, Momentary/Momentary, #10-32
TV-4M-M5 . .Toggle Valve, M5, Momentary/Momentary, M5
TV-4DM . . .Toggle Valve, Detented/Momentary, #10-32
TV-4DM-M5 .Toggle Valve, Detented/Momentary, M5

3 Position Toggle Valves, 1/8" NPT



Part No. Description

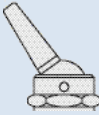
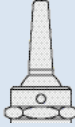
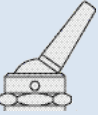
TV-4DPToggle Valve, Detented/Detented, 1/8" NPT
TV-4MPToggle Valve, Momentary/Momentary, 1/8" NPT
TV-4DMP . . .Toggle Valve, Detented/Momentary, 1/8" NPT

4-WAY TOGGLE VALVES



Fill and Bleed Applications

The FBV-3 may be used to pressurize or "fill" a chamber or bladder by depressing the toggle in one direction and then de-pressurize or "bleed" that same chamber or bladder by depressing the toggle in the other direction. Toggling back and forth between the inlet and exhaust provides a fine adjustment of the required pressure in the chamber or bladder.

Model Number				
FBV-3D & FBV-3D-F FBV-3DP	#10-32 1/8" NPT	Detented	SPRING CENTERED all ports blocked	Detented
				Momentary
FBV-3DM & FBV-3DM-F FBV-3DMP	#10-32 1/8" NPT	Detented		Momentary

Medium: Air

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Input Pressure: 120 psig max.

Air Flow:

Adjustable

3.0 scfm @ 50 psig

5.0 scfm @ 100 psig

Full-Flow (-F)

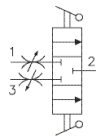
4.5 scfm @ 50 psig

7.5 scfm @ 100 psig

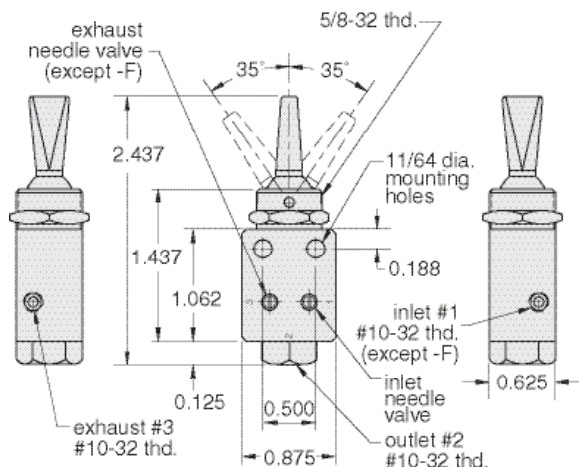
Force For Full Stem Travel: 8 oz. nominal

Toggle: Plastic

Mounting: 5/8-32 thread. Nut and lockwashers furnished.
(2) 0.171 mounting holes in body or may be mounted directly on a cylinder

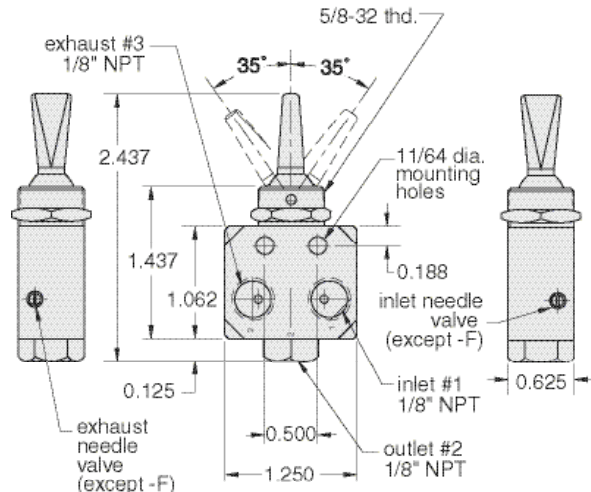
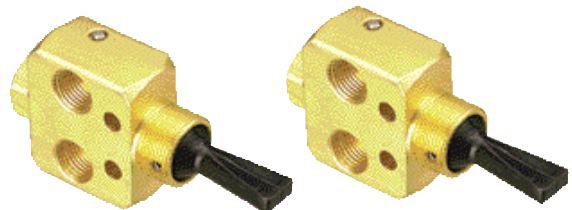


3 Position Fill & Bleed Valves, #10-32



Part No.	Description
FBV-3D	Fill & Bleed Valve, Adjustable, Detented/Detented
FBV-3D-F	Fill & Bleed Valve, Full-Flow, Detented/Detented
FBV-3M	Fill & Bleed Valve, Adjustable, Momentary/Momentary
FBV-3M-F	Fill & Bleed Valve, Full-Flow, Momentary/Momentary
FBV-3DM	Fill & Bleed Valve, Adjustable, Detented/Momentary
FBV-3DM-F	Fill & Bleed Valve, Full-Flow, Detented/Momentary

3 Position Fill & Bleed Valves, 1/8" NPT



Part No.	Description
FBV-3DP	Fill & Bleed Valve, Adjustable, Detented/Detented
FBV-3DP-F	Fill & Bleed Valve, Full-Flow, Detented/Detented
FBV-3MP	Fill & Bleed Valve, Adjustable, Momentary/Momentary
FBV-3MP-F	Fill & Bleed Valve, Full-Flow, Momentary/Momentary
FBV-3DMP	Fill & Bleed Valve, Adjustable, Detented/Momentary
FBV-3DMP-F	Fill & Bleed Valve, Full-Flow, Detented/Momentary



4-WAY STEM VALVES

4-WAY STEM VALVES

Four-way valves are 3-way valves with an additional outlet. When the stem is in one position air flows from the inlet to one of the outlets. The second outlet is open to the exhaust port. Moving the stem to the opposite position opens the inlet to the second outlet while exhausting the first outlet. 4-way stem valves

are spool valves that may either be spring return or double acting.

Medium: Air

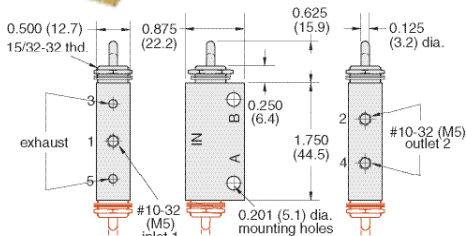
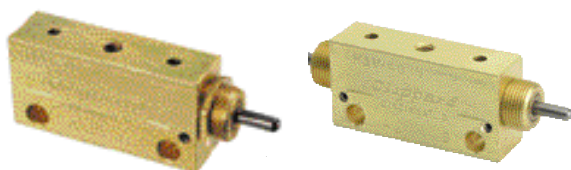
Stem Travel: 1/8" (3.2)

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Input Pressure: 150 psig/10 bar max.

Mounting: 15/32-32 thread. Nut and lockwasher furnished.

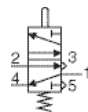
Miniature 4-Way Spool Valves



Air Flow: 5.0 SCFM @ 50 psig; 8.5 SCFM @ 100 psig;
240 l/min @ 6 bar

Force For Full Stem Travel: MAV-4 - 38 oz. nominal;
MAV-4D - 12 oz. nominal

Mounting: Also two 0.201" dia. mounting holes in valve body.



Part No. Description

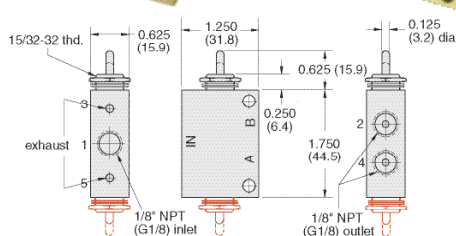
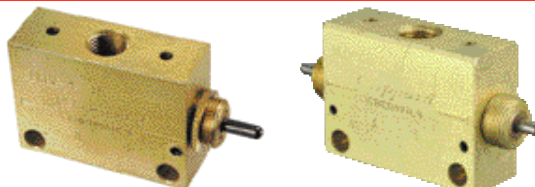
MAV-4 Spool Valve with Spring Return, #10-32

MAV-4-M5 . . . Spool Valve with Spring Return, M5

MAV-4D 2 Position Spool Valve, #10-32

MAV-4D-M5 . . 2 Position Spool Valve, M5

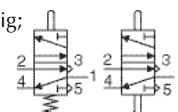
J-Series 4-Way Spool Valves



Air Flow: 8.0 SCFM @ 50 psig; 14.0 SCFM @ 100 psig;
390 l/min @ 6 bar

Force For Full Stem Travel: MAV-4 - 38 oz. nominal;
MAV-4D - 12 oz. nominal

Mounting: Also two 0.201" dia. mounting holes in valve body.



Part No. Description

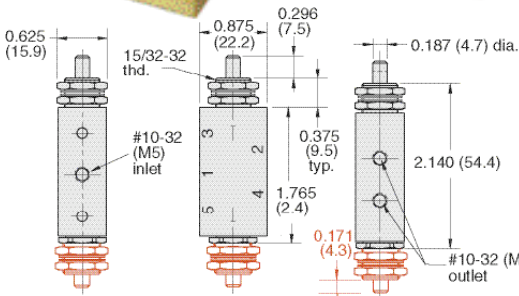
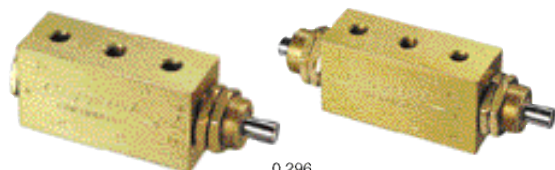
MJV-4 Spool Valve with Spring Return, 1/8" NPT

MJV-4-MG . . . Spool Valve with Spring Return, G1/8

MJV-4D 2 Position Spool Valve, 1/8" NPT

MJV-4D-MG . . 2 Position Spool Valve, G1/8

FV-Series 4-Way Spool Valves



Air Flow: 6.0 SCFM @ 50 psig; 10 SCFM @ 100 psig;
240 l/min @ 6 bar

Force For Full Stem Travel: FV-4 & FV-4-M5 - 4 1/2 lb. nominal;
FV-4P & FV-4P-M5 - 1 1/2 lb. nominal

Part No. Description

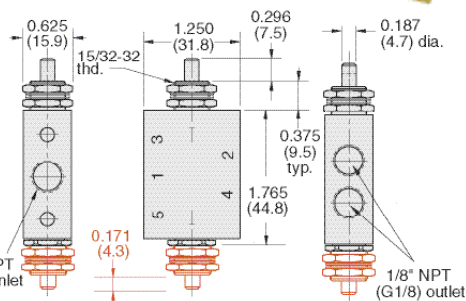
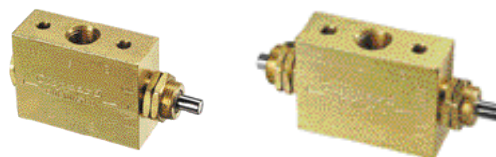
FV-4 Plunger Actuated Spring Return Valve, #10-32

FV-4-M5 . . . Plunger Actuated Spring Return Valve, M5

FV-4D 2 Position Double Plunger Valve, #10-32

FV-4D-M5 . . . 2 Position Double Plunger Valve, M5

FV-Series 4-Way Spool Valves



Air Flow: 6.5 SCFM @ 50 psig; 10 SCFM @ 100 psig;
250 l/min @ 6 bar

Force For Full Stem Travel: FV-4P & FV-4-MG - 4 1/2 lb. nominal;
FV-4DP & FV-4D-MG - 1 1/2 lb. nominal

Part No. Description

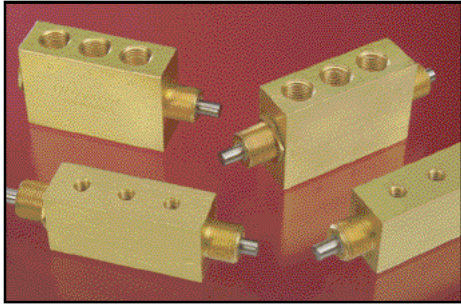
FV-4P Plunger Actuated Spring Return Valve, 1/8" NPT

FV-4-MG . . . Plunger Actuated Spring Return Valve, G1/8

FV-4DP 2 Position Double Plunger Valve, 1/8" NPT

FV-4D-MG . . . 2 Position Double Plunger Valve, G1/8

4-WAY FULLY-PORTED STEM VALVES

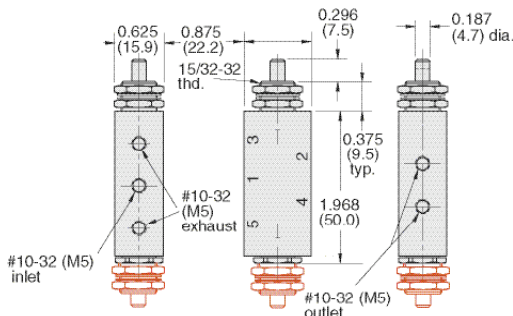
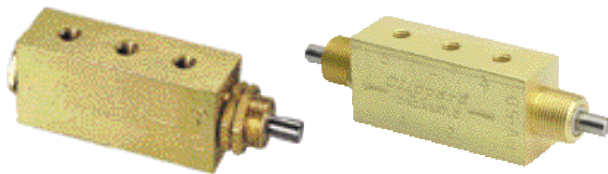


4-WAY FULLY-PORTED STEM VALVES

Four-way fully-ported valves have two inlets,

two outlets and one exhaust port. When the stem is in one position air flows from the #1 inlet to the #1 outlet. The #2 inlet is blocked and the #2 outlet is exhausted. Moving the stem to the opposite position opens the #2 inlet to the #2 outlet while blocking the #1 inlet and opening the #1 outlet to the exhaust. This may be defined as two 3-way valves, one normally closed and one normally open operating simultaneously. 4-way fully ported stem valves may either be spring return or double acting. A double acting stem must be moved from one position to the other, a spring return stem will move to the opposite position when released.

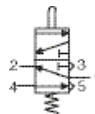
4-Way Fully-Ported Valves



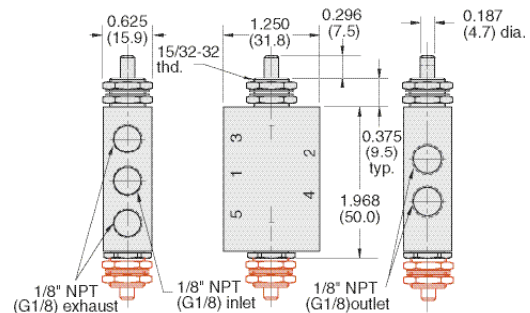
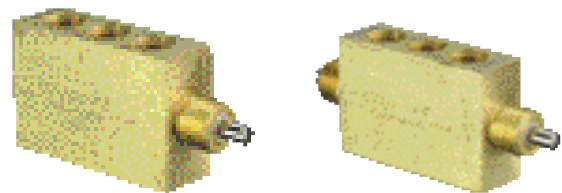
Medium: Air, Water or Oil

Air Flow: 6.0 SCFM @ 50 psig; 10 SCFM @ 100 psig;
240 l/min @ 6 bar

Force For Full Stem Travel: FV-5 & FV-5-M5 - 4 1/2 lb. nominal;
FV-5D & FV-5D-M5 - 1 1/2 lb. nominal



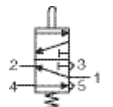
4-Way Fully-Ported Valves



Medium: Air, Water or Oil

Air Flow: 6.5 SCFM @ 50 psig; 10.5 SCFM @ 100 psig;
250 l/min @ 6 bar

Force For Full Stem Travel: FV-5P & FV-5-MG - 4 1/2 lb. nominal;
FV-5DP & FV-5D-MG - 1 1/2 lb. nominal



Part No. Description

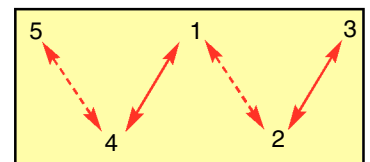
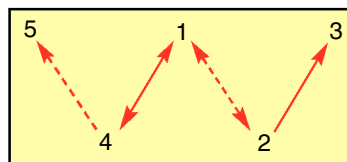
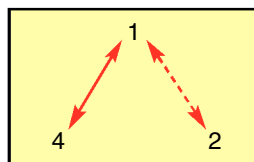
FV-5 Plunger Actuated Spring Return Valve, #10-32
FV-5-M5 . . Plunger Actuated Spring Return Valve, M5
FV-5D 2 Position Double Plunger Valve, #10-32
FV-5D-M5 . 2 Position Double Plunger Valve, M5

Part No. Description

FV-5P Plunger Actuated Spring Return Valve, 1/8" NPT
FV-5-MG Plunger Actuated Spring Return Valve, G1/8
FV-5DP 2 Position Double Plunger Valve, 1/8" NPT
FV-5D-MG . . 2 Position Double Plunger Valve, G1/8

Flow Paths for "FTV & FV" Series

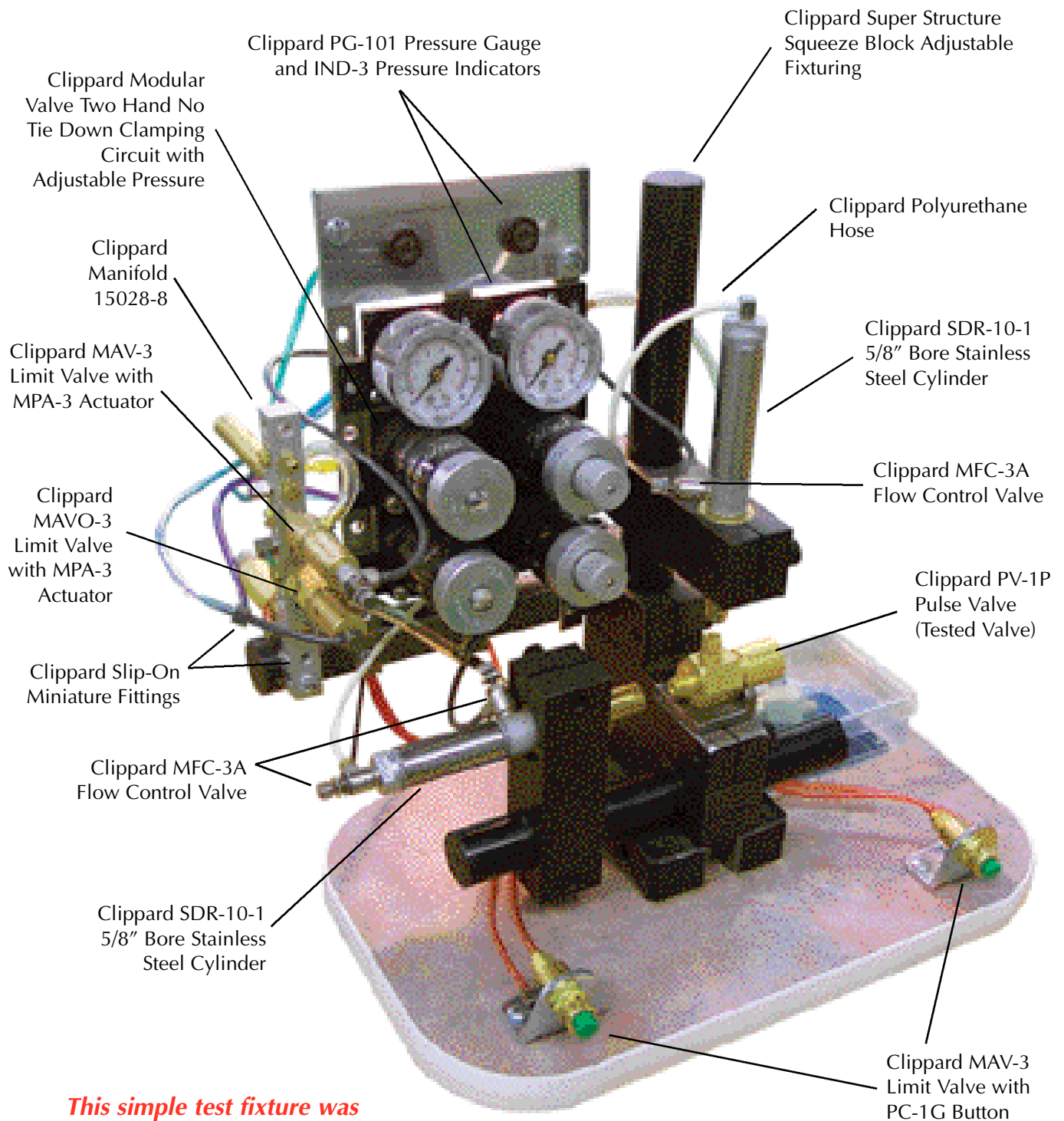
Solid lines indicate flow paths with toggle or stem in one direction. Dotted lines indicate flow paths when the toggle or stem are shifted.



Note: Includes MTV-4, MTV-5, MFTV-4 & MJTV-5



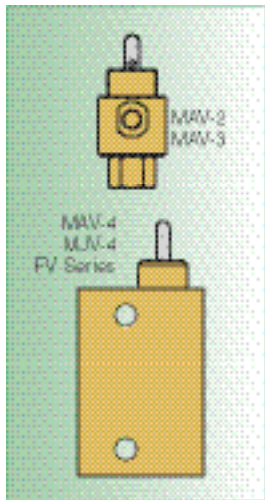
Pneumatic Pulse Valve Leak Tester



This simple test fixture was inexpensively and quickly built using standard Clippard products.

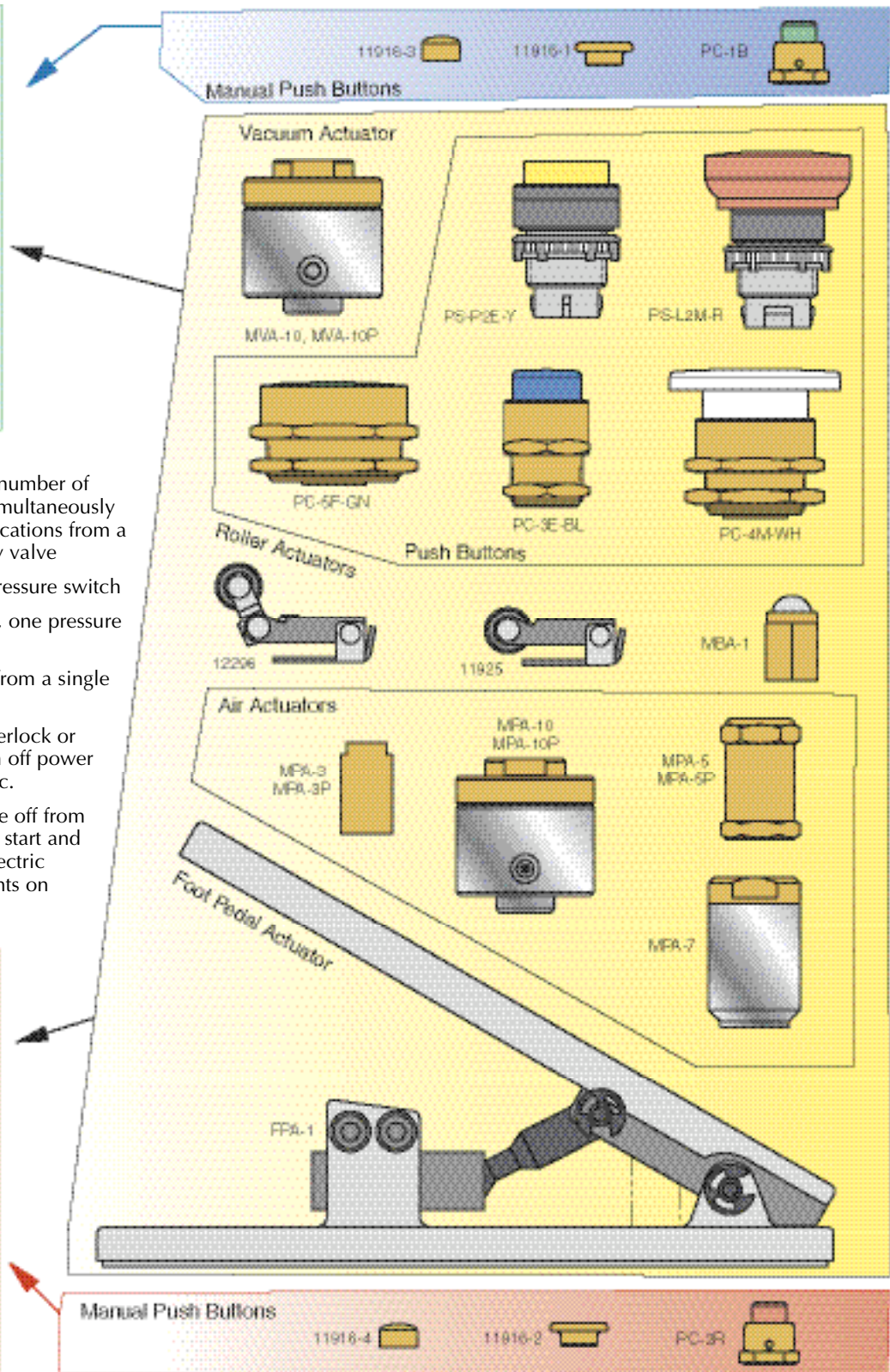
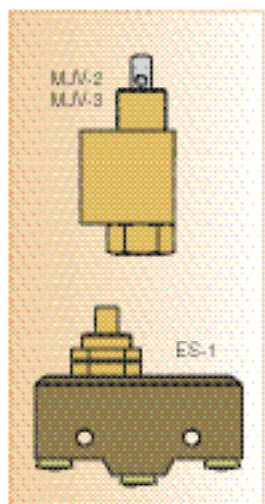
The following valve actuators are compatible with all Clippard MAV, MAVO, MJV, MJVO, ES-1, & FV series valves.

One of the most versatile items in the Clippard line. Permits wide circuit flexibility and allows many control functions to be accomplished pneumatically with less cost, hazards and complexity. Threads onto the tops of our Miniature 2-way, 3-way, and 4-way valves and ES-1 electric switch to provide fast pilot actuation from a pneumatic signal.



MPA Actuators Can:

- Remotely actuate any number of valves and switches simultaneously in different strategic locations from a single miniature 3-way valve
- Make an ES-1 into a pressure switch
- Act as an air relay, i.e., one pressure source to another.
- Operate the MAV-4D from a single impulse.
- Serve as a pressure interlock or safety device, i.e., turn off power when pressure fails, etc.
- Provide an electric take off from a pneumatic source to start and stop power, actuate electric counters, indicator lights on panel boards, etc.

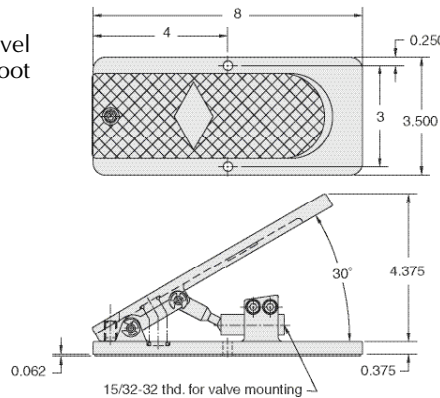




VALVE ACTUATORS

Foot Pedal

Adjustable travel
needle type Foot
Pedal



Part No.	Description
FPA-1	Adjustable Travel Needle Type Foot Pedal

Construction: Sturdy cast aluminum and black oxidized steel

Control Devices: May be fitted with any Clippard 2-, 3- or 4-way valve or MAR-1C pressure controller with a #15/32-32 mounting thread

Mounting: To floor or other structure with two 9/32" mounting holes stroke plunger adjustable to accommodate a variety of valves

"Hands-free" touch-of-toe operation of endless types of automated and semi-automated machinery and equipment, jigs and fixtures, is possible thru use of this sturdy treadle type foot pedal, combined with Clippard miniature valves, plunger type air pressure controls, and electrical switch.

A sliding link mechanism between treadle and mounting sleeve actuates the component, and a set screw at the back of pedal base adjusts treadle travel.

Pedal is spring loaded at approximately 1/2 lb. for return to "off" position.

Note for MBA-1, 11925 & 12296:

When mounting on a valve, a space should be provided between the body and the actuator according to the chart to the right:

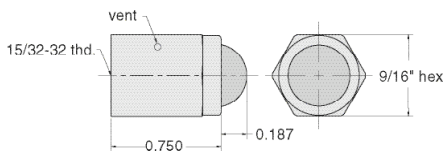
Valve mtg. thd.	MBA-1	11925	12296
0.250 thd length	0.125"	0.062"	0.062"
0.373 thd length	0.218"	0.188"	0.188"

A mounting nut (supplied with valve), mounting bracket or washers should be used to obtain the required spacing.

Ball Cam Actuator



Ball Cam Actuator permits the valves and electrical switch to be operated by mechanical movement depressing the ball from any direction



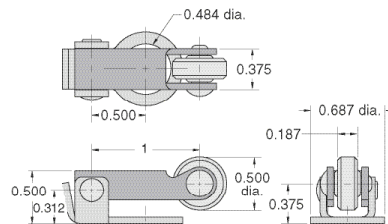
Construction: Body - brass
Ball - stainless steel retained in housing

Operation: Will actuate valve while depressed from any (360°) direction

Mounting: 15/32-32 female to mount to Clippard miniature valves and electric switch

Part No.	Description
MBA-1	Ball Cam Actuator

Roller Cam Actuator



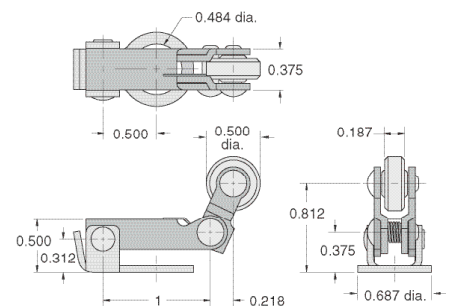
Construction: Stainless steel with nylon roller
Temperature Range: 32° to 230° F

Mounting: 31/64" dia. mounting hole fits 15/32-32 threaded mounting section of valve bodies

Operation: Mounts to valve body, actuates valve when mechanically depressed; valve spring provides return

Part No.	Description
11925	Roller Cam Follower Actuator

Double-Pivoted Actuator



Construction: Stainless steel with nylon roller

Mounting: 31/64" dia. mounting hole fits 15/32-32 threaded mounting section of valve bodies

Operation: Mounts to valve body, actuates valve when depressed by activating cam or linear travel device in one direction only; no actuation on return travel

Part No.	Description
12296	Roller, Double-Pivoted One-Way Cam Follower Actuator

AIR PILOTED VALVE ACTUATORS



MINIMUM PRESSURE REQUIRED (psig)*										
Clippard Valve	Pressure (psig)				Vacuum (in Hg)	Clippard Valve	Pressure (psig)			
	w/MPA-3	w/MPA-5	w/MPA-7	w/MPA-10	w/MVA-10		w/MPA-3	w/MPA-5	w/MPA-7	w/MVA-10
ES-1 Switch	12	4	2	*	*	FV-3	41	15	7.5	4.0
MAV-2 Valve	23	8	4	2.0	4.2	FV-3P	41	15	7.5	4.0
MAV-3 Valve	23	8	4	2.0	4.2	FV-4	41	15	7.5	4.0
MAV-4 Valve	36	11	5.5	3.5	7.2	FV-4P	41	15	7.5	4.0
MJV-4 Valve	36	11	5.5	3.5	7.2	FV-5	41	15	7.5	4.0
MAV-4D Valve	13	4	1.5	1.0	2.0	FV-5P	41	15	7.5	4.0
MJV-4D Valve	13	4	1.5	1.0	2.0	FV-3D	14	5	2.5	1.5
MJV-2 Valve	30	10	5	3.0	6.2	FV-3DP	14	5	2.5	1.5
MJV-3 Valve	30	10	5	3.0	6.2	FV-4D	14	5	2.5	1.5
MAVO-2 Valve	27	9	4.5	2.5	5.2	FV-4DP	14	5	2.5	1.5
MAVO-3 Valve	27	9	4.5	2.5	5.2	FV-5D	14	5	2.5	1.5
MJVO-2 Valve	30	10	5	3.0	6.2	FV-5DP	14	5	2.5	1.5
MJVO-3 Valve	30	10	5	3.0	6.2					

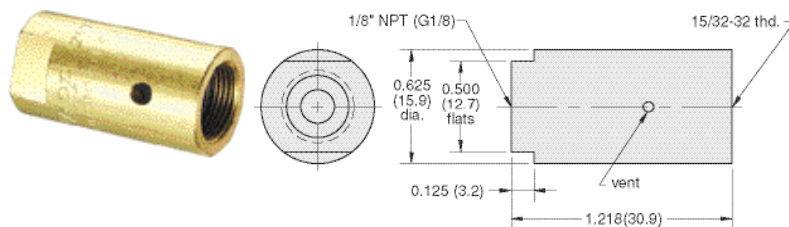
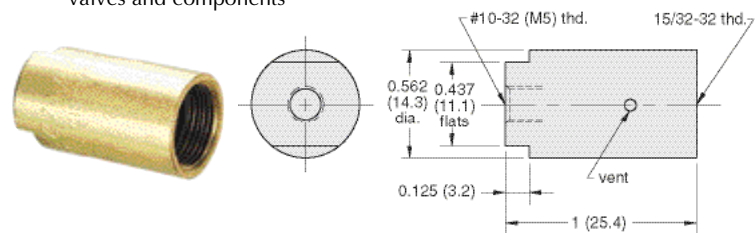
*with 100 psig to valve inlet

Single Acting Air Pilot Actuators

Input Pressure: 250 psig/17 bar max.

Construction: Body - brass; Springs - stainless steel; Seals - Buna N rubber; Piston - Delrin®

Mounting: 15/32-32 female thread to mount to Clippard miniature valves and components

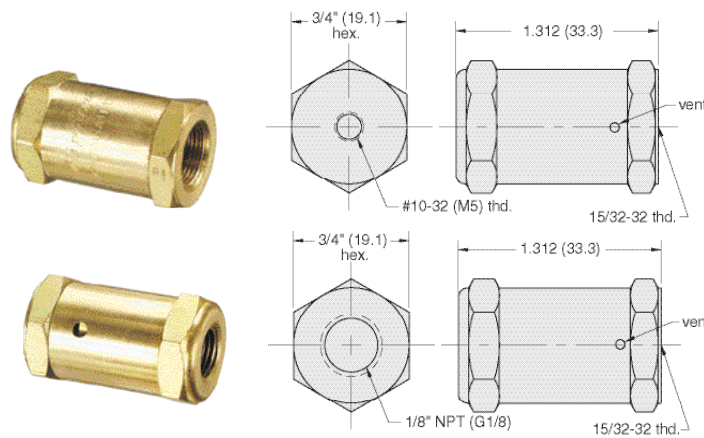


Bore Size: 0.375 (9.5)

Force Factor: 0.1

Part No. Description

MPA-3Single Acting, Spring Return Actuator, #10-32
 MPA-3-M5Single Acting, Spring Return Actuator, M5
 MPA-3PSingle Acting, Spring Return Actuator, 1/8" NPT
 MPA-3-MGSingle Acting, Spring Return Actuator, G1/8

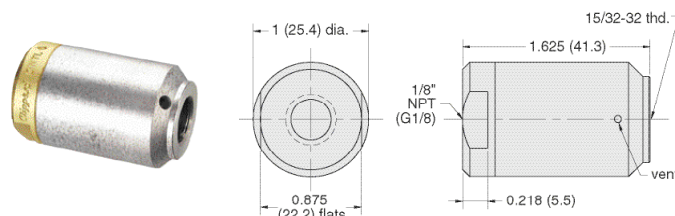


Bore Size: 0.625 (15.9)

Force Factor: 0.3

Part No. Description

MPA-5Single Acting, Spring Return Actuator, #10-32
 MPA-5-M5Single Acting, Spring Return Actuator, M5 Metric
 MPA-5PSingle Acting, Spring Return Actuator, 1/8" NPT
 MPA-5-MGSingle Acting, Spring Return Actuator, G1/8



Bore Size: 0.825" (21.0) dia.

Force Factor: 0.6

Part No. Description

MPA-7Single Acting, Spring Return Actuator, 1/8" NPT
 MPA-7-MGSingle Acting, Spring Return Actuator, G1/8

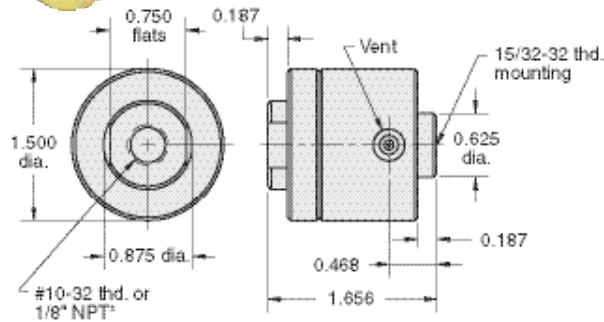


VALVE ACTUATORS

Pilot Actuators



Single Acting Spring Return Pilot Actuator



Bore Size: 1.250" dia.

Input Pressure: 150 psig max.

Mounting: 15/32-32 female thread to mount to Clippard Minimatic® valves and components; no spacers or washers are required when assembled to any Clippard valve; may be used with 15018-2 mounting bracket

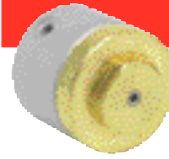
Force Factor: 1.2

Part No.	Description
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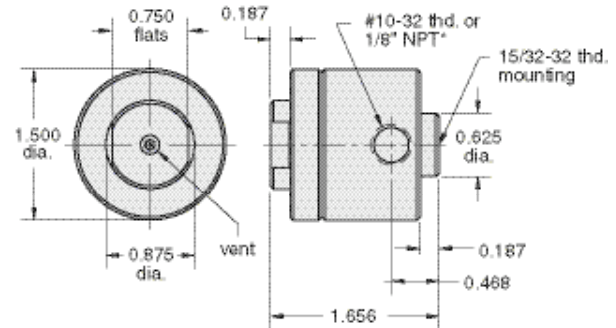
MPA-10	...Single Acting, Spring Return Actuator, #10-32
--------	--

MPA-10P	...Single Acting, Spring Return Actuator, 1/8" NPT
---------	--

Vacuum Actuators



Single Acting Spring Return Vacuum Actuator



Input Pressure: 30 in. Hg vacuum

Mounting: 15/32-32 female thread to mount to Clippard Minimatic® valves and components; no spacers or washers are required when assembled to any Clippard valve; may be used with 15018-2 mounting bracket

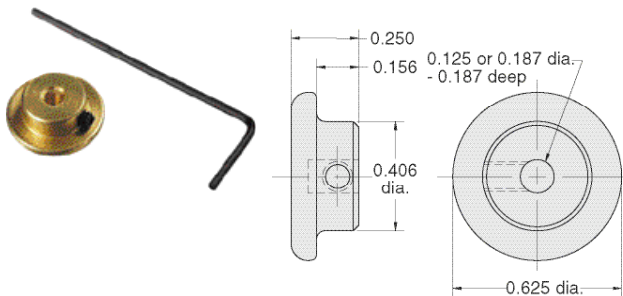
Part No.	Description
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MVA-10	...Single Acting, Spring Vacuum Actuator, #10-32
--------	--

MVA-10P	...Single Acting, Spring Vacuum Actuator, 1/8" NPT
---------	--

Push Button Actuators, 5/8"

Round Solid Brass 5/8" dia. Push Button



Use: Mounts directly on valve stem for manual operation of valve; prevents overtravel of valve stem by providing a positive stop

Mounting: 1/8" or 3/16" dia. mounting hole fits valve stems; locks in place by set screw (Allen wrench furnished)

Note: Individually packaged or bulk quantities available

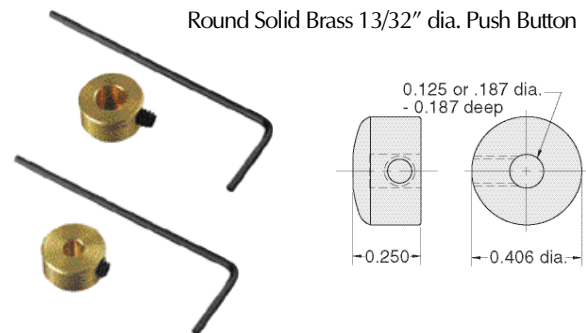
Part No.	Description
----------	-------------

11916-1	...5/8" Brass Push Button, 1/8" Stem
---------	--------------------------------------

11916-2	...5/8" Brass Push Button, 3/16" Stem
---------	---------------------------------------

Push Button Actuators, 13/32"

Round Solid Brass 13/32" dia. Push Button



Use: Mounts directly on valve stem for manual operation of valve; small size permits attachment to valve before valve is mounted through 15/32" dia. hole; prevents overtravel of valve stem by providing a positive stop

Mounting: 1/8" or 3/16" dia. mounting hole fits valve stems; locks in place by set screw (Allen wrench furnished)

Note: Individually packaged or bulk quantities available

Part No.	Description
----------	-------------

11916-3	...13/32" Brass Push Button, 1/8" Stem
---------	--

11916-4	...13/32" Brass Push Button, 3/16" Stem
---------	---

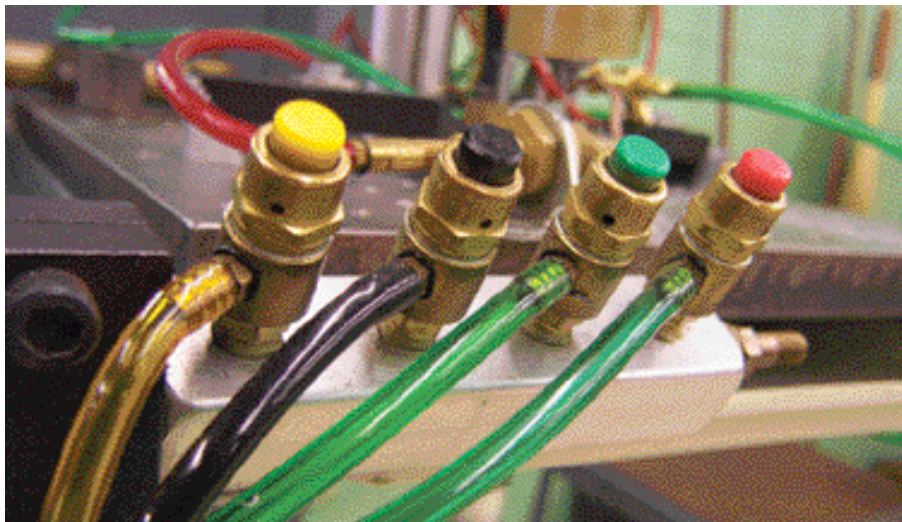
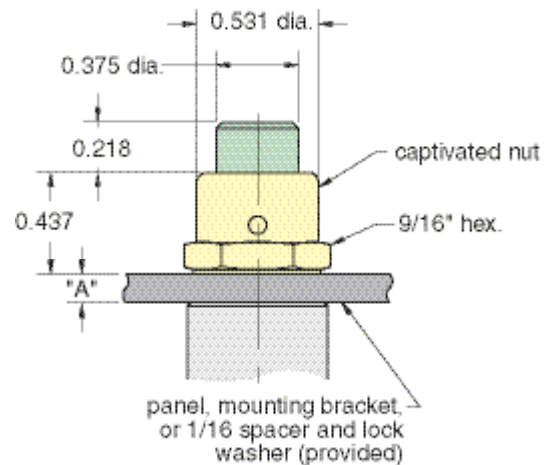
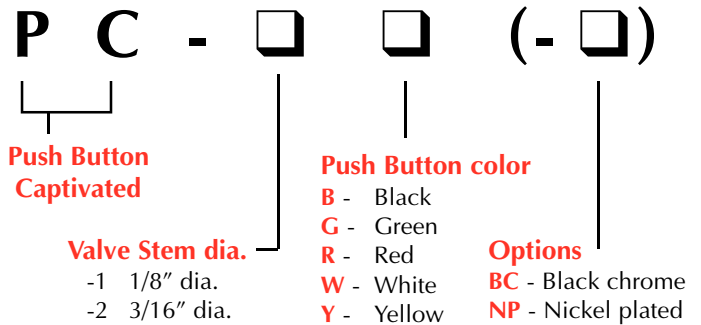
Captivated Push Buttons

Clippard also offers the captivated push button for use with a large variety of stem operated valves. Captivated push buttons are sold as kits, adaptable to either 1/8" diameter stems or 3/16" diameter stems. Each kit includes a colored acetyl push button, brass housing nut, 1/16" brass spacer, and lock washer for assembly. The standard furnished mounting nut has a bright chrome finish. Black chrome or nickel-plated finishes are also available by adding the suffix -BC or -NP to the part number.

Captivated push buttons can be used on individual stem operated valves or in panel mount application by omitting the 1/16" brass spacer. These push buttons are available in a variety of colors, allowing you to color code, or easily differentiate between valves when designing control systems. The design of these push buttons allows maximum actuation of the valve with no overtravel or side load to the valve stem.

This assures superior performance and long life.

Captivated push buttons are commonly used as limit valves in conjunction with pneumatic cylinders, slides, and any variety of mechanical actuators. The rugged design coupled with precise actuation of stem operated valves make it perfect for applications where repetitive cycling of the valve is necessary. Designed to work with Clippard MAV, MJV, and FV series, these push buttons integrate easily into Minimate® systems, providing optimal quality and efficiency in Miniature pneumatic control.



Spacing Required for Proper Actuation of Push Button

Valve	"A" Dim.
MAV-2, MAV-3 MAVO-2, MAVO-3	3/32"
MAV-4, MAV-4D MJV-4, MJV-4D	5/32"
MJV-2, MJV-3 MJVO-2, MJVO-3 FV-3, FV-4, FV-5	7/32"

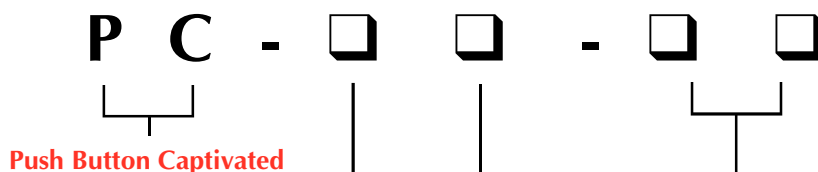
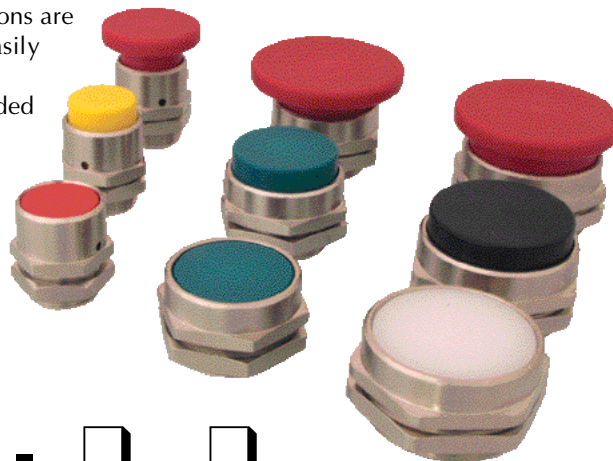


PUSH BUTTON ACTUATORS

Heavy-Duty Push Button Actuators

Heavy Duty Push Button Actuators can be used on individual stem operated valves or in panel mounting applications. These push buttons are available in a variety of colors, allowing you to color code, or easily differentiate between valves when designing control systems. They feature a built-in spring so the button always returns to the extended position when released with no additional load on the valve.

The design of these push buttons allows complete actuation of the valve with no overtravel or side load to the valve assuring superior performance and long life.



Push Button Captivated

Size Mounting Thread

3 - 5/8-32 thd. (16 mm)
4 - 7/8-32 thd. (22 mm)
5 - 1 3/16-28 thd. (30 mm)

Button Style

E - Extended
F - Flush
M - Mushroom

Push Button color

BK - Black **WH** - White **RD** - Red
GN - Green **YL** - Yellow **BL** - Blue
OR - Orange **GR** - Grey

Note: Non-standard colors available; consult factory



Part No. **Description**
PC-3E-(color) . . . 5/8-32 Thd., Extended
(specify color)



Part No. **Description**
PC-4E-(color) . . . 7/8-32 Thd., Extended
(specify color)



Part No. **Description**
PC-5E-(color) . . . 5/8-32 Thd., Extended
(specify color)



Part No. **Description**
PC-3F-(color) . . . 5/8-32 Thd., Flush
(specify color)



Part No. **Description**
PC-4F-(color) . . . 7/8-32 Thd., Flush
(specify color)



Part No. **Description**
PC-5F-(color) . . . 5/8-32 Thd., Flush
(specify color)



Part No. **Description**
PC-3M-(color) . . . 5/8-32 Thd., Mushroom
(specify color)



Part No. **Description**
PC-4M-(color) . . . 7/8-32 Thd., Mushroom
(specify color)



Part No. **Description**
PC-5M-(color) . . . 5/8-32 Thd., Mushroom
(specify color)

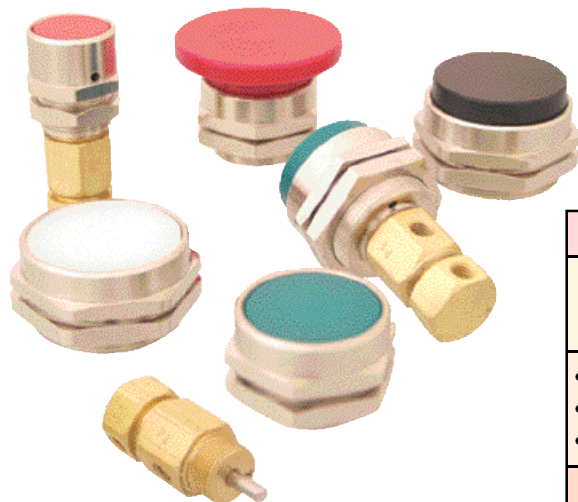
PUSH BUTTON ACTUATORS



Features

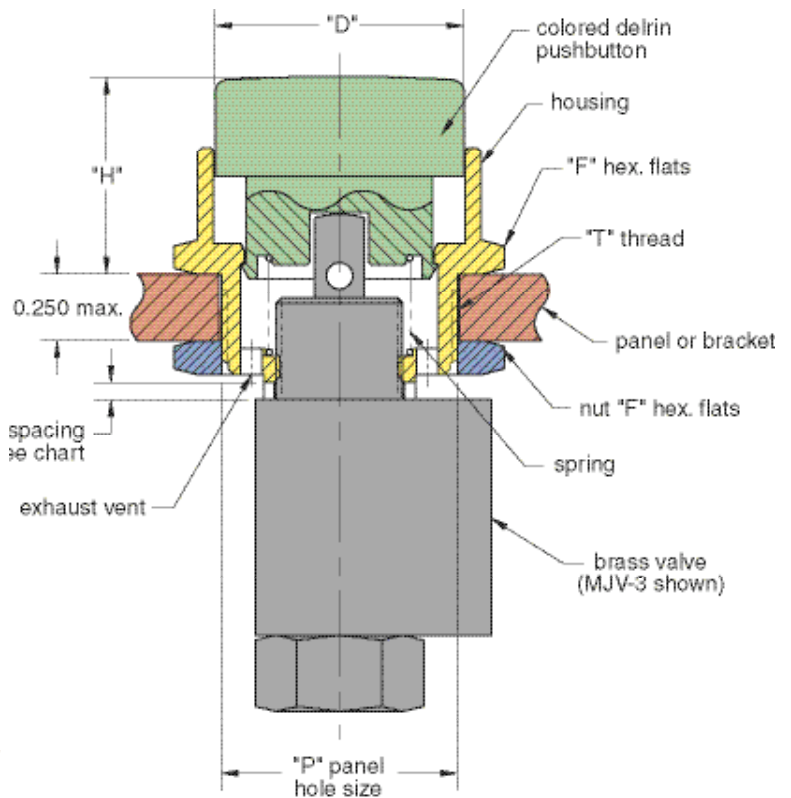
- Assembles directly to the valve; no adapters required
- Ideal for mounting on panels or brackets, up to 1/4" thick panel
- Self-contained assembly; no loose parts
- Stainless steel spring returns button to extended position with no added load to the valve stem
- Three sizes: 16 mm (5/8" dia.), 22 mm (7/8" dia.) and 30 mm (1-3/16" dia.)
- Flush, extended and mushroom style buttons
- Caution: Push buttons are easily depressed. Maintain positive outlook when in use.
- Five bright colors for visibility and operator recognition. Other colors available upon request
- Nickel plated brass housing and nut, molded Delrin® button and stainless steel spring for long life and corrosion resistance
- Protects the valve from overtravel and side load

Different valve models vary in mounting thread length, stem extension and stroke. To accommodate these differences, the chart below lists the recommended spacing ("S") to insure complete valve actuation. Provided with each button is a 1/16" thick spacer ring that may be used in place of a panel or bracket to obtain proper spacing. The lockwasher provided may be used with no significant effect on spacing.



DIMENSIONS

SIZE	MODEL	"D" Dia.	"H" Hgt.	"T" Thd.	"P" +1/32 Panel Hole -0	"F" Hex Flats
5/8-32 (16 mm) mtg. thd.	PC-3E-□□	0.625"	0.734"			
	PC-3F-□□	0.625"	0.500"	5/8-32	5/8" dia.	3/4"
	PC-3M-□□	1.165"	0.906"			
7/8-32 (22 mm) mtg. thd.	PC-4E-□□	0.925"	0.734"			
	PC-4F-□□	0.925"	0.500"	7/8-32	7/8" dia.	1-1/16"
	PC-4M-□□	1.500"	0.906"			
1 3/16-32 (30 mm) mtg. thd.	PC-5E-□□	1.165"	0.734"			
	PC-5F-□□	1.165"	0.500"	1 3/16-32	1-3/16" dia.	1-5/16"
	PC-5M-□□	1.500"	0.906"			



SPACING "S" REQUIRED FOR PROPER VALVE ACTUATION

Valve series	MAV-2 MAV-3	MAVO-2 MAVO-3	MAV-4 MJV-4	MAV-4D MJV-4D	MJV-2,-3 MJVO-2,-3 FV-3, FV-4, FV-5
• Mounting thd.	1/4"		1/4"		3/8"
• Stem extension	5/16"		3/8"		5/16"
• Valve stroke	1/8"		3/16"		1/8"
"S" Minimum	none		none		1/16"
Maximum	1/16"		1/16"		1/8"



PUSH BUTTON ACTUATORS

Minimatic® Actuators

Easily actuated, clearly identifiable panel controls are the hallmark of a professional control system.

Whether the system is a single valve machine control . . . or an operating console for controlling complex pneumatic systems . . . you will find the actuator you require.

The line includes round push buttons, in flush, extended, and mushroom styles. Also included are key locking controls, and twist actuators. An electric switch is also available where a combination of electric and pneumatic switching is desired in a single panel.

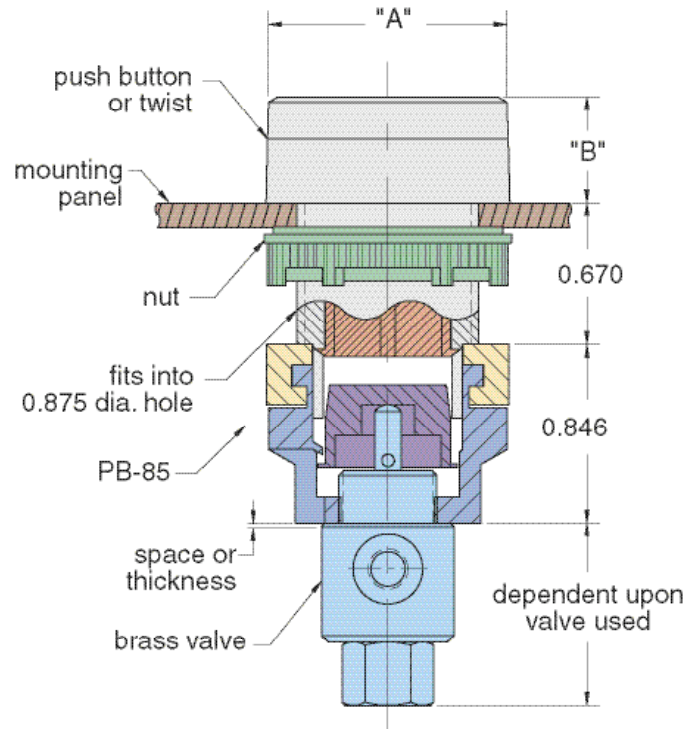
Dimensions

Size 22			Size 30		
Model	"A"	"B"	Model	"A"	"B"
PS-P2F	1.156"	0.492"	PL-P2F	1.440"	0.550"
PS-P2E	1.156"	0.736"	PL-P2E	1.440"	0.960"
PS-P2M	1.575"	0.965"	PL-P2M	1.575"	1.043"
PS-L3M	1.575"	0.965"	PL-L3M	1.575"	1.043"
PS-P4K	1.156"	2.320"	PL-P4K	1.440"	2.280"
PS-L4M	1.575"	2.320"	PL-L4M	1.575"	2.280"
PS-T2T	1.156"	1.043"	PL-T2T	1.440"	1.403"
PS-T3T	1.156"	1.043"	PL-T3T	1.440"	1.043"
PS-T3K	1.156"	2.320"	PL-T3K	1.440"	2.280"

Actuator Mounting Chart

The following chart gives the necessary spacing required between the shoulder of the valve and the base of the adapter.

Valves	PB-85
MAV-2, -2P, -2R, -3R, -3, -3P MAVO-2, -3	None
MJV-2, -3 MJVO-2, -3	1/8"
MAV-4, -4D MJV-4, -4D	None
ES-1	None
FV-3, -3P, -3D, -3DP FV-4, -4P, -4D, -4DP FV-5, -5P, -5D, -5DP	1/8"



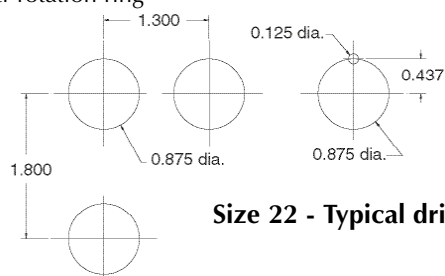
Manual Actuator Features

- Attractive and rugged: precision molded ABS plastic
- Two sizes: 30 mm (1 13/64" dia.) in 20 models
22 mm (7/8" dia.) in 20 models
- 4 bright colors for visibility and operator recognition
- Flush, extended, and mushroom styles
- Custom adapter mates manual actuator with 26 different Clippard 2-, 3-, and 4-way valves. Valve and adapter slide on and lock onto actuator in seconds. Easily removed.
- Special wrench fits both sizes, speeds assembly
- Actuators may be mounted or dismounted in panel independent of valve and adapter
- 19 legend plates available plus blank plates in each size
- Valve and adapter may be locked onto actuator in any of four positions to ease installation inside panel
- Anti-rotation rings available for secure mounting
- Key lockable push buttons for security and/or safety

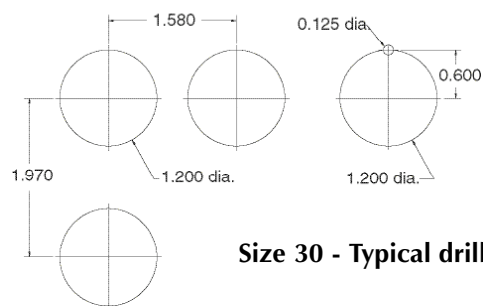
Legend Text	22 Size Part #	33 Size Part #
Blank	PS-01	PL-01
Start	PS-02	PL-02
Stop (red)	PS-03	PL-03
Forward	PS-04	PL-04
Reverse	PS-05	PL-05
Fast	PS-06	PL-06
Slow	PS-07	PL-07
On	PS-08	PL-08
Off (red)	PS-09	PL-09
Reset	PS-10	PL-10
Raise	PS-11	PL-11
Lower	PS-12	PL-12
Emergency Stop (red)	PS-13	PL-13
Run / Jog	PS-31	PL-31
Auto / Hand	PS-32	PL-32
Forward / Reverse	PS-33	PL-33
Fast / Slow	PS-34	PL-34
Open / Close	PS-35	PL-35
Up / Down	PS-36	PL-36
Off / On	PS-37	PL-37

Mounting Clippard Manual Actuators

These drill plans are for units fitted with optional anti-rotation ring



Size 22 - Typical drill plan



Size 30 - Typical drill plan

Legend Plates

Plastic legend plate, two sizes, with a black field and white inscription (red as noted). Inscription plates are interchangeable in both sizes.



Accessories for Manual Actuators

Mounting Wrench

Fits both 22 Size and 30 Size manual actuators.

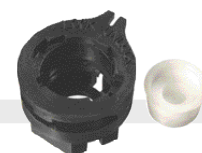
Part No.	Description
PB-60	Mounting Wrench



Valve Adapter

Adapts all manual actuators to any Clippard standard 2-, 3-, or 4-way brass valve. Made of ZYTEL® ST-901 Supertough Nylon.

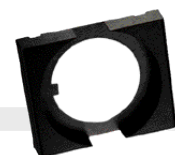
Part No.	Description
PB-85	Valve Adapter



Square Bezel

Converts any 22 Size actuator to a square actuator.

Part No.	Description
PS-65	Square Bezel



Replacement Mounting Nut

Mounting nut that holds manual actuators to panel. Included with manual actuators. 22 Size only.

Part No.	Description
PS-55	Replacement Mounting Nut



Anti-Rotation Ring

Holds push button in one position. Included with all twist manual actuators.

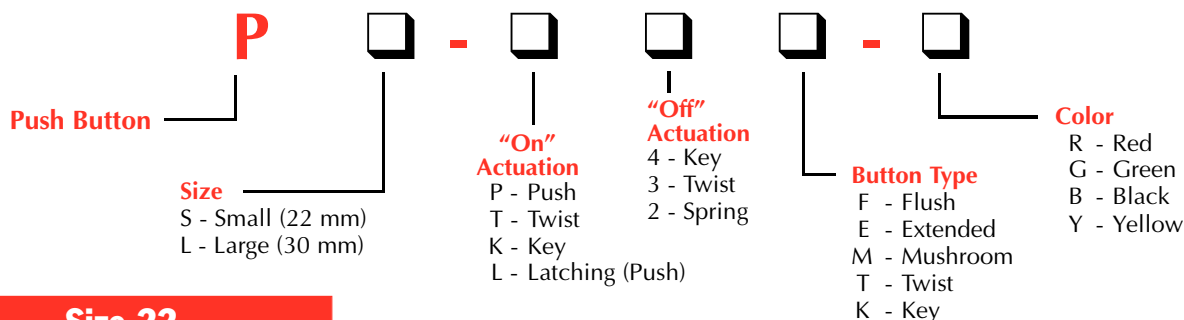
Part No.	Description
PS-50	Anti-Rotation Ring, 22 mm
PL-50	Anti-Rotation Ring, 30 mm





PUSH BUTTON ACTUATORS

Manual Actuators



Size 22



Flush Push Button.
Manual Push "In".
Spring Return.

Part No.	Description
PS-P2F-RRed	
PS-P2F-GGreen	
PS-P2F-BBlack	
PS-P2F-YYellow	



Extended Push Button.
Manual Push "In".
Spring Return.

Part No.	Description
PS-P2E-RRed	
PS-P2E-GGreen	
PS-P2E-BBlack	
PS-P2E-YYellow	



Manual Push Mushroom. Manual Push "In". Spring Return.

Part No.	Description
PS-P2M-RRed	
PS-P2M-GGreen	
PS-P2M-BBlack	



Automatic Push/Turn Mushroom. Manual push "In" Latches "In". Turn clockwise to unlatch. Spring return.

Part No.	Description
PS-L3M-RRed	
PS-L3M-GGreen	
PS-L3M-BBlack	



Push Key Push Button.
Manual push "In". Spring return. Turn key counter-clockwise to lock "Out"; clockwise to unlock. Key withdrawable locked or unlocked. Black only.

Part No.	Description
PS-P4K-BBlack	



Push Key Mushroom.
Manual push "In". Automatic latches "In". Turn key clockwise to release. Spring return. Key withdrawable "Out" position only. Red only.

Part No.	Description
PS-L4M-RRed	



Spring Return Twist 45°.
Turn clockwise and hold for "In". Release for spring return. Black only.

Part No.	Description
PS-T2T-BBlack	



Maintained Twist 90°.
Turn clockwise to latch "In". Turn counterclockwise to release. Black only.

Part No.	Description
PS-T3T-BBlack	



Key Twist 90° Maintained.
(PS-T3K-B) Turn key clockwise to latch "In". Turn key counterclockwise to release. Key withdrawable in both positions. Black only.

(PS-K3K-B) Same as PS-T3K-B except key is withdrawable in "Out" position only.

Part No.	Description
PS-T3K-BBlack	
PS-K3K-BBlack	

PUSH BUTTON ACTUATORS



Size 30



Flush Push Button.
Manual push "In".
Spring return.



Extended Push Button.
Manual push "In". Spring
return.

Part No. Description

PL-P2F-R . . .Red
PL-P2F-G . . .Green
PL-P2F-B . . .Black
PL-P2F-Y . . .Yellow

Part No. Description

PL-P2E-R . . .Red
PL-P2E-G . . .Green
PL-P2E-B . . .Black
PL-P2E-Y . . .Yellow



**Key Twist 90°
Maintained.** (PL-
T3K-B) Turn key
clockwise to latch
"In". Turn key
counterclockwise
to release. Key
only.

with-drawable in both positions. Black
only.

(PL-K3K-B) Same as PL-T3K-B except key is
withdrawable in "Out" position only.

Part No. Description

PL-T3K-B . . .Black
PL-K3K-B . . .Black



**Automatic Push/Turn
Mushroom.** Manual push
"In". Latches "In". Turn
clockwise to unlatch.
Spring return.

Part No. Description

PL-L3M-R . . .Red
PL-L3M-G . . .Green
PL-L3M-B . . .Black



**Push Key Push
Button.**

Manual push
"In". Spring
return. Turn
key counter-
clockwise to

lock "Out"; clockwise to unlock. Key
withdrawable locked or unlocked.
Black only.

Part No. Description

PL-P4K-B . . .Black



**Push Key
Mushroom.**
Manual push
"In". Automatic
latches "In".
Turn key clock-

wise to release. Spring return. Key with-
drawable "Out" position only. Red only.

Part No. Description

PL-L4M-R . . .Red



**Spring Return Twist
45°.** Turn clockwise
and hold for "In".
Release for spring
return. Black only.



Maintained Twist 90°.
Turn clockwise to latch
"In". Turn counterclock-
wise to release. Black
only.



**Manual Push
Mushroom.** Manual
push "In". Spring
return.

Part No. Description

PL-T2T-B . . .Black

Part No. Description

PL-T3T-B . . .Black

Part No. Description

PL-P2M-R . . .Red
PL-P2M-G . . .Green
PL-P2M-B . . .Black



ELECTRIC & PNEUMATIC SWITCHES

Features

- Switch modules available normally open or normally closed
- Wide range of mounting configurations available
- Actuators with or without an air pressure indicator
- Standard manual override or Pneumatic Actuation Only (Manual Override Blocked)
- Interfaces pneumatic signals with manual signals via the same devices, saving space and cost, adding safety and convenience
- 4 bright colors for visibility and operator recognition
- Can actuate as many as 12 switches



Medium: Air

Operating Pressure: Approx. 10 psig plus 1.5 psig per switch

Max. Operating Pressure: 150 psig

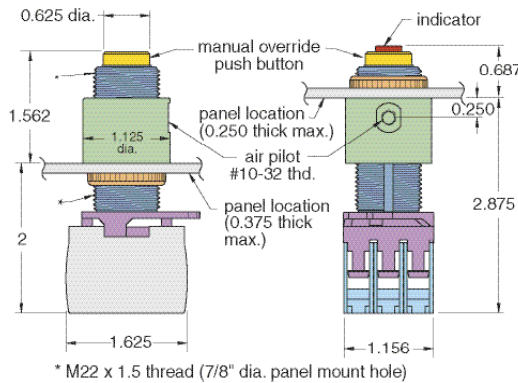
Construction:

Activator Housing - Nickel-plated brass, Anodized aluminum, Nylon

Internal Parts - Delrin®

Seals - Buna-N rubber

Mounting - M22 x 1.5 male thread for panel mount through 7/8" dia. hole



Part No.

Description

Push Buttons

Push Button Color

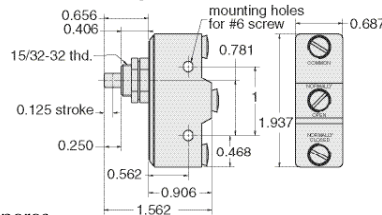
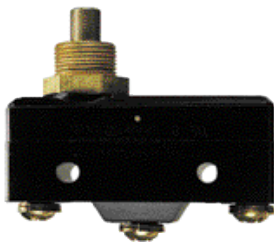
AS-BN	.....Manual Override	.....Black
AS-GN	.....Manual Override	.....Green
AS-RN	.....Manual Override	.....Red
AS-YN	.....Manual Override	.....Yellow
AS-BN-A	.....Air Actuation Only	.....Black
AS-GN-A	.....Air Actuation Only	.....Green
AS-RN-A	.....Air Actuation Only	.....Red
AS-YN-A	.....Air Actuation Only	.....Yellow

Push Buttons with Indicator

Indicator Color

AS-BG	.....Manual Override	.....Black
AS-BR	.....Manual Override	.....Green
AS-BY	.....Manual Override	.....Red
AS-BW	.....Manual Override	.....Yellow
AS-BG-A	.....Air Actuation Only	.....Green
AS-BR-A	.....Air Actuation Only	.....Red
AS-BY-A	.....Air Actuation Only	.....Yellow
AS-BW-A	.....Air Actuation Only	.....White

Single Pole Electrical Switch



Stem Travel: 1/8"

Rating A.C.: 120 volts - 15 amperes
240 volts - 15 amperes
480 volts - 15 amperes

Rating D.C.: 125 volts - 0.5 amperes
250 volts - 0.25 amperes

Mounting: 15/32-32 thread; nut and lockwashers furnished, also two 0.140" dia. mounting holes in body

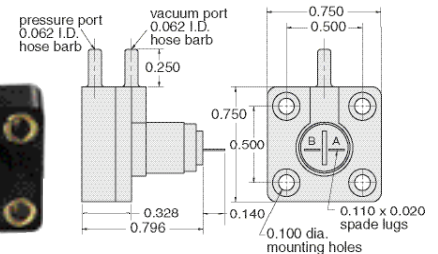
Approvals: UL and CE

Part No.

Description

ES-1	.....Single Pole, Double Throw Snap-Action Electrical Switch
ES-1-GP	.....Single Pole, Double Throw Snap-Action Electrical Switch with Gold-Plated Contact
15601	.....Terminal Cover

Pneumatic Electric Switches



Electrical Rating: 60 ma. AC resistive 40 ma. DC resistive @ 120 volts

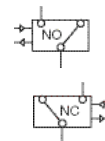
Switching Speed: 125 Hz, normally open

Actuating Pressure: 3" H₂O 10% pressure vacuum, or DP

Maximum Pressure: 8 psig (continuous)

Construction: ABS plastic case gold plated contacts natural rubber diaphragm

Use: for interfacing fluidic or other low pressure air signals with electronic circuitry dual inputs operates on pressure, vacuum, or differential pressure signals



Part No.

Description

5100-3-NO	.....Pneumatic Electric Switch, Normally-Open Contacts
5100-3-NC	.....Pneumatic Electric Switch, Normally-Closed Contacts

Air-2-Electric® Air Switches
and Mounting Clips

The Air-2-Electric system can handle multiple switches; using line voltage, as many as 12 switches can be actuated. Switch modules are available in normally open or normally closed models. Air-2-Electric actuators are available with a number of feature options such as a manual override and an air pressure indicator and in a variety of colors.

Air Switches

AS-01 - Normally Closed

AS-10 - Normally Open



Mounting Clips

The single clip mounts one switch to the pneumatic actuator. The front clip mounts up to three switches. Add side clips to mount up to five switches. For six to twelve switches, add a 2nd row clip to the front clip.

Note: The 2nd row clip will not mount where side clips are attached.

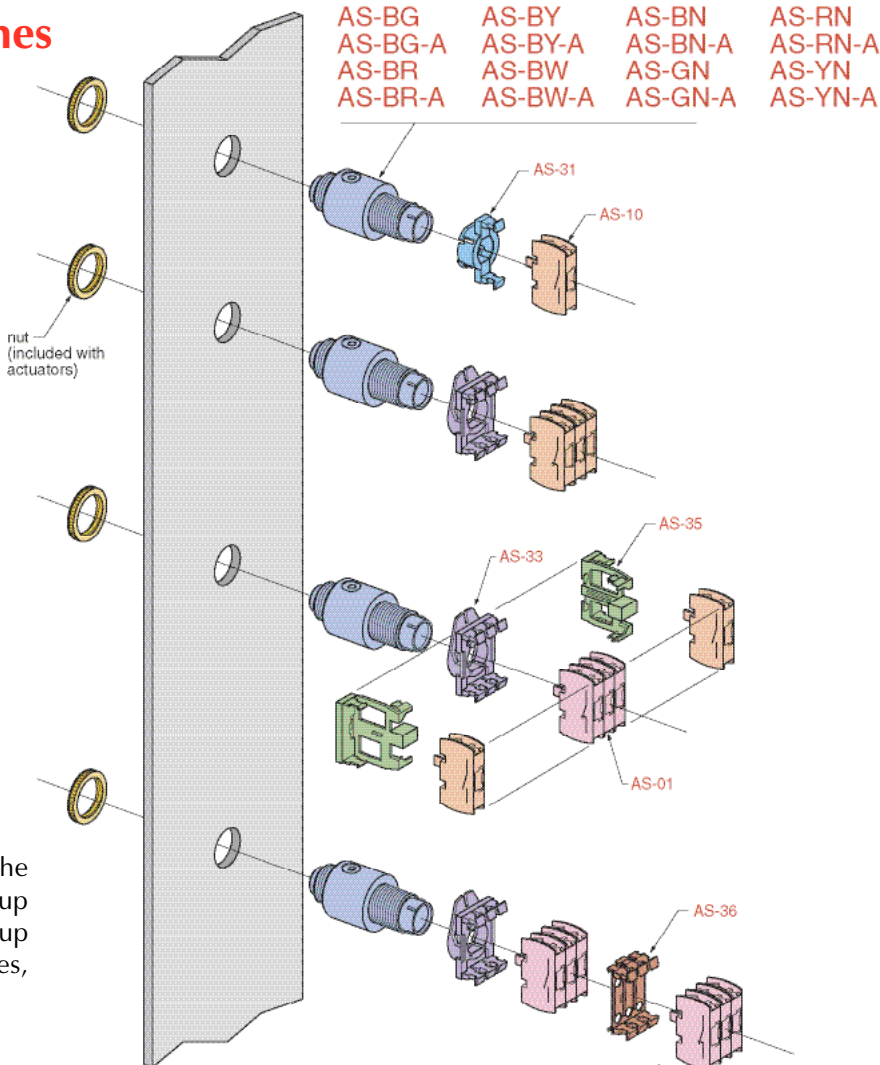


AS-31 - Single Clip

AS-33 - Front Clip

AS-35 - Side Clip

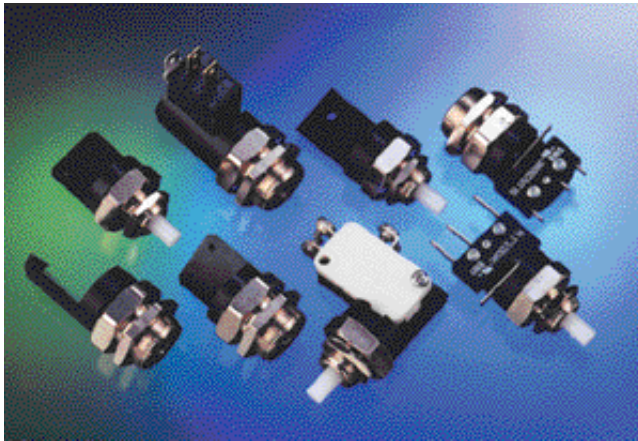
AS-36 - 2nd Row Clip



SWITCH MODULES AS-01 AND AS-10								Electrical and Mechanical Characteristics			
Electrical Performance					Voltage			Motor Horsepower			
AC	nominal Operating Voltage (VAC) (50-60 Hz)		110	220	440	110	Single phase		0.5		
	nominal Operating Current (A)		8	6.5	3.5	220	Single phase		1.0		
DC	nominal Operating Voltage (VDC)		12	24		220/240	3-phase		3.0		
	nominal Operating Current (A)		4	1.5		440/480	3-phase		5.0		
Electrical Life			220 V (50-60 Hz)		Approvals						
Operating Current (A)		6	2								
No. of Operations		1 x 10 ⁶	3 x 10 ⁶								
Mechanical Life			3 x 10 ⁶ cycles		Connection Screw terminals suitable for field wiring # 14-12 AWG						
WARNING Caution should be taken to assure the conformation of all applicable standard codes and installation procedures. Proper design engineering procedures should be used to guard against the accidental actuation of the switches. Manual overrides or other precautionary measures should be considered.											



PRESSURE ACTUATED SWITCHES



Medium: Air

Inlet Pressure: 5 - 150 psig; 0.3 - 10.3 bar

Pilot Port: #10-32, 1/8" NPT, M5

Mounting: External thread and nut for panel, bracket, or bulkhead mounting,

5/8 - 32 pressure actuated
15/32-32 manually operated

Accuracy: Actuation and deactuation pressures listed are nominal values. Each has a tolerance of $\pm 12\%$ or 1 psig whichever is greater



SAS Sub-Miniature Air Switch
MAS Miniature Air Switch

Design Series

Switch Current Rating:

SAS

A 5A @ 125/250 VAC

3A @ 30 VDC/.1A 60 VDC

X no switch

MAS

B 3A @ 125/250 VAC

3A @ 30 VDC

C 10A @ 125/250 VAC

5A @ 50 VDC

X no switch

Switch Terminals:

SAS: 0 no switch

1 110 series Q.C.

MAS: 0 no switch

2 187 series Q.C.

3 screw terminals

Actuation Pressure*

06 6 psig/0.4 bar

20 20 psig/1.4 bar

40 41 psig/ 2.8 bar

65 65 psig/4.5 bar

MN Manual

Deactuation Pressure*

06 5 psig/0.3 bar

20 18 psig/1.2 bar

40 36 psig/2.5 bar

65 58 psig/ 4.0 bar

MN Manual

Inlet Port:

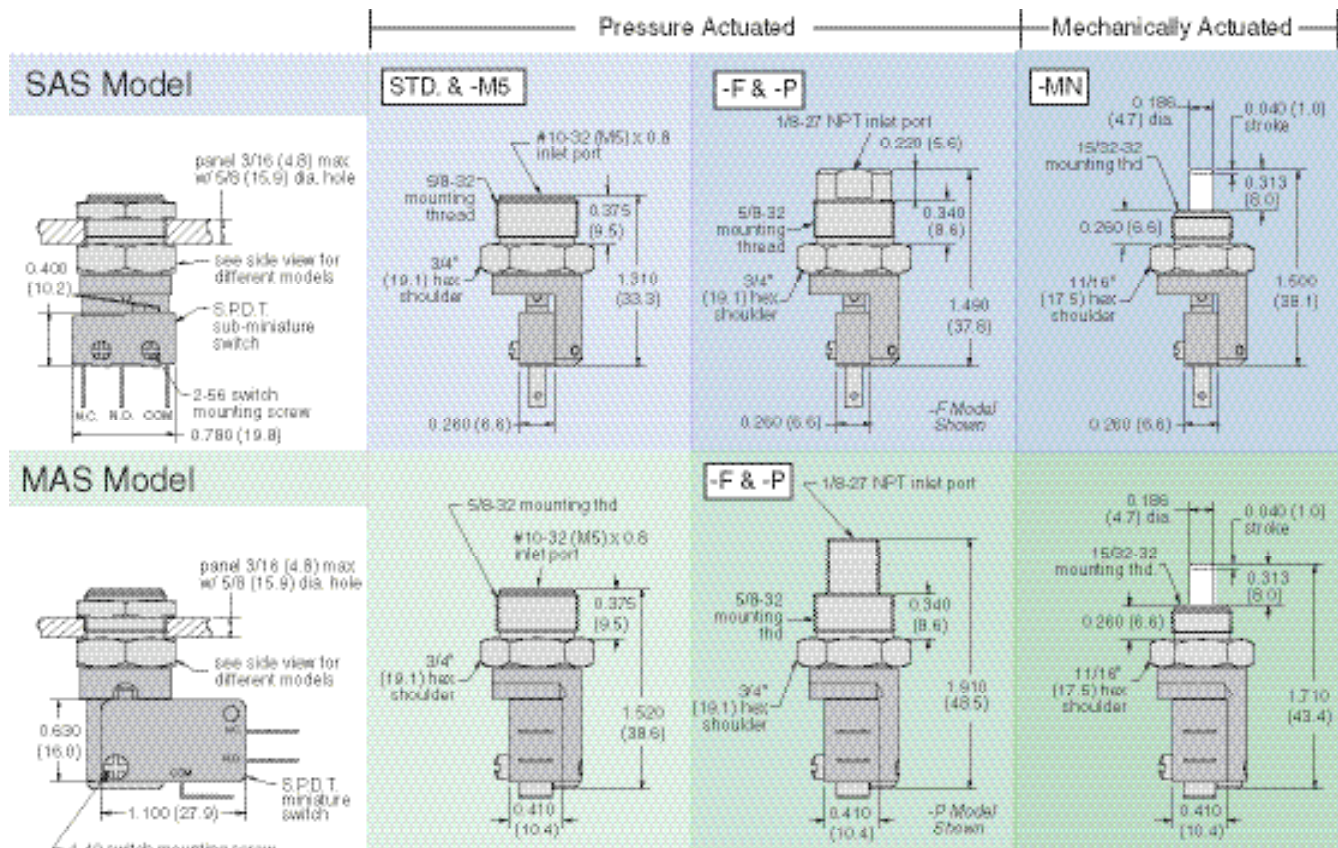
Blank #10-32 thd

F 1/8" NPT female

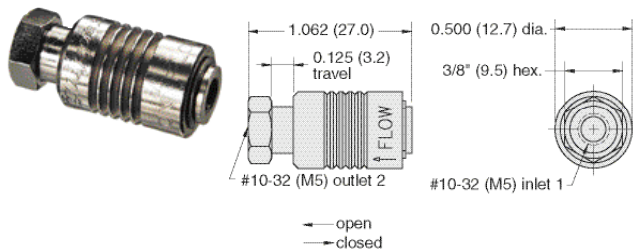
P 1/8" NPT male

M5 M5 x 0.8 thd

*Nominal value $\pm 12\%$ or 1psi, whichever is greater when used with Clippard switches



2 Position 2-Way or 3-Way Sleeve Valves



Medium: Air, Water or Oil

Mounting: Inline or direct to fitting

Stem Travel: 1/8" (3.2)

Material: Nickel plated brass

Input Pressure: 150 psig/10 bar max.

Air Flow: 6.5 SCFM @ 50 psig; 11.8 SCFM @ 100 psig; 280 l/min @ 6 bar

Force to Actuate: Approx. 2.5 lbs

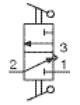
Part No. Description

SLV-22 Position 2-Way Sleeve Valve, #10-32

SLV-2-M5 . . .2 Position 2-Way Sleeve Valve, M5

SLV-32 Position 3-Way Sleeve Valve, #10-32

SLV-3-M5 . . .2 Position 3-Way Sleeve Valve, M5



J-Series Sleeve Valves

Features

- Variety of inlet and outlet porting eliminates fittings
- No cross-over between inlet and exhaust ports
- Corrosion resistant electroless nickel plated brass body
- Anodized aluminum sleeve for corrosion resistance
- Smooth operation, low sliding friction
- Buna-N seals; (Viton® available)

Clippard J-Series sleeve valves with 1/8" NPT and 1/4" NPT ports offer large flow capability with a relatively short stroke in 2-way and 3-way valves, and no cross-over between inlet and exhaust on the 3-way models.

The JSLV-2 2-way valve and the JSLV-3 3-way valve combine high flow with small size. Unlike ball valves, sleeve valves require no space for a handle. They also provide flexibility in pipe connections and are available with either male or female threads or combinations of both.

The JSLV-2 and JSLV-3 valves feature a smooth opening stroke during which inlet air is directed to the outlet. During the closing stroke, in the opposite direction of travel, the outlet is closed from the inlet and in the JSLV-3 version, the outlet is then exhausted to atmosphere without the inlet ever being connected to exhaust.

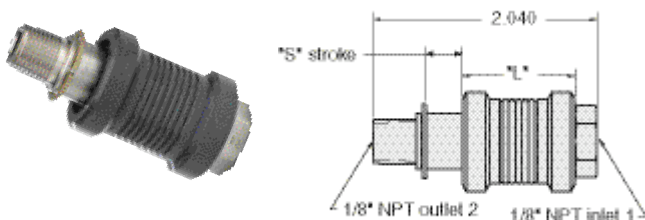
Medium: Air, Water or Oil

Force to Actuate: Approx. 8 lbs

Input Pressure: 150 psig max.

Mounting: Inline or direct to fitting

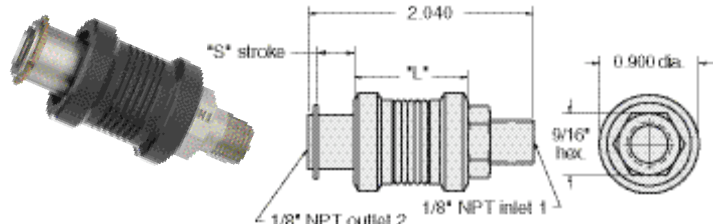
2-Way or 3-Way Sleeve Valves



Air Flow: 1/8" NPT: 43 SCFM @ 100 psig

Order No.	Type	Inlet	"L"	"S"
JSLV-2-F2M2 . . .	2-Way	1/8 Female Pipe	1.155"	0.260"
JSLV-3-F2M2 . . .	3-Way	1/8 Female Pipe	1.030"	0.385"

2-Way or 3-Way Sleeve Valves



Air Flow: 1/8" NPT: 43 SCFM @ 100 psig

Order No.	Type	Inlet	"L"	"S"
JSLV-2-M2F2 . . .	2-Way	1/8 Male Pipe	1.155"	0.260"
JSLV-3-M2F2 . . .	3-Way	1/8 Male Pipe	1.030"	0.385"

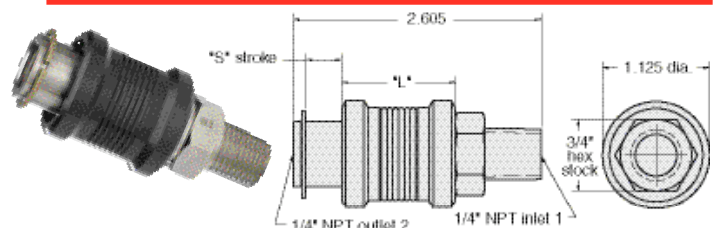
2-Way or 3-Way Sleeve Valves



Air Flow: 1/4" NPT: 70 SCFM @ 100 psig

Order No.	Type	Inlet	"L"	"S"
JSLV-2-F4M4 . . .	2-Way	1/4 Female Pipe	1.325"	0.305"
JSLV-3-F4M4 . . .	3-Way	1/4 Female Pipe	1.190"	0.460"

2-Way or 3-Way Sleeve Valves



Air Flow: 1/4" NPT: 70 SCFM @100 psig

Order No.	Type	Inlet	"L"	"S"
JSLV-2-M4F4 . . .	2-Way	1/4 Male Pipe	1.325"	0.305"
JSLV-3-M4F4 . . .	3-Way	1/4 Male Pipe	1.190"	0.460"



MINIATURE PRESSURE REGULATORS

Miniature Pressure Regulators

Regulators are offered in either self-relieving or non-relieving versions. The self-relieving design maintains a constant pressure output even when downstream conditions change. As downstream pressure increases due to reduced flow, this increased pressure overcomes the regulator piston and the pressure is relieved to atmosphere to maintain a constant output pressure.

The non-relieving regulator does not automatically compensate for changes in downstream flow or pressure. There is no vent to atmosphere, as in a relieving type regulator, and the output pressure will increase due to a downstream flow reduction.

- Panel mounting permits unit to be located with other controls on a control console or panel board for pilot operation of larger regulators or for remote control; mounting nuts and lockwashers furnished
- Small, compact - ideal for mounting on individual jigs and fixtures as well as in control circuits

Medium: Air

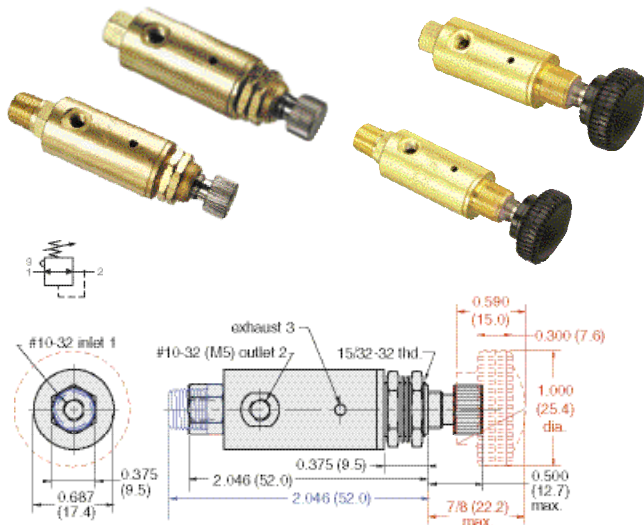
Materials: Brass body, Buna-N seals, stainless steel stem and spring

Air Flow: 3 SCFM @ 50 psig; 5 SCFM @ 100 psig; 120 l/min. @ 6 bar

Mounting: 15/32-32 thread. Nuts and lockwashers furnished

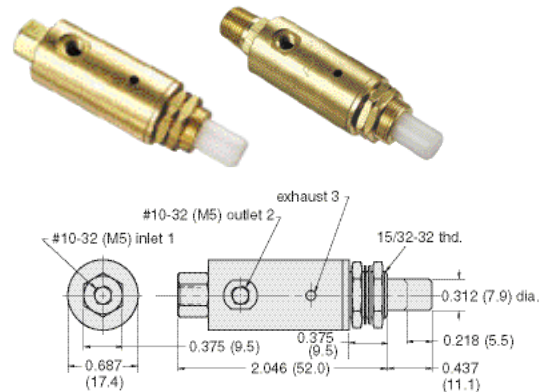
Adjustment: By means of knurled knob with micro-adjustment (40 pitch thd.); pressure may be adjusted

Adjustable Pressure Regulators



Range (psig/bar)	#10-32	Knob	1/8" NPT	Non-Relieving	M5
0-20/1.4	MAR-1-2	MAR-1K-2	MAR-1P-2	MAR-1NR-2	MAR-1-2-M5
0-30/2.1	MAR-1-3	MAR-1K-3	MAR-1P-3	MAR-1NR-3	MAR-1-3-M5
0-40/2.8	MAR-1-4	MAR-1K-4	MAR-1P-4	MAR-1NR-4	MAR-1-4-M5
0-50/3.4	MAR-1-5	MAR-1K-5	MAR-1P-5	MAR-1NR-5	MAR-1-5-M5
0-60/4.1	MAR-1-6	MAR-1K-6	MAR-1P-6	MAR-1NR-6	MAR-1-6-M5
0-70/4.8	MAR-1-7	MAR-1K-7	MAR-1P-7	MAR-1NR-7	MAR-1-7-M5
0-100/6.9	MAR-1	MAR-1K	MAR-1P	MAR-1NR	MAR-1-M5

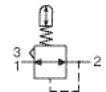
Plunger-Type Pressure Regulators



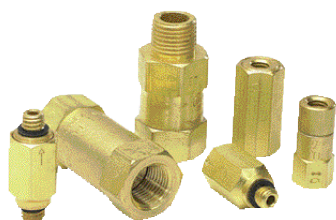
Plunger Travel: 7/32"

Force For Full Stem Travel: 25 lb nominal

Operation: As plunger is depressed pressure increases proportionally to the travel; when plunger is released the input is closed and the output pressure is exhausted to atmosphere



Range (psig/bar)	#10-32	1/8" NPT	M5
0-20/1.4	MAR-1C-2	MAR-1CP-2	MAR-1C-2-M5
0-30/2.1	MAR-1C-3	MAR-1CP-3	MAR-1C-3-M5
0-40/2.8	MAR-1C-4	MAR-1CP-4	MAR-1C-4-M5
0-50/3.4	MAR-1C-5	MAR-1CP-5	MAR-1C-5-M5
0-60/4.1	MAR-1C-6	MAR-1CP-6	MAR-1C-6-M5
0-70/4.8	MAR-1C-7	MAR-1CP-7	MAR-1C-7-M5
0-100/6.9	MAR-1C	MAR-1CP	MAR-1C-M5



Three varieties of check valves are offered by Clippard. Each permits flow in one direction only. All have bright-dipped brass bodies that provide in-line mounting, Buna-N seals and stainless steel springs as standard. The MCV-2 has #10-32 (M5) ports and a “duckbill” seal. The MCV-1 series has #10-32 (M5) ports and a brass poppet. The MJCV-1 series has 1/8" NPT (G1/8) ports and a Delrin® poppet.

Materials: Brass body, Buna-N seals, stainless steel stem and spring

Medium: Air or Hydraulic

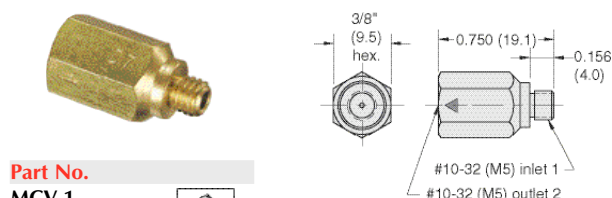
Input Pressure: 300 psig/21 bar max.

Pressure To Open: Cracks at approx. 1/2 psig

Mounting: Direct or inline

Flow Direction: Arrow on valve body indicates direction of flow

Note: Not intended for pressure relief

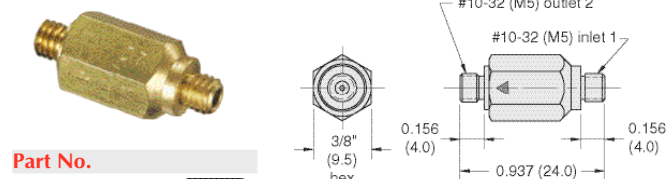


Part No.

MCV-1

MCV-1-M5

Air Flow: 6.5 SCFM @ 50 psig; 11.5 SCFM @ 100 psig; 280 l/min @ 6 bar

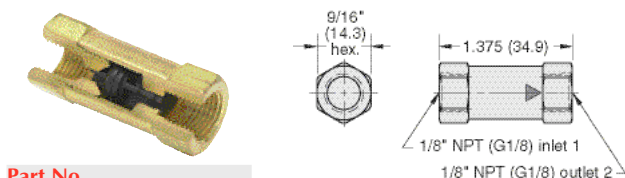


Part No.

MCV-1A

MCV-1A-M5

Air Flow: 6.5 SCFM @ 50 psig; 11.5 SCFM @ 100 psig; 280 l/min @ 6 bar

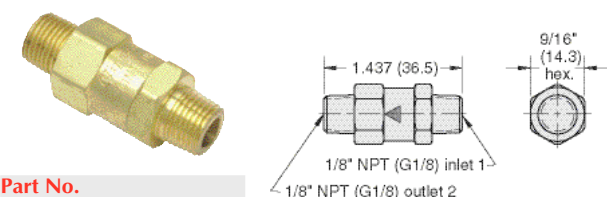


Part No.

MJCV-1

MJCV-1-MG

Air Flow: 20 SCFM @ 50 psig; 36 SCFM @ 100 psig; 580 l/min @ 6 bar

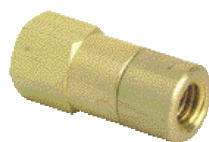


Part No.

MJCV-1A

MJCV-1A-MG

Air Flow: 20 SCFM @ 50 psig; 36 SCFM @ 100 psig; 580 l/min @ 6 bar



Medium: Air

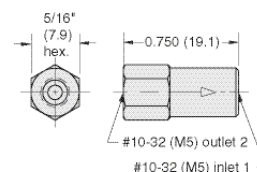
Input Pressure: 100 psig/21 bar max.

Air Flow: 1 SCFM @ 50 psig;
28 l/min @ 3.5 bar

Part No.

MCV-2

MCV-2-M5



Pressure To Crack: 1 psig

Pressure To Fully Open: 2.5



Part No.

MCV-1AB

MCV-1AB-M5

Air Flow: 6.5 SCFM @ 50 psig; 11.5 SCFM @ 100 psig; 280 l/min @ 6 bar



Part No.

MCV-1BB

MCV-1BB-M5

Air Flow: 6.5 SCFM @ 50 psig; 11.5 SCFM @ 100 psig; 280 l/min @ 6 bar

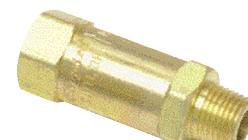


Part No.

MJCV-1AB

MJCV-1AB-MG

Air Flow: 20 SCFM @ 50 psig; 36 SCFM @ 100 psig; 580 l/min @ 6 bar

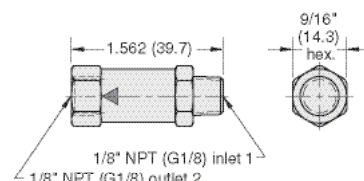
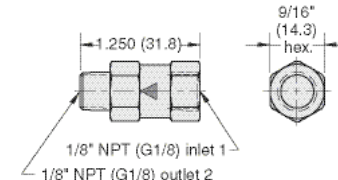


Part No.

MJCV-1BA

MJCV-1BA-MG

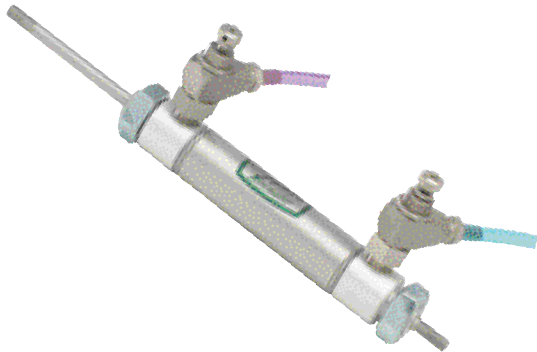
Air Flow: 20 SCFM @ 50 psig; 36 SCFM @ 100 psig; 580 l/min @ 6 bar





FLOW CONTROL VALVES

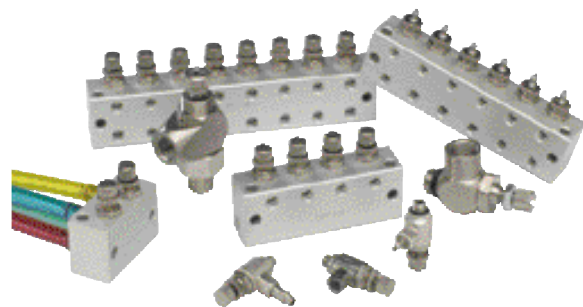
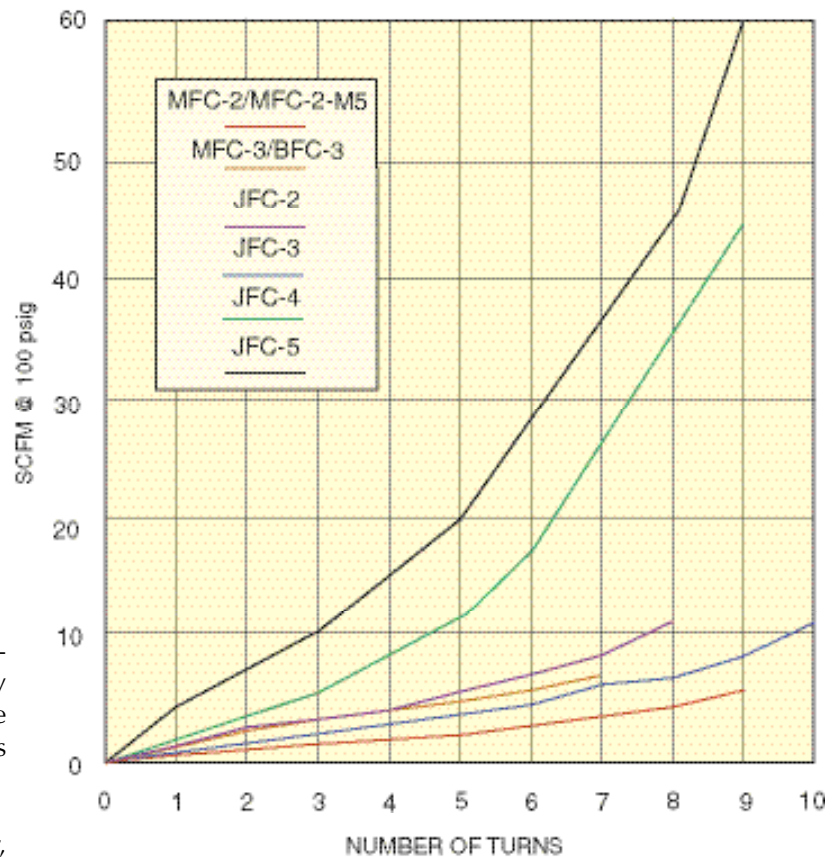
Flow Controls Flow vs. Needle Turns



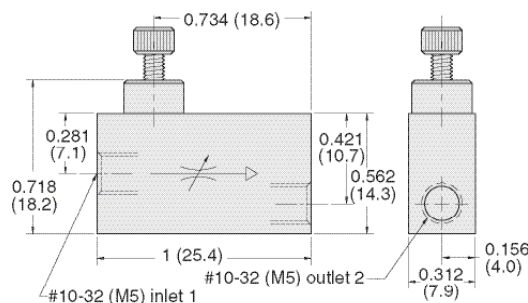
Clippard offers five models of adjustable flow controls with #10-32 through 3/8" NPT ports. They feature a combination needle and check valve that controls flow in one direction and allows free flow in the opposite direction.

They are an ideal valve for use with a cylinder, providing a slow extend stroke while allowing a fast retract stroke. The chart on this page illustrates the flow versus the number of needle adjustments turns for the MFC-2, MFC-2-M5, MFC-3, BFC-3, JFC-2, JFC-3, JFC-4 and JFC-5.

Medium: Air, Water or Oil



Adjustable Flow Control Valve



Materials: Brass body and stainless steel needle; Buna-N seals

Input Pressure: 300 psig max.

Air Flow: 4 SCFM max. @ 50 psig; 7 SCFM max. @ 100 psig

Pressure To Open: Cracks at approx. 2 psig

Mounting: Direct or inline

Flow Direction: Arrow in valve body shows direction of controlled flow

Adjustment: Knurled knob on needle shaft



Part No. Description

MFC-2 Adjustable Flow Control Valve, #10-32

MFC-2-M5 . . Adjustable Flow Control Valve, M5

Input Pressure: 150 psig max.

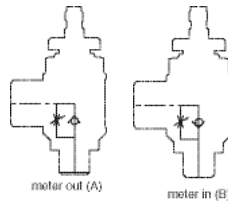
Air Flow: 5 SCFM @ 100 psig adjustable

Mounting: Directly into #10-32 port

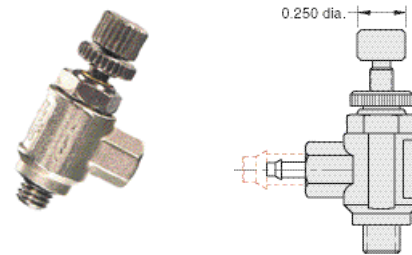
Ports: Rotating input port allows 360° positioning #10-32 port

Flow Direction: Arrow on valve body shows direction of controlled flow

Adjustment: Screwdriver slot; slotted knurled knob with lock nut on #10-80 threaded needle shaft for fine adjustment; or recessed slotted needle



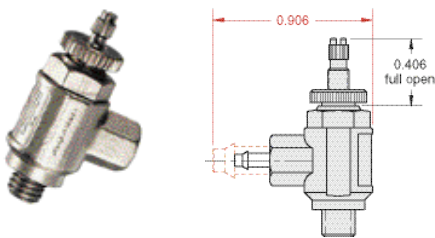
#10-32 Valves, Knurled Knob



Part No. Description

- MFC-3AK . . .Meter Out Control Valve, #10-32 Female Side Port
- MFC-3AK1 . . .Meter Out Control Valve, 1/16" Barb Side Port
- MFC-3AK2 . . .Meter Out Control Valve, 1/8" Barb Side Port
- MFC-3BK . . .Meter In Control Valve, #10-32 Female Side Port
- MFC-3BK1 . . .Meter In Control Valve, 1/16" Barb Side Port
- MFV-3BK2 . . .Meter In Control Valve, 1/8" Barb Side Port

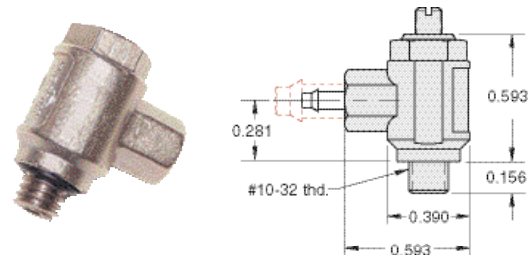
#10-32 Valves, Screwdriver Slot



Part No. Description

- MFC-3A . . .Meter Out Control Valve, #10-32 Female Side Port
- MFC-3A1 . . .Meter Out Control Valve, 1/16" Barb Side Port
- MFC-3A2 . . .Meter Out Control Valve, 1/8" Barb Side Port
- MFC-3B . . .Meter In Control Valve, #10-32 Female Side Port
- MFC-3B1 . . .Meter In Control Valve, 1/16" Barb Side Port
- MFC-3B2 . . .Meter In Control Valve, 1/8" Barb Side Port

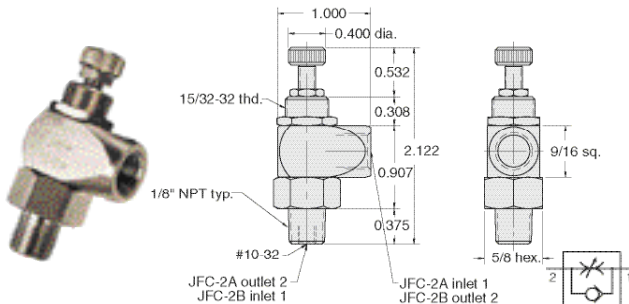
#10-32 Valves, Recessed Needle



Part No. Description

- MFC-3AR . . .Meter Out Control Valve, #10-32 Female Side Port
- MFC-3AR1 . . .Meter Out Control Valve, 1/16" Barb Side Port
- MFC-3AR2 . . .Meter Out Control Valve, 1/8" Barb Side Port
- MFC-3BR . . .Meter In Control Valve, #10-32 Female Side Port
- MFC-3BR1 . . .Meter In Control Valve, 1/16" Barb Side Port
- MFC-3BR2 . . .Meter In Control Valve, 1/8" Barb Side Port

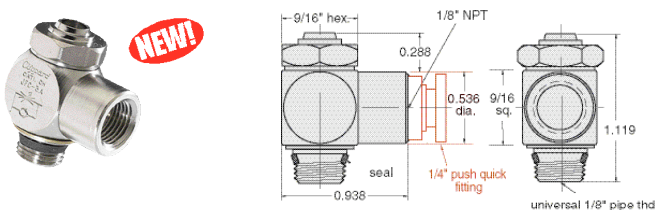
1/8" NPT Control Valves, Knurled Knob



Part No. Description

- JFC-2AMeter Out Control Valve, 1/8" NPT
- JFC-2BMeter In Control Valve, 1/8" NPT

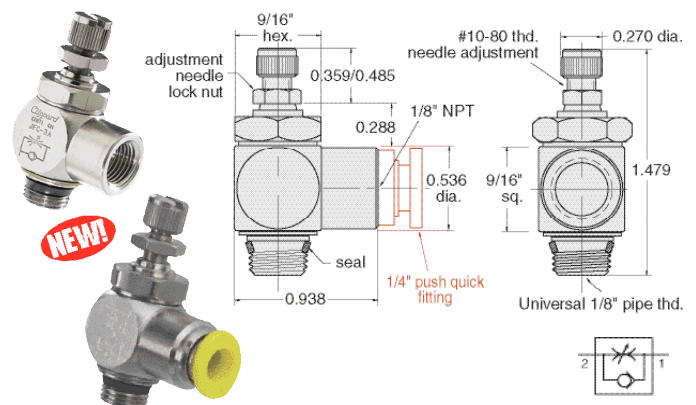
1/8" NPT Valves, Recessed Needle



Part No. Description

- JFC-3ARMeter Out Control Valve, 1/8" NPT
- JFC-3BRMeter In Control Valve, 1/8" NPT
- JFC-3AR08 . . .Meter Out Control Valve, 1/4" Push-Quick Fitting
- JFC-3BR08 . . .Meter In Control Valve, 1/4" Push-Quick Fitting

1/8" NPT Valves, Knurled Knob

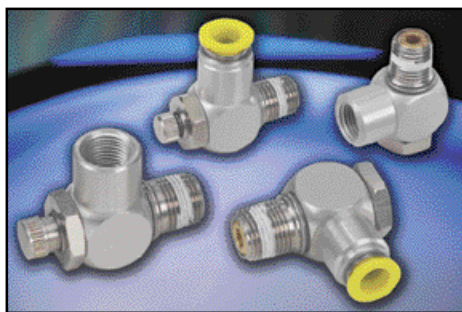


Part No. Description

- JFC-3AMeter Out Control Valve, 1/8" NPT
- JFC-3BMeter In Control Valve, 1/8" NPT
- JFC-3AP08 . . .Meter Out Control Valve, 1/4" Push-Quick Fitting
- JFC-3BP08 . . .Meter In Control Valve, 1/4" Push-Quick Fitting



FLOW CONTROL VALVES



NEW!

These combination needle and check valve flow controls are typically used to control air flow from air cylinders, thereby controlling the speed at which

the piston strokes, either while extending or retracting, depending on their location in the circuit.

J-Series Flow Control Valves allow free flow from the inlet to the outlet past the needle and check valve. In reverse flow, from the outlet to the inlet, the check valve is sealed and the flow must now pass through the metered passage controlled by the tapered adjustment needle.

Models listed in the chart have either a 1/4" NPT (JFC-4) or 3/8" NPT (JFC-5) male threaded outlets, recessed screwdriver slot (R) or knurled knob (K) flow adjustment needles and female NPT or push-to-connect tubing (Push-Quick) inlets. The P08 models features a 1/4" Push-Quick fitting, and the P12 versions have a 3/8" Push-Quick fitting.

Medium: Air, Water or Oil

Material: Electroless nickel plated brass needle and stem, anodized aluminum body, Buna-N seals

Input Pressure: 150 psig max.

Air Flow: JFC-4 - 45 SCFM @ 100 psig adjustable
JFC-5 - 60 SCFM @ 100 psig adjustable

Mounting: Directly into cylinder. Panel or inline.

Ports: Rotating input port allows 360° positioning 1/8" NPT

Adjustment: Recessed slotted needle or knurled knob

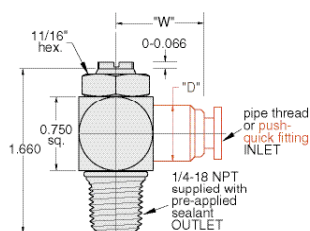
Part #	"D"	"W"
JFC-4K & JFC-4R	0.710"	0.890"
JFC-4K-P08 & JFC-4R-P08	0.562"	0.890"
JFC-4K-P12 & JFC-4R-P12	0.710"	1.062"
JFC-5K & JFC-5R	0.827"	1.125"
JFC-5K-P12 & JFC-5R-P12	0.750"	1.124"

1/4" NPT Valves, Recessed Needle

NEW!



(JFC-4R shown)



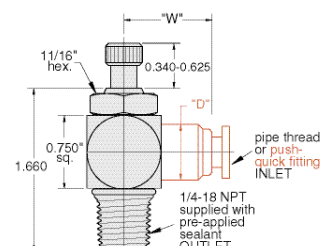
Part No.	Description
JFC-4R	Meter Out Control Valve, 1/4" NPT
JFC-4R-P08 . .	Meter In Control Valve, 1/4" Push-Quick Fitting
JFC-4R-P12 . .	Meter Out Control Valve, 3/8" Push-Quick Fitting

1/4" NPT Valves, Adjusting Knob

NEW!



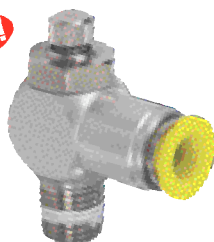
(JFC-4K shown)



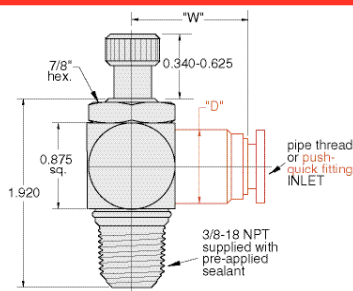
Part No.	Description
JFC-4K	Meter Out Control Valve, 1/4" NPT
JFC-4K-P08 . .	Meter In Control Valve, 1/4" Push-Quick Fitting
JFC-4K-P12 . .	Meter Out Control Valve, 3/8" Push-Quick Fitting

3/8" NPT Valves, Adjusting Knob

NEW!

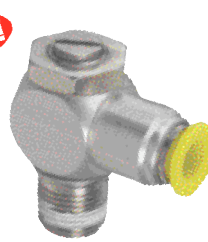


(JFC-5K-P12 shown)

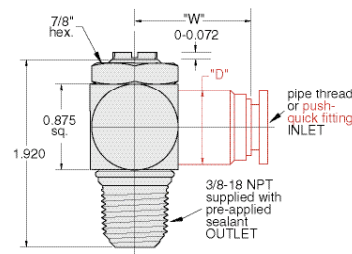


Part No.	Description
JFC-5K	Meter Out Control Valve, 3/8" NPT
JFC-5K-P12 . .	Meter Out Control Valve, 3/8" Push-Quick Fitting

NEW!



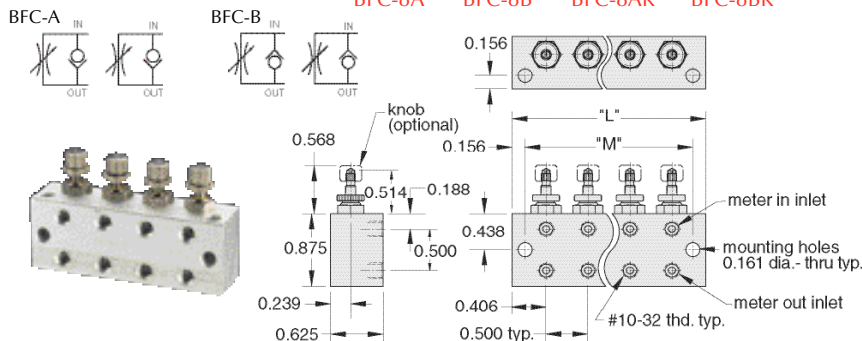
(JFC-5R-P12 shown)



Part No.	Description
JFC-5R	Meter Out Control Valve, 3/8" NPT
JFC-5R-P12 . .	Meter Out Control Valve, 3/8" Push-Quick Fitting

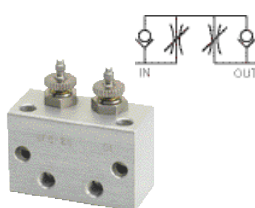
Block Flow Controls

BFC-2A BFC-2B BFC-2AK BFC-2BK
BFC-4A BFC-4B BFC-4AK BFC-4BK
BFC-6A BFC-6B BFC-6AK BFC-6BK
BFC-8A BFC-8B BFC-8AK BFC-8BK

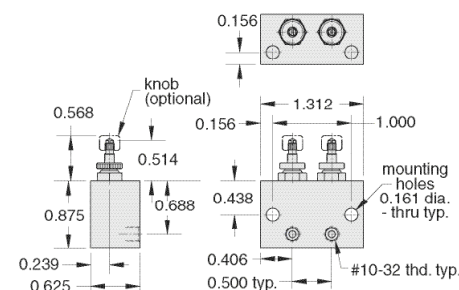


Block Flow Controls

BFC-2C BFC-2CK
(2) Valves common meter in and meter out.

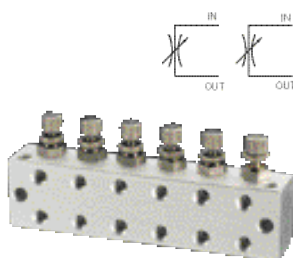


Either port may be used as inlet.

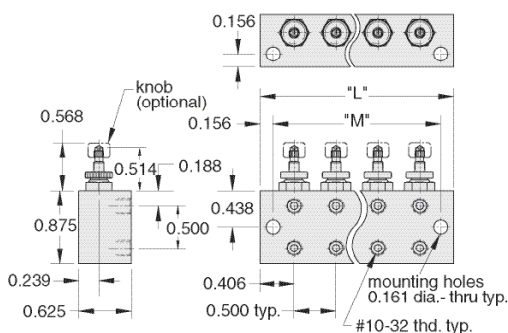


Block Needle Valves

BNV-2N BNV-4N BNV-6N BNV-8N
BNV-2NK BNV-4NK BNV-6NK BNV-8NK

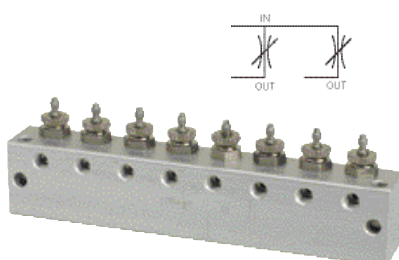


Either port may be used as inlet.

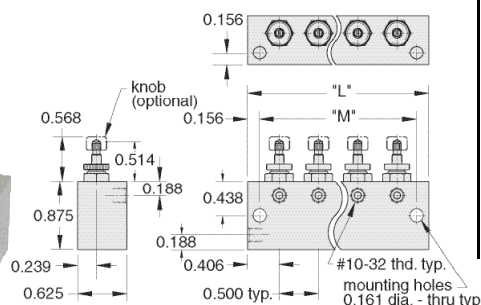


Block Needle Manifolds

BNM-2N BNM-4N BNM-6N BNM-8N
BNM-2NK BNM-4NK BNM-6NK BNM-8NK



Either port may be used as inlet.



**Precision flow controls
and needle valves available
in blocks for rigid mounting.**

Specification same as MFC-3

Clippard's block flow control and needle valves have a variety of features that offer extra versatility for unique applications. These precision made valves offer high performance, low cost, reliability and ease of installation. Each valve is independent of the other (except the BFC-2C), sharing only a common body. This allows separate pressures and/or gases to be used while simplifying mounting. Each needle adjustment is smooth, exact, and includes a locking ring to prevent tampering. The valve body is machined and anodized aluminum; the compound angle needle stems are machined from 303 stainless steel; the valve sleeve is electroless nickel plated brass; and the seals are Buna-N rubber. Block flow controls and needle valves are ideal for controlling double acting cylinders.

FC - Flow Control
NV - Needle Valve
NM - Needle Manifold

B - ☐ - ☐ - ☐ - ☐

Block

Number of stations

2 - 2 stations
4 - 4 stations
6 - 6 stations
8 - 8 stations

A - meter out flow

B - meter in flow

C - 2 valves common
meter in and meter out

N - needle valve

Adjustment type

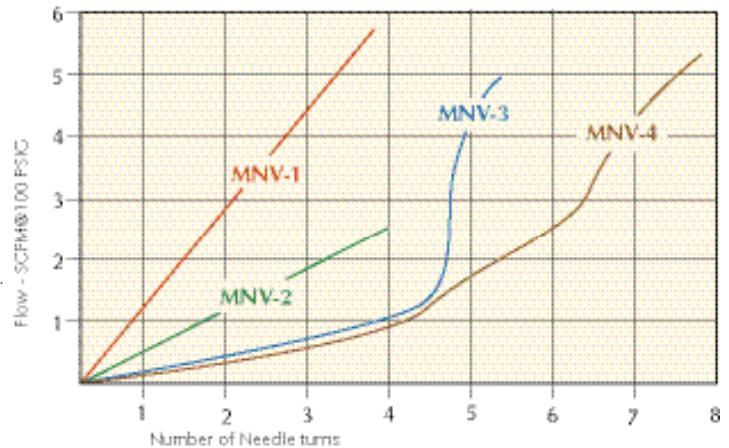
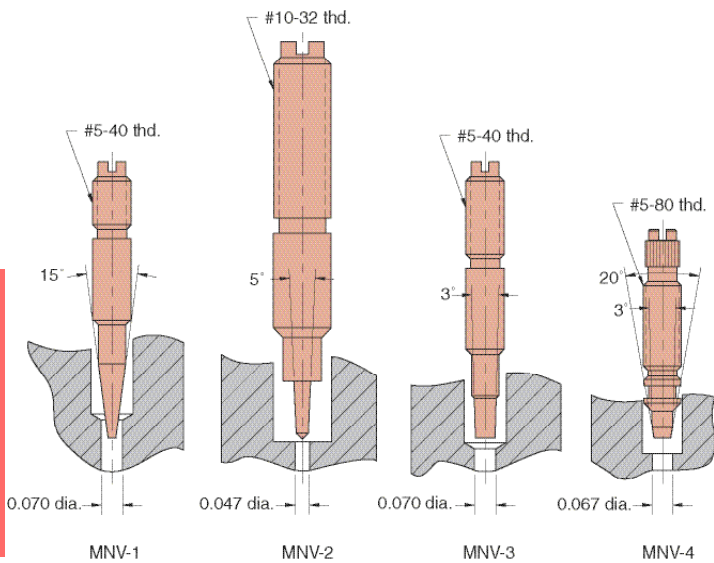
Blank - screwdriver slot

K - adjustment knob

Number of Stations "X"	"L"	"M"
2	1.312	1.000
4	2.312	2.000
6	3.312	3.000
8	4.312	4.000

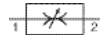


NEEDLE VALVES



Adjustable control needle valves restrict flow in both directions. There are (4) four models offered by Clippard, all with #10-32 ports, but with various needle configurations to provide coarse or fine flow adjustment. The diagram of needle shapes and the chart on this page show the difference between these models.

Medium: Air, Water or Oil

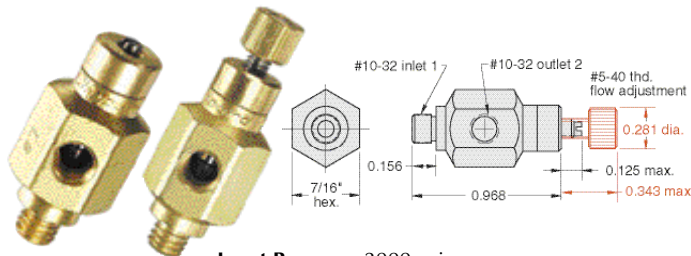


Materials: Brass body; stainless steel needle; Buna-N seal

Mounting: Direct, inline or #15/32-32 thread nut and lockwashers furnished as illustrated

Adjustment: Knurled knob (clockwise adjustment provides less flow), or Screwdriver slot (clockwise adjustment provides less flow).

150° Needle Valves, #10-32

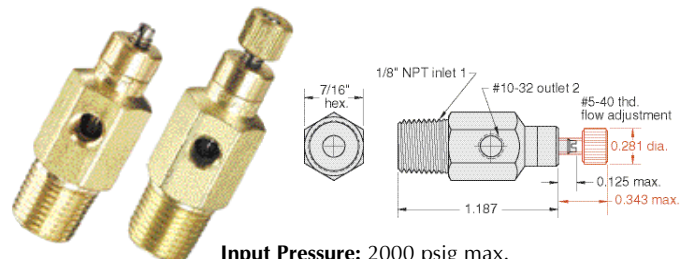


Input Pressure: 2000 psig max.

Air Flow: 3 SCFM @ 50 psig; 6 SCFM @ 100 psig

Part No.	Description
MNV-1	Needle Valve, #10-32, Screwdriver Slot
MNV-1K	Needle Valve, #10-32, Knurled Knob

15° Needle Valves, 1/8" NPT

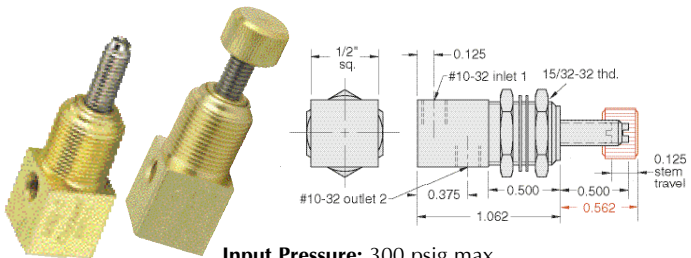


Input Pressure: 2000 psig max.

Air Flow: 3 SCFM @ 50 psig; 6 SCFM @ 100 psig

Part No.	Description
MNV-1P	Needle Valve, 1/8" NPT, Screwdriver Slot
MNV-1KP	Needle Valve, 1/8" NPT, Knurled Knob

5° Needle Valves, #10-32



Input Pressure: 300 psig max.

Air Flow: 1 SCFM @ 50 psig; 2.5 SCFM @ 100 psig

Part No.	Description
MNV-2	Needle Valve, #10-32, Screwdriver Slot
MNV-2K	Needle Valve, #10-32, Knurled Knob

3° Needle Valves, #10-32



Input Pressure: 2000 psig/40 bar max.

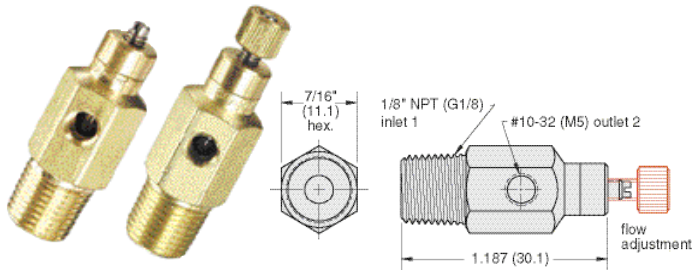
Air Flow: 2.5 SCFM @ 50 psig; 5 SCFM @ 100 psig; 120 l/min @ 6 bar

Part No.	Description
MNV-3	Needle Valve, #10-32, Screwdriver Slot
MNV-3-M5	Needle Valve, M5, Screwdriver Slot
MNV-3K	Needle Valve, #10-32, Knurled Knob
MNV-3K-M5	Needle Valve, M5, Knurled Knob

NEEDLE & EXHAUST VALVES



3° Needle Valves, 1/8" NPT

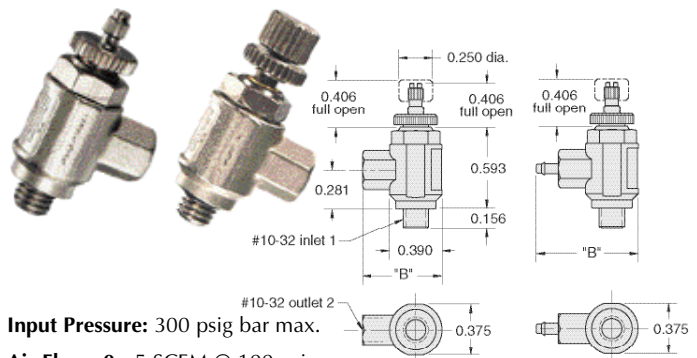


Input Pressure: 2000 psig/40 bar max.

Air Flow: 2.5 SCFM @ 50 psig; 5 SCFM @ 100 psig; 120 l/min @ 6 bar

Part No.	Description
MNV-3P	Needle Valve, #10-32, Screwdriver Slot
MNV-3P-M5	Needle Valve, M5, Screwdriver Slot
MNV-3KP	Needle Valve, #10-32, Knurled Knob
MNV-3KP-M5	Needle Valve, M5, Knurled Knob

3° Needle Valves, #10-32



Input Pressure: 300 psig bar max.

Air Flow: 0 - 5 SCFM @ 100 psig

Part No.	Female Part	"B"	Adjustment
MNV-4	#10-320593	Knurled locking nut standard; screwdriver slot; knurled locking nut standard; clockwise adjustment of either provides less flow
MNV-41 . . . . .	.1/16 Barb . . . . .	.0750
MNV-42 . . . . .	.1/8 Barb . . . . .	.0906
MNV-4K	#10-320593	Knurled knob; clockwise adjustment of either provides less flow
MNV-4K1 . . . . .	.1/16 Barb . . . . .	.0750
MNV-4K1 . . . . .	.1/8 Barb . . . . .	.0906

EXHAUST VALVE APPLICATION

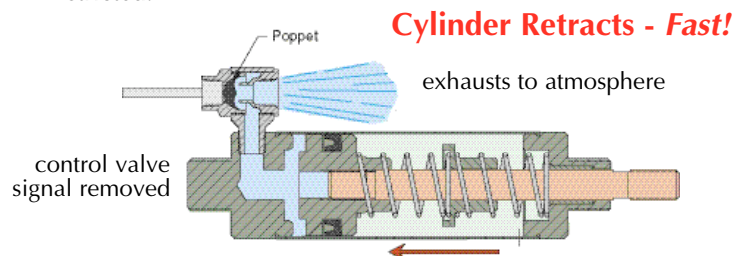
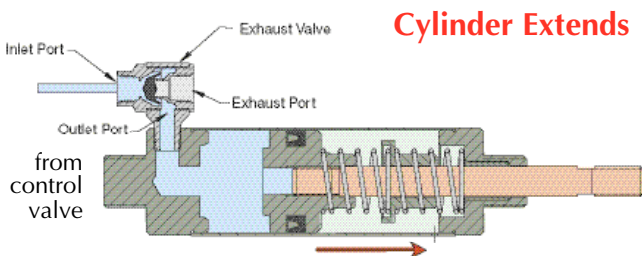
In a typical application the exhaust valve is installed in the inlet of a spring return or double acting pneumatic cylinder.

Supply air from a control valve is directed into the inlet port of the exhaust valve. The Buna-N poppet seals the exhaust port and allows air to flow from the outlet port of the valve into the cylinder.

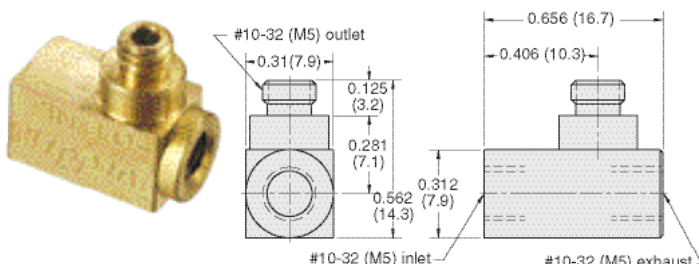
The pressurized air pushes against the piston and extends the rod, compressing the spring, until full rod extension is achieved.

When the control valve exhausts air from the exhaust valve inlet port, the Buna-N poppet shifts to seal the inlet port and open the exhaust port to the cylinder. The pressurized air is allowed to exhaust directly through the exhaust valve to atmosphere.

Normally the air must travel back through the long air line to the control valve to exhaust. By mounting the exhaust valve directly on the cylinder, the piston retracts quickly since the distance to atmosphere is very short and unrestricted.



Poppet Quick Exhaust Valve



Part No.	Description
MEV-2	Poppet Type Quick Exhaust Valve, #10-32
MEV-2-M5	Poppet Type Quick Exhaust Valve, M5

Medium: Air

Material: Brass body, Buna-N poppet

Working Range: 15-150 psig/35-10 bar max.

Air Flow: 5 SCFM @ 50 psig; 9 SCFM @ 100 psig (exhaust rate); 220 l/min @ 6 bar

Mounting: Direct to cylinder

Pressure to Shift: @ 50 psig - opens after approx. 5 psig drop; @ 3.5 bar - opens after approx. 0.350 bar drop

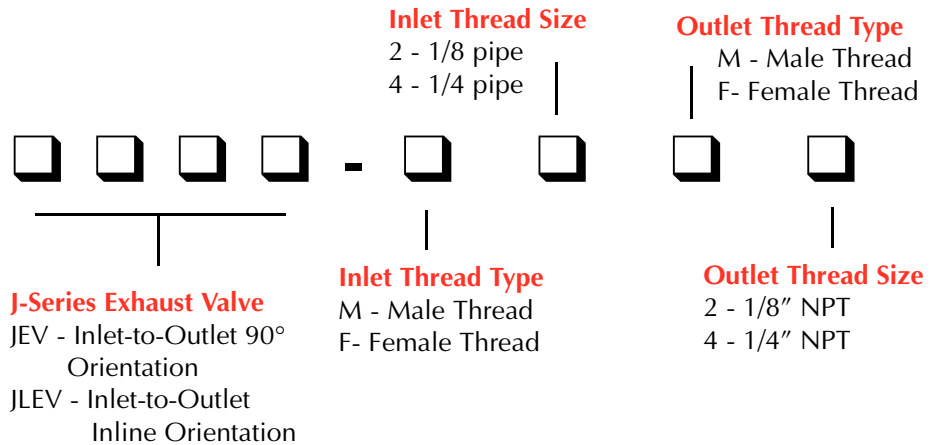
Note: Not for use with cylinders larger than 7/8" dia.; moderate strokes up to 10"



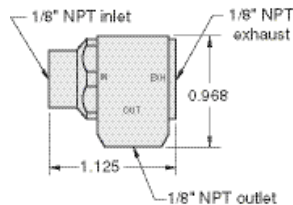
EXHAUST VALVES

J-Series Exhaust Valves

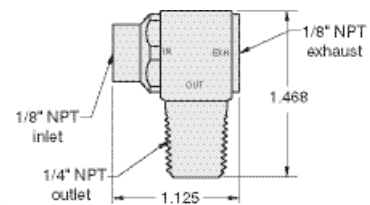
Clippard's J-Series Exhaust Valve offers a variety of design features and provides fast response times and high flow with 1/8" and 1/4" NPT ports. This compact poppet type valve is constructed of brass and is 100% tested to assure the highest quality. The JEV's primary function is to increase cylinder speed. However, it also enables the use of smaller directional valves, longer control lines and can be used as a shuttle valve. 32 versions available.



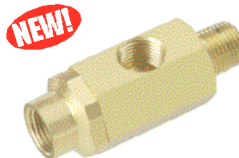
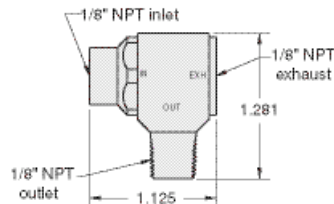
Part No.
JEV-F2F2



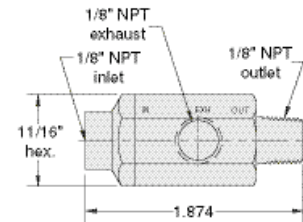
Part No.
JEV-F2M4



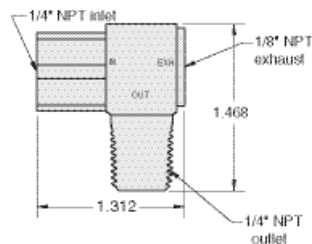
Part No.
JEV-F2M2



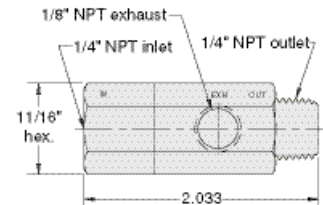
Part No.
JLEV-F2M2



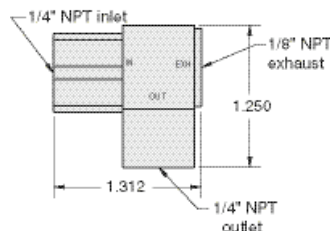
Part No.
JEV-F4M4



Part No.
JLEV-F4M4



Order Information
JEV-F4F4



Features

- Enables use of smaller control valves
- 15 to 150 psig maximum
- Male outlet offers direct connection to cylinder
- 36 SCFM @ 50 psig and 58 SCFM @ 100 psig
- Low shift ratio
- 7 standard configurations
- Custom configurations also available
- Brass construction with molded Buna-N seal

#10-32 SHUTTLE VALVES



Shuttle Valves

There are three models of shuttle valves offered by Clippard. These valves feature a shuttle that allows flow from one inlet to the outlet while blocking the other inlet. They may be mounted directly to valves and cylinders or inline using the hose barbs on the MSV models.

Poppet type shuttle (double check) valve.
Brass body, and
poppet, Buna-N seal



Medium: Air, Water or Oil

Input Pressure: 250 psig/17.5 bar max.

Air Flow: 5.0 SCFM @ 50 psig; 9.5 SCFM @ 100 psig; 230 l/min @ 6 bar

Mounting: Direct or inline

Operation: Flow from "A" to "C" or "B" to "C"

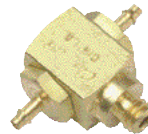
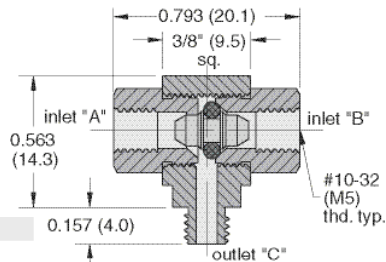
Pressure to Shift: 1/2 psig approx.

Exhaust: Through port where pressure was last applied

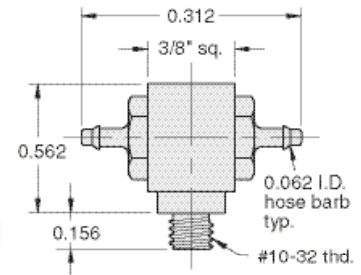
Note: Shuttle valves should not be used as a pressure selector



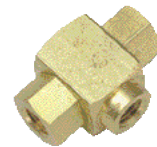
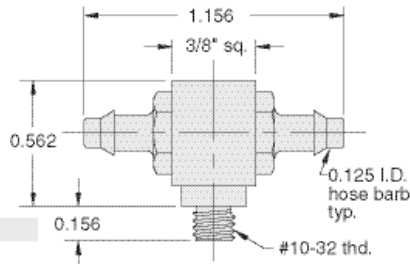
Part No.
MSV-1
MSV-1-M5



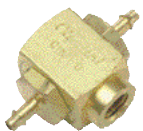
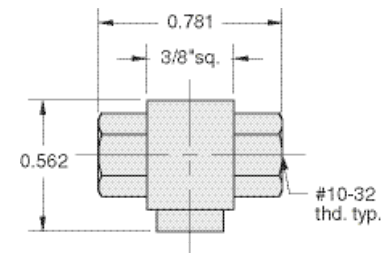
Part No.
MSV-1M22



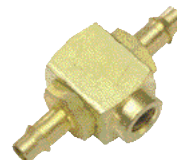
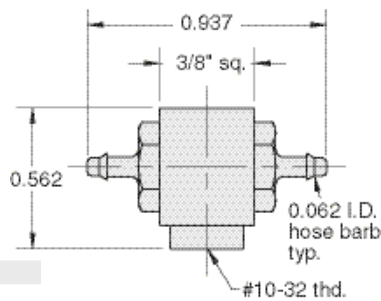
Part No.
MSV-1M44



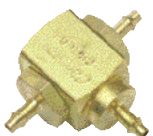
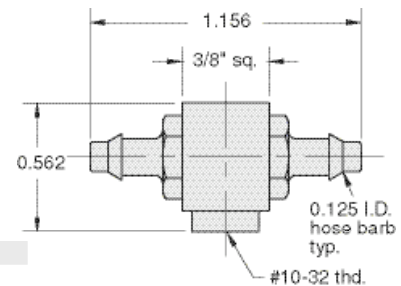
Part No.
MSV-1FFF



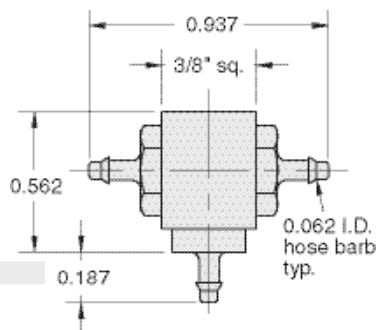
Part No.
MSV-1F22



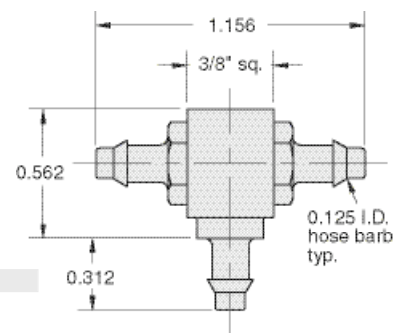
Part No.
MSV-1F44



Part No.
MSV-1222



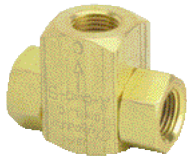
Part No.
MSV-1444



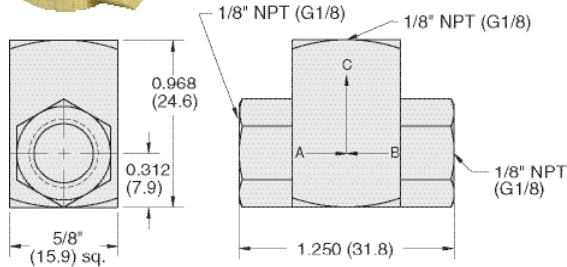


SHUTTLE VALVES

Poppet Type Shuttle Valves



Brass body, Delrin Poppet,
Buna-N seal



Medium: Air, Water or Oil

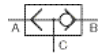
Input Pressure: 300 psig/21 bar - air; 1000 psig/70 bar - hydraulic

Air Flow: 14 SCFM @ 50 psig; 26 SCFM @ 100 psig; 630 l/min @ 6 bar

Mounting: Direct or inline

Operation: Flow from "A" to "C" or "B" to "C"

Pressure to Shift: 1/2 psig approx.



Note: Shuttle valves should not be used as a pressure selector

Part No. Description

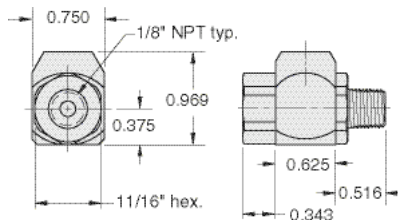
MJSV-1Poppet Shuttle Valve, 1/8" NPT

MJSV-1-MG .Poppet Shuttle Valve, G1/8

J-Series Shuttle Valves



Part No.
JSV-2FPF



Poppet type shuttle
(double check) valve.
Brass body, stainless
steel shuttle, Buna-N
seal



Medium: Air, Water or Oil

Input Pressure: 300 psig max.

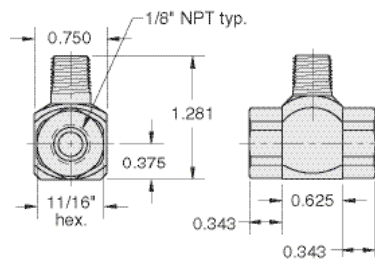
Air Flow: 30 SCFM @ 50 psig
50 SCFM @ 100 psig

Mounting: Direct or inline

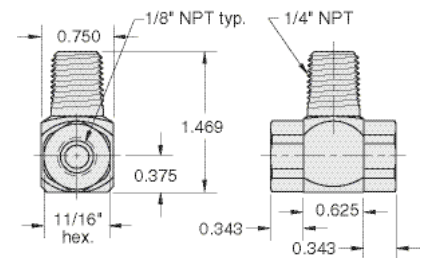
Pressure to Shift: 1 psig approx.



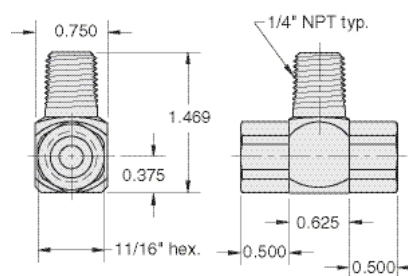
Part No.
JSV-2PFF



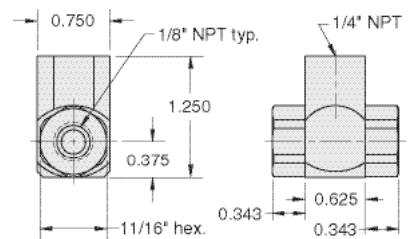
Part No.
JSV-2WFF



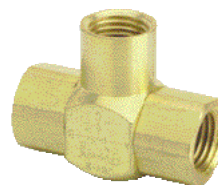
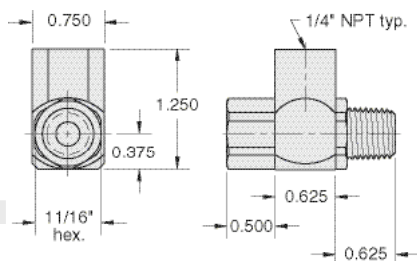
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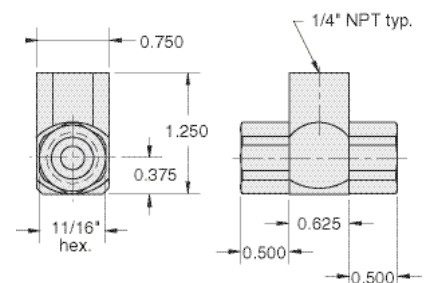
Part No.
JSV-2YFF



Part No.
JSV-2YYY



Part No.
JSV-2YYY



Miniature Pulse Valves

A normally open 3-way valve that closes shortly after being pressurized and remains closed until supply pressure is exhausted and repressurized. Widely used in control circuits.



Medium: Air

Input Pressure: 40-150 psig/20 bar max.

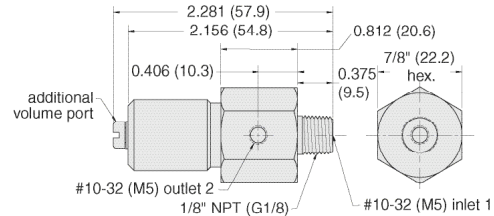
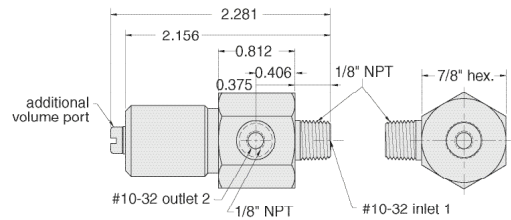
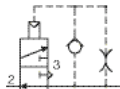
Mounting: 1/8" NPT (G1/8) thread; nut furnished

Volume Chamber: #10-32 (M5)

Operation: Converts a continuous supply of inlet air into a pulse of approximately 100 milliseconds

Response: 300 cycles per minute; time delay may be increased by adding standard Clippard volume chambers not to exceed 3 cu. in.

Construction: Body - brass, Seals - Buna-N rubber, Spring - stainless steel, Poppet - Delrin®



Part No. Description

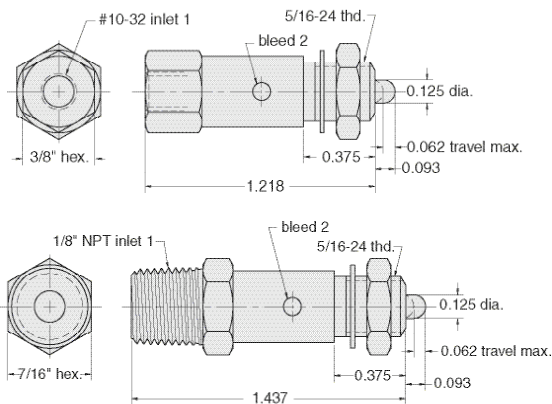
PV-1Pulse Valve, #10-32

PV-1-M5Pulse Valve, M5 Metric

PV-1PPulse Valve, 1/8" NPT

Normally Closed 2-Way Pilot Sensor

For use with pressure piloted control circuits, can repeatedly detect a position within 0.002" properly mounted. In jigs or fixtures it will signal correct position and start-ok to control circuit.



Medium: Air

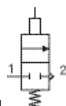
Stem Travel: 1/16" max. will open and close in as little as 0.0005"

Input Pressure: 300 psig max.

Air Flow: 3 SCFM @ 50 psig; 6 SCFM @ 100 psig

Force For Full Stem Travel: 7 oz. nominal

Mounting: #15/16-24 thread. Nut and lockwashers furnished

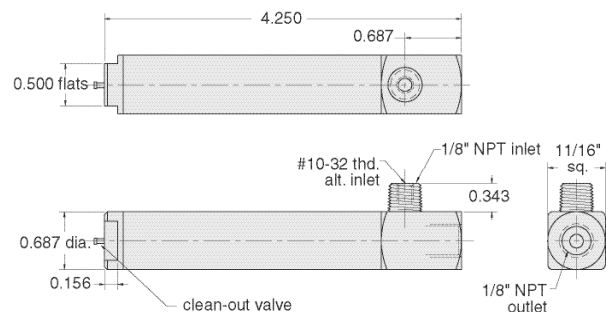
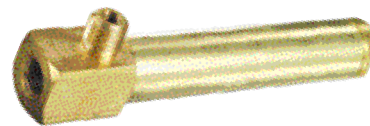


Part No. Description

MPS-2Poppet Valve with Pilot Sensor, #10-32

MPS-2-PPoppet Valve with Pilot Sensor, 1/8" NPT

Replaceable Air Filter with Element



Medium: Air Only

Filtration: 35 micron

Input Pressure: 0-250 psig max.

Air Flow: 5.0 SCFM @ 50 psig; 9.0 SCFM @ 100 psig

Material: Brass

Mounting: Direct or inline

Cleanout: Press clean-out valve stem periodically to remove accumulated water. For complete cleaning, filter body unscrews at point "A" without disturbing piping. DO NOT DISASSEMBLE UNDER PRESSURE. Remove screw and filter element to clean or replace



Part No. Description

MAF-1Replaceable Air Filter with Element

12382Low Pressure Drop, Concentric, Chemically-Inert 35-micron Filter Elements



SPECIALTY COMPONENTS

Piloted Actuated Water Drawback Valves

When this normally-closed valve closes a spring biased internal piston draws back a small volume on outlet side (approx. 6-7" in 1/8" I.D. tube) thus preventing overflow or dribbles. Ideal for use in quenching or water spray applications.



Medium: Water or Other Light Liquids

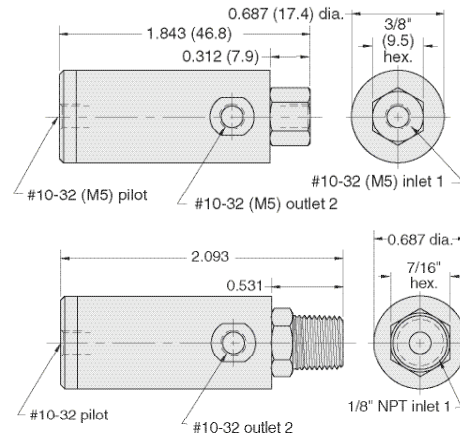
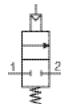
Input Pressure: 100 psig/10 bar max.

Pilot Pressure: 25 psig min.

Flow: 74 cu. in. H₂O per min. @ 80 psig

Drawback: 0.07 cu. in. (1.2 ml)

Mounting: Mounts inline



Part No. Description

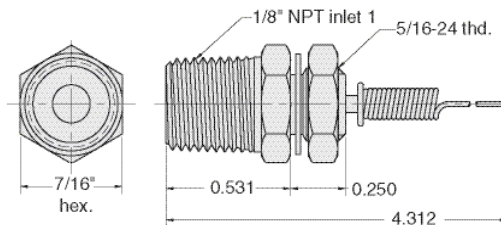
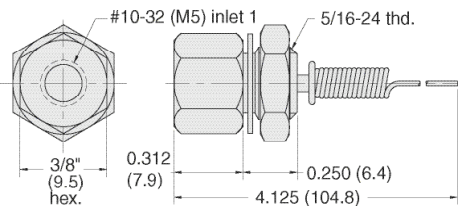
MDV-2Poppet Valve with Air Pilot, #10-32

MDV-2-M5 . .Poppet Valve with Air Pilot, M5

WDV-2P . . .Poppet Valve with Air Pilot, 1/8" NPT

2-Way Normally Closed Whisker Valve

For use with bleed pressure piloted control circuits. Coil spring stainless steel whisker is easily replaceable and can be formed to different shapes.



Medium: Air

Input Pressure: 150 psig/10 bar max.

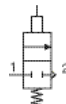
Air Flow: 1.0 SCFM @ 50 psig; 1.5 SCFM @ 100 psig

Force For Full Stem Travel: 1/4 oz. approx.

Mounting: 5/16-24 male thread. Nut and lockwashers furnished

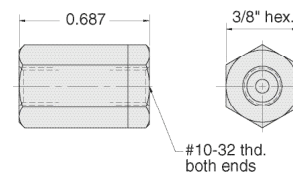
Bleed: To atmosphere around whisker stem

Whisker: Stainless steel, approx. 3" (76.2) length. Replaceable (Part Number 12375)



In-Line Fixed Orifice Air Chokes

Each choke is calibrated for precise flow



Medium: Air

Material: Brass

Working Range: 0-300 psig max.

Part No. Description

MAC-AAir Choke, 0.0135" Hole, Yellow Disk

MAC-BAir Choke, 0.010" Hole, Green Disk

MAC-CAir Choke, 0.0075" Hole, Blue Disk

MAC-DAir Choke, 0.006" Hole, Red Disk



Quality remains a primary feature of every product Clippard produces. This is achieved through the excellence

in manufacturing practices and craftsmanship that has continued throughout the years. The company motto—Quality People, Quality Products—emphasizes the important role every employee plays in maintaining the company's reputation.

Part No. Description

MWV-1Normally-Closed Whisker Valve, #10-32

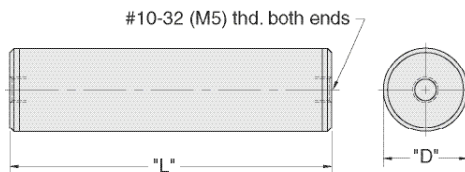
MWV-1-M5 .Normally-Closed Whisker Valve, M5

MWV-1P . . .Normally-Closed Whisker Valve, 1/8" NPT

In-Line Volume Chamber



Used for providing a time delay in pneumatic circuits

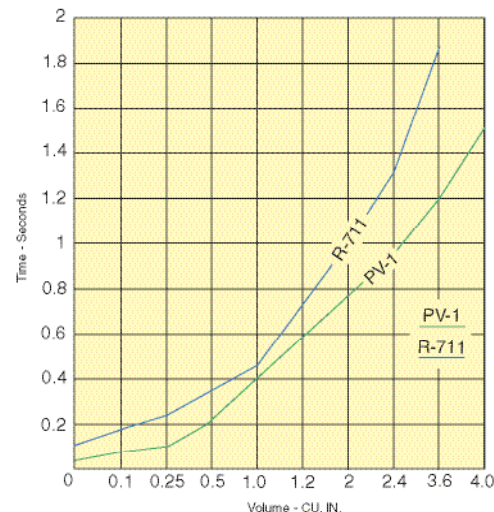


Medium: Air only

Material: Brass

Input Pressure: 150 psig/10 bar max.

Mounting: Direct or inline; Mounting clamp with MAT-20 and MAT-4.0



Part No. Description

MAT-(size)In-Line Volume Chamber, #10-32

MAT-(size)-M5 .In-Line Volume Chamber, M5

Specify Size per Chart

Volume CU. IN.	Volume Chamber
0.1	MAT-.1
0.25	MAT-.25
0.50	MAT-.50
1.0	MAT-1.0
1.2	R-821
2.0	MAT-2.0
2.4	R-821 (2)
3.6	R-821 (3)
4.0	MAT-4.0

The time delay of the PV-1, PV-1P and R-711 may be increased by adding standard Clippard volume chambers. The chart to the left shows the TIME versus VOLUME for these combinations.

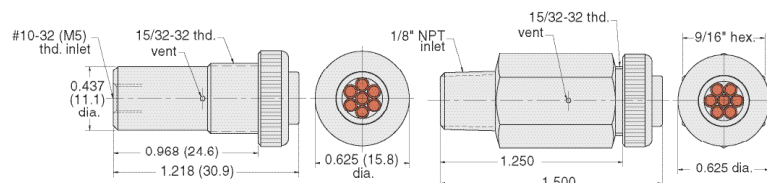
Suffix	Bore	"L"	"D"	Cu.In
.1	3/8"	1.265"	0.437"	0.1
.25	3/8"	2.640"	0.437"	0.25
.5	9/16"	2.390"	0.625"	0.5
1.0	9/16"	4.390"	0.625"	1.0
2.0	15/16"	3.328"	1"	2.0
4.0	15/16"	6.234"	1"	4.0

Volume	PV-1	R-711
0	0.042	0.117
0.1	0.074	0.180
0.25	0.124	0.245
0.5	0.210	0.350
1.0	0.390	0.450
1.2	0.580	0.700
2.0	0.760	1.000
2.4	0.950	1.300
3.6	1.200	1.900
4.0	1.500	N.R.

R-821 volume charts are shown in the Modular Section of this catalog.

Multi-Pin Air Indicator

Plunger type (when extended 7-pin color display signals "on")



Medium: Air Only

Input Pressure: 150 psig/1-10 bar max.

Minimum Actuation Pressure: 15 psig (approx)

Response: Approx. 10 ms @ 50 psig

Filtration: 40 micron recommended

Mounting: IND-3: Panel mount in hole. #15/32-32 nut and lockwasher provided; IND-3P: Direct mount into 1/8" NPT hole

Maximum Panel Thickness: 3/16" (4.8)

Part No. Description

IND-3-(color)Multi-Pin Air Indicator, #10-32

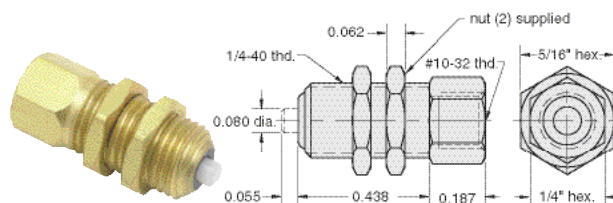
IND-3-M5-(color) . .Multi-Pin Air Indicator, M5 Metric

IND-3P-(color) . . .Multi-Pin Air Indicator, 1/8" NPT

GN-Green, WH-White, RD-Red, YL-Yellow

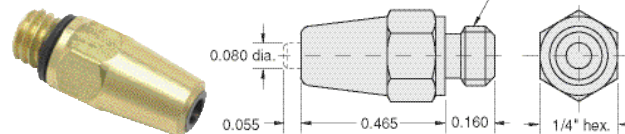
Single Pin Air Indicator

Plunger type (when extended white pin display signals "on")



Part No. Description

IND-1-WH . .Single Pin Air Indicator



Part No. Description

IND-1M-WH Single Pin Air Indicator

Medium: Air Only

Input Pressure: 150 psig max.

Minimum Actuation Pressure: 12 psig (approx)

Response: Approx. 10 ms @ 50 psig

Filtration: 40 micron recommended

Mounting: IND-1-WH: Panel mount 1/4 dia. hole. 1/4-40 thd. nuts provided. IND-1M-WH: Direct mount into 1/8" NPT hole

Maximum Panel Thickness: 3/16"



HEAVY-DUTY LIMIT VALVES

Heavy-Duty Limit Valves

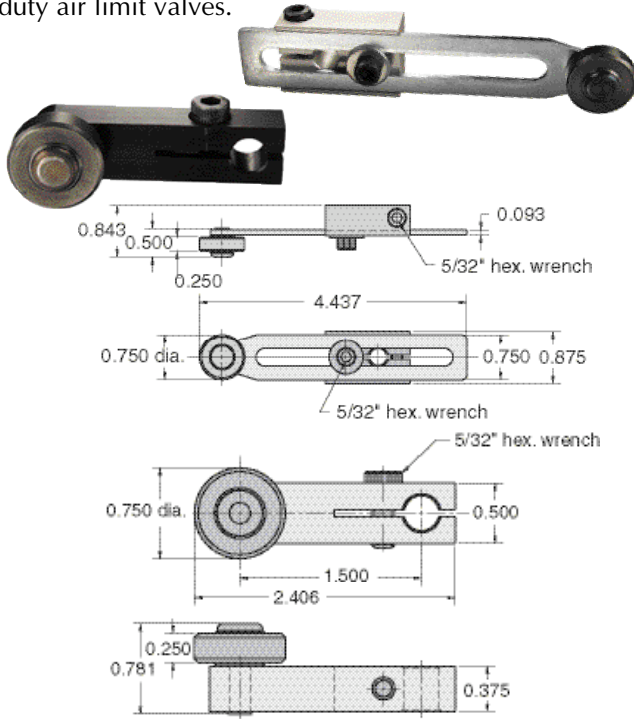


These valves feature rugged construction to withstand heavy use. A zinc alloy die cast actuator head with a hardened steel shaft in a bronze bearing is mated to a solid aluminum valve body. Inside is a Clippard series cartridge valve (MJV-2C or 3C, MJVO 2C or 3C) made of brass and stainless steel with Buna-N seals. Valve cartridge is easily replaced in minutes. Three different style actuator arms are available below.

Part No.	Description
LVA-2	2-Way Poppet Normally-Closed Limit Valve
LVA-3	3-Way Poppet Normally-Closed Limit Valve
LVAO-2	2-Way Normally-Open Limit Valve
LVAO-3	3-Way Normally-Open Limit Valve

Roller Actuator Arms

Roller Actuator Arms are ideal for Clippard heavy duty air limit valves.



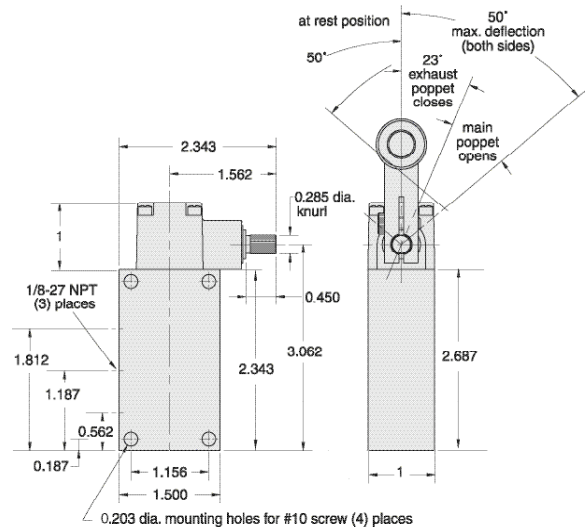
Arm: Aluminum base with steel extendable arm (AR-L only)

Roller: Hardened steel

Adjustment: AR-L only - 1.0 to 3.5 in.

Mounting: Slotted mounting clamp tightens onto limit valve with 5/32" hex. wrench; may be positioned on limit valve shaft in any direction within a 360° circle.

Part No.	Description
AR-K	Roller Actuator Arm
AR-L	Roller Actuator Arm, Adjustable



Medium: Air

Stem Travel: Actuator arm may move 50° in either direction

Input Pressure: 300 psig max.

Air Flow: 10 SCFM @ 50 psig; 19 SCFM @ 100 psig

Torque to Actuate: 3 in./lbs.

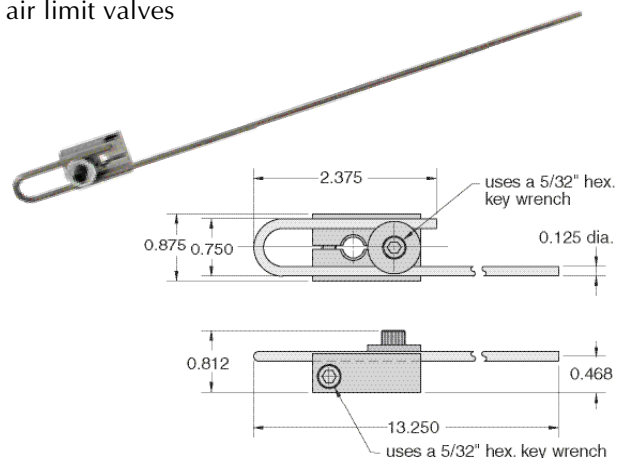
Actuation Range: 0-23° Off, 23-50° On, Maximum travel 50°

Mounting: Four 13/64" dia. mounting holes provided in valve body for use with #10 screw, or for tapping 1/4-20 by customer

Ports: Inlet - 1/8-27" NPT, Outlet - 1/8-27" NPT, Exhaust - 1/8-27" NPT for convenience in porting away exhaust air or attaching muffler; it should not be restricted; exhaust port is not used on 2-ways

Adjustable Rod Actuator Arm

Adjustable Rod Actuator Arm for Clippard heavy duty air limit valves



Arm: Steel 1/8" rod 13 inches long retained by screw clamp; the rod may be shortened and/or bent to desired shape

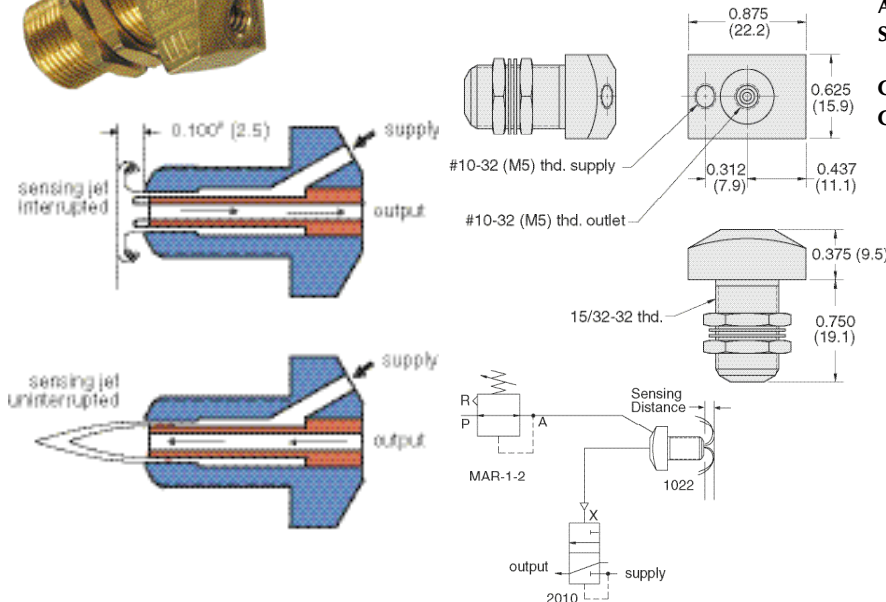
Mounting: Slotted aluminum mounting clamp may be positioned on limit valve shaft in any direction within a 360° circle

Part No.	Description
AR-M	Rod Actuator Arm

Non-Contact Air Limit Switch



Non-Contact Air Limit Switch with no moving parts; will sense any flat or curved object which presents a sensing surface of 1/4" or more to the sensing nozzle



Medium: Air

Input Pressure: 4-10 psig/0.3-0.7 bar

Nominal Proximity Distance: 0.100"

Output Signal at 4 psig supply: Normal: 2" H₂O
actuated: 7 1/2" H₂O

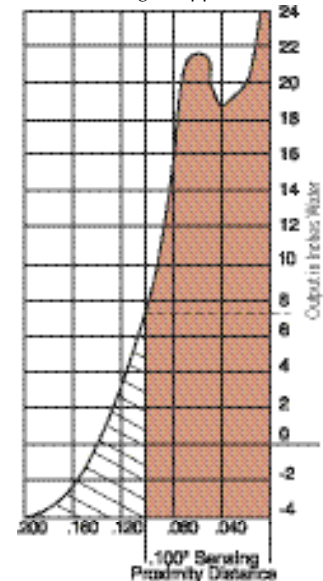
Frequency Response: 500 CPM

Air Consumption: 0.3 SCFM

Sensing Capability: Flat or curved surfaces with 1/8" minimum radius

Connections: #10-32 (M5) female

Construction: Solid brass bright dipped

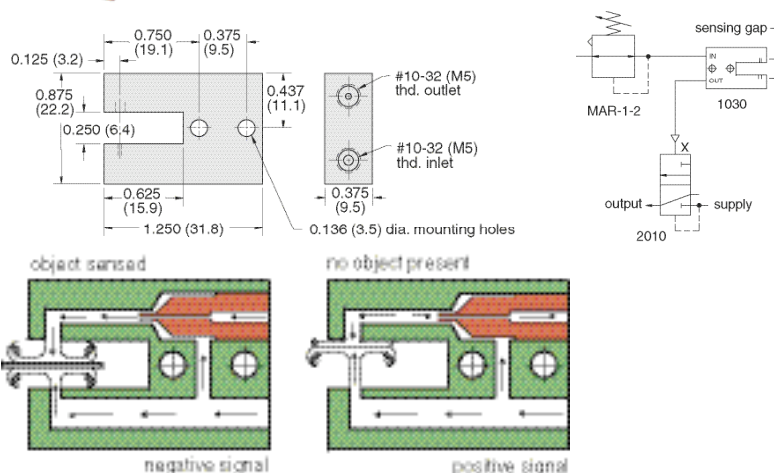


Part No.	Description
1022	Non-Contact Air Limit Switch, #10-32
1022-M5 . . .	Non-Contact Air Limit Switch, M5

Non-Contact Positive Pressure Sensor



Non-Contact Positive Pressure Sensor will sense any flat or round object with a 1/32" minimum radius. Produces a positive signal when no object is present and a negative signal when an object interrupts its sensing system



Medium: Air

Input Pressure: 0.5-5 psig

Output: -3" to 26" H₂O @ 4 psig

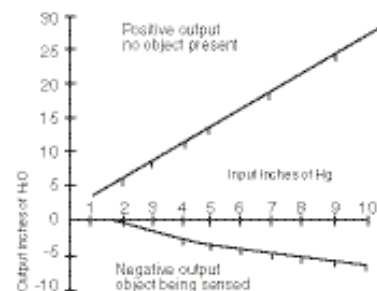
Frequency Response: 1000 cpm

Air Consumption: 1/4 SCFM @ 4 psig

Sensing Capability: Flat or curved surfaces with 1/32" minimum radius. May be used for up to 4" gap with an additional auxiliary jet

Connections: #10-32 (M5) female

Construction: Solid brass bright dipped



Part No.	Description
1030	Non-Contact Positive Pressure Sensor, #10-32
1030-M5 . . .	Non-Contact Positive Pressure Sensor, M5

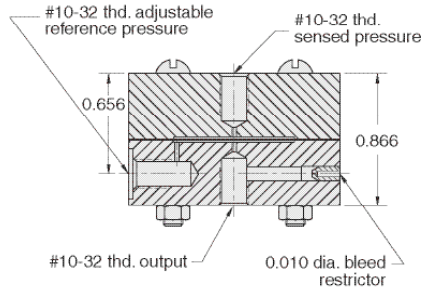
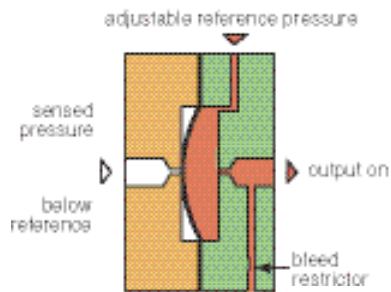
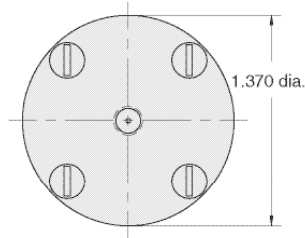


PRESSURE SENSORS

Normally-On Single Stage Pressure Repeater



Normally on Single Stage Pressure Repeater for off-on control of an adjustable reference pressure when a sensed pressure moves above or below the reference pressure level



Medium: Reference pressure - air sensed pressure - Air, gas, or liquid

Input Pressure: 1-150 psig max.

Air Flow: 0.029" orifice

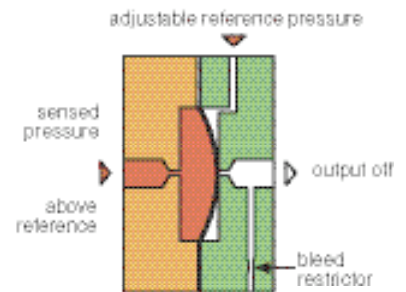
Response Time: 5 ms.

Differential Sensitivity: 2%

Frequency Response: 60 Hz

Materials: Anodized aluminum body, Buna-N diaphragms

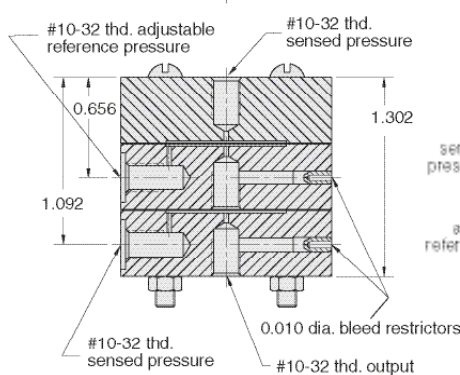
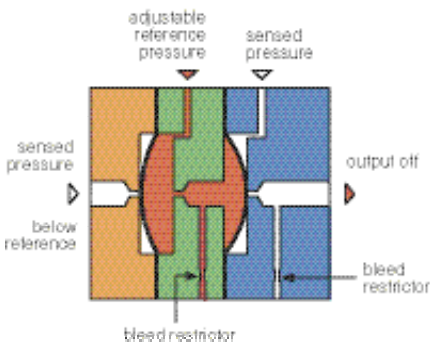
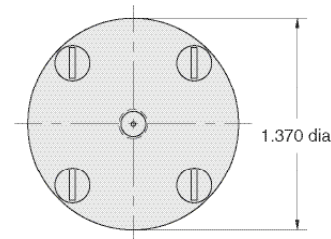
Part No.	Description
1043	Single Stage Pressure Repeater



Normally-Off Two Stage Pressure Repeater



Normally Off Two Stage Pressure Repeater for off-on control of an adjustable reference pressure when a sensed pressure moves above or below the reference pressure level



Medium: Reference pressure - air sensed pressure - Air, gas, or liquid

Input Pressure: 1-150 psig max.

Air Flow: 0.029" orifice

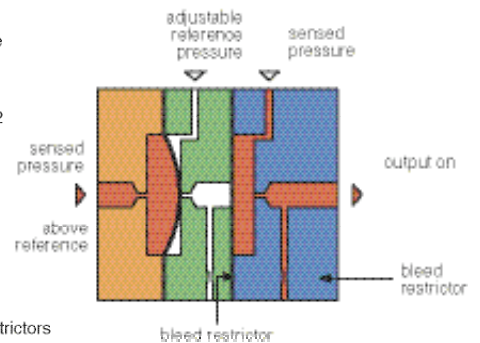
Response Time: 5 ms.

Differential Sensitivity: 2%

Frequency Response: 60 Hz

Materials: Anodized aluminum body, Buna-N diaphragms

Part No.	Description
1044	Two Stage Pressure Repeater



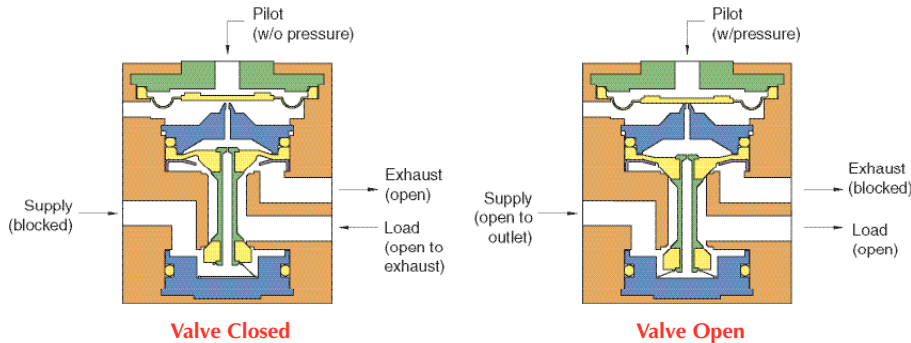
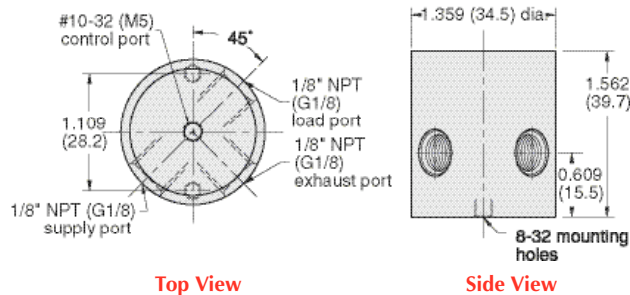
SPECIAL PILOTED 3-WAY VALVES



3-Way Normally-Closed Interface Valves



3-Way Valve Normally Closed Interface amplifies very low pressure air-jet sensing signals to working power levels



Medium: Air

Material: Anodized aluminum body, Buna-N diaphragms

Input Pressure: 30-100 psig/2-7 bar max.

Air Flow: 22 SCFM @ 100 psig;
530 l/min @ 6 bar

Pilot Pressure: 4" H₂O @ 100 psig

Maximum Allowable Pilot Pressure: 5 psig

Response Time: 10 ms. dead headed

Operating Speed: 50 Hz

Bleed: 0.1 SCFM @ 100 psig

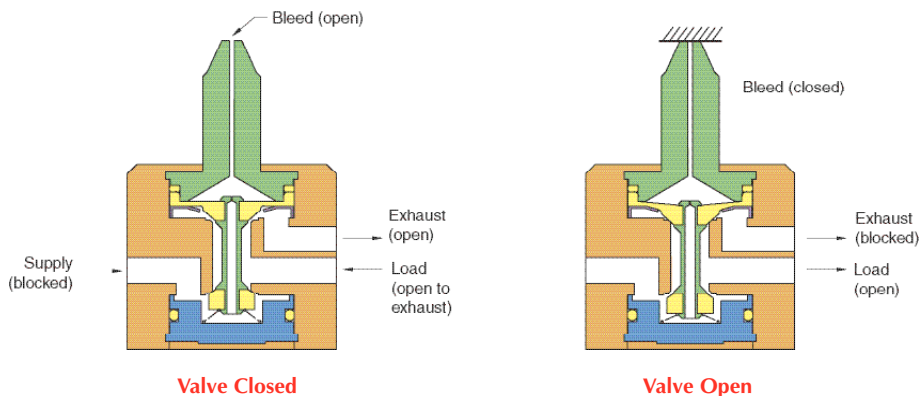
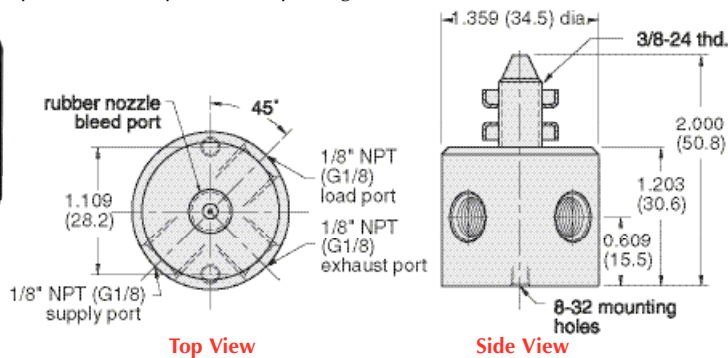
Ports: Load - 1/8" NPT (G1/8) female
Supply - 1/8" NPT (G1/8) female
Exhaust - 1/8" NPT (G1/8) female
Control - #10-32 (M5) female

Part No.	Description
2010	Normally-Closed Interface, 1/8" NPT
2010-MG . . .	Normally-Closed Interface, G1/8

3-Way Bleed Pressure Piloted Limit Valves



3-Way Bleed Pressure Piloted Limit Valve; blocking of the sensing port causes rapid valve opening



Medium: Air

Material: Anodized aluminum body, Buna-N diaphragms

Input Pressure: 30-100 psig/2-7 bar max.

Air Flow: 22 SCFM @ 100 psig;
530 l/min @ 6 bar

Bleed: 0.1 SCFM @ 100 psig

Response Time: 15 ms.
(response time will increase)

Ports: 1/8" NPT (G1/8)

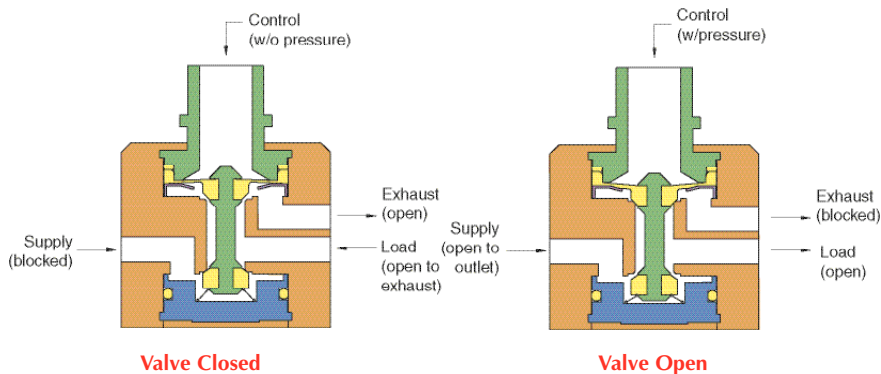
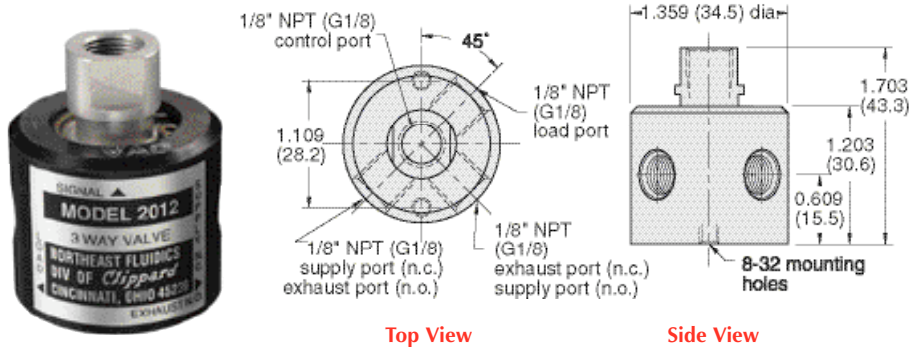
Note: Supplied with threaded bulkhead mount and integral rubber nozzle for direct actuation by mechanical closure. By removing rubber nozzle and inserting a #10-32 fitting and length of hose, 2011-1 can be converted to a remote sensing valve.

Part No.	Description
2011-1	Piloted Limit Valve, 1/8" NPT
2011-1-MG . .	Piloted Limit Valve, G1/8



SPECIAL PILOTED 3-WAY VALVES

3-Way N.O. or N.C. Air-Piloted Valves



Medium: Air

Material: Anodized aluminum body, Buna-N diaphragms

Input Pressure: 1-100 psig/7 bar max.

Air Flow: 22 SCFM @ 100 psig;
530 l/min @ 6 bar

Bleed: 0.1 SCFM @ 100 psig

Minimum Pilot Pressure:

n.o. - 90% of supply pr.

n.c. - 60% of supply pr.

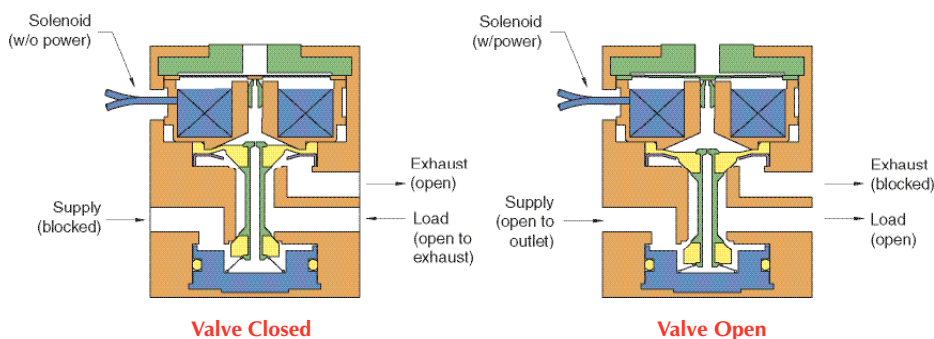
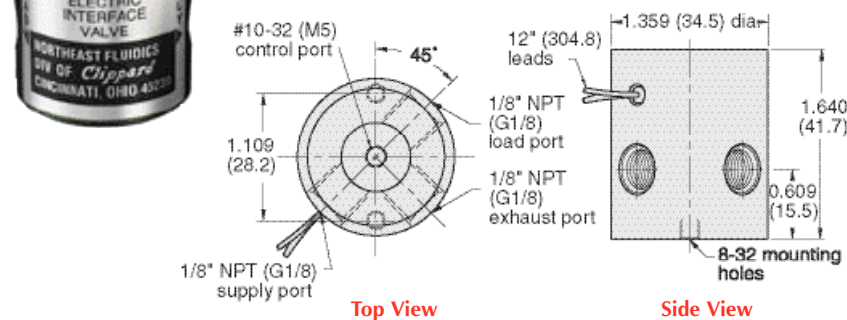
Response Time: 15 ms. after pilot pressure reaches switch point

Operating Speed: 1100 CPM

Part No.	Description
2012	Piloted Valve, 1/8" NPT
2012-MG	Piloted Valve, G1/8
2012-VAC	Valve for Vacuum Operation (requires positive pressure pilot signal)
2012-G	Valve for Liquid Adhesives (silicone diaphragm and seals), 1/8" NPT
2012-G-MG	Valve for Liquid Adhesives (silicone diaphragm and seals), G1/8

3-Way N.O. or N.C. Air-Piloted Valves

3-Way Normally Closed Electronic Valve with low-power DC solenoid solid state output signals can be directly converted to high pressure pneumatic power without amplification



Medium: Air

Material: Anodized aluminum body, Buna-N diaphragms

Stem Travel: 1/8"

Input Pressure: 30-100 psig/2-7 bar max.

Air Flow: 22 SCFM @ 100 psig;
530 l/min @ 6 bar

Bleed: 0.1 SCFM @ 100 psig

Filtration: 10 micron

Frequency Response: 50 Hz @ 100 psig
70 Hz @ 30 psig

Switching Speed: 10 ms.

Leads: 28 gauge stranded P.V.C. insulated

Continuous Overload: 350% @ 25° C
ambient; 250% @ 50° C ambient

Power Consumption: less than 0.50 watts
at rated voltage 80 ma. @ 6V
40 ma. @ 12V
20 ma. @ 24V

Part No.	Description
2013-6	Valve, 6 Volts DC, 1/8" NPT
2013-12	Valve, 12 Volts DC, 1/8" NPT
2013-24	Valve, 24 Volts DC, 1/8" NPT
2013-6-MG	Valve, 6 Volts DC, G1/8
2013-12-MG	Valve, 12 Volts DC, G1/8
2013-24-MG	Valve, 24 Volts DC, G1/8

SPECIAL PILOTED 3-WAY VALVES



3-Way Normally-Closed Pressure Piloted Valve



Designed to be piloted by a Clippard EV or ET manifold mount electronic valve. Output from the EV/ET actuates the valve to produce outputs up to 22 SCFM at 100 psig. Combines low wattage, long life and cool running of the EV/ET valves with quick response and high flow of Clippard booster type valves.

The 2020 and 2021 are identical in all respects except one. The 2020 has an external #10-32 (M5) port for the pressure supply to the EV/ET electronic pilot valve. The 2021 has an internal pressure supply to the EV/ET.

Medium: Air

Input Pressure: 30-100 psig/2.7-7 bar max.

Air Flow: 22 SCFM @ 100 psig; 620 l/min @ 6 bar

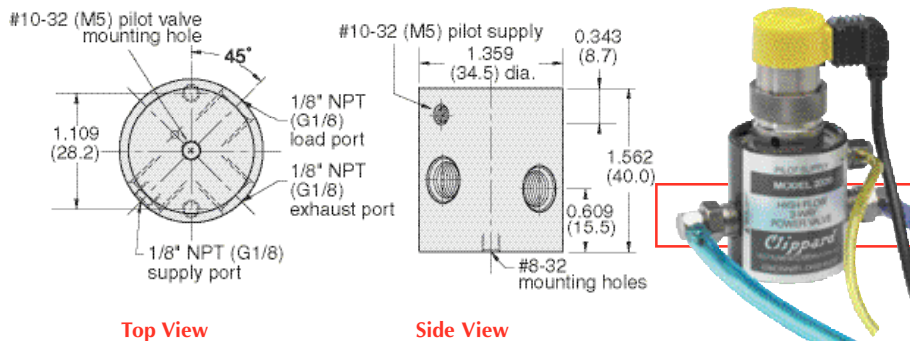
Pilot Pressure: 60% of supply pressure, min.

Response Time: Approx. 20 ms.

Mounting: Mounting holes provided

Materials: Anodized aluminum, stainless steel

Part No.	Description
2020	Piloted Valve, 1/8" NPT
2020-MG . . .	Piloted Valve, G1/8
2021	Piloted Valve, 1/8" NPT
2021-MG . . .	Piloted Valve, G1/8

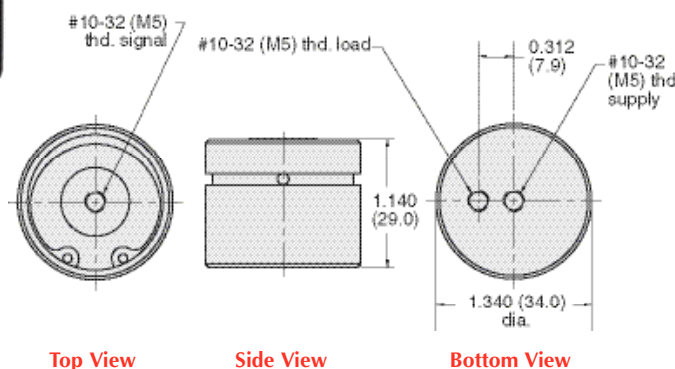


2020 shown with ET Pilot Valve and external pilot supply

Pressure Piloted Snap Action Amplifying Valve



Provides a sharp, clean output signal, even with slow-changing pressure input signals; output is stabilized without chatter or oscillation



Medium: Air

Input Pressure: 3-100 psig/0.2-7 bar max.

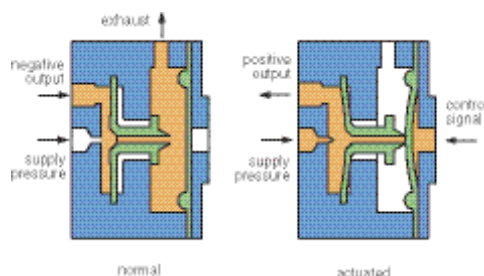
Minimum Pilot Pressure: 1.5" H₂O psig

Maximum Pilot Pressure: 1 psig (28" H₂O")

Air Flow: 0.18 SCFM @ 100 psig; 5l/min @ 6 bar

Bleed Orifice Diameter: 0.010"

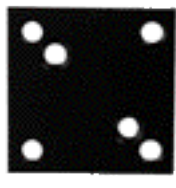
Part No.	Description
3200-A	Amplifying Valve, #10-32
3200-A-M5 . . .	Amplifying Valve, M5



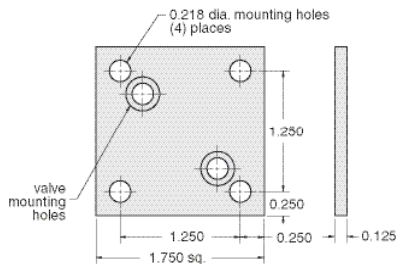


VALVE MOUNTING BRACKETS & ACCESSORIES

Flat Bracket



Flat bracket designed to mount 2010, 2011-1, 2012 and 2013 valves



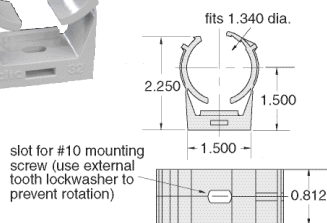
Construction: Black oxide finish, two mounting screws furnished.

Part No.	Description
2010-050	...Flat Bracket

Bracket for Action Relays



Mounting bracket for 3200-A snap action relays.

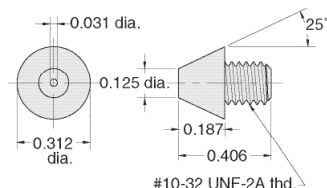


Part No.	Description
3200-006	...Snap Action Relay Bracket

Hex Nipple, 1/8" NPT



#10-32 rubber nozzles for replacement 2011-1 limit valves. #10-32 thread, five to a package

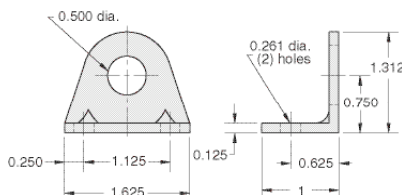


Part No.	Description
2011-012	...Rubber Nozzles

Mounting Bracket, 90°



90° angle, heavy duty Mounting Bracket for Clippard miniature valves



Mounting: 1/2" dia. hole for valve; two 0.261" dia. holes for attaching bracket

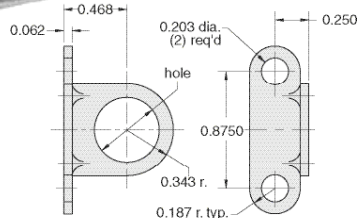
Construction: Stamped from 1/8" thick steel zinc plated

Part No.	Description
15018-2	...Mounting Bracket, 90°

Footed Mounting Bracket



90° angle, Footed Metal Mounting Bracket for Clippard miniature valves



Mounting: 31/64" dia. mounting hole for valve; two 13/64" dia. mounting holes for attaching bracket

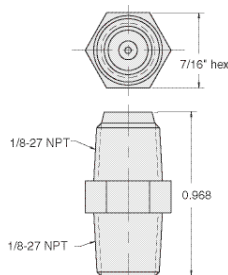
Construction: Stamped from 1/16" thick steel, zinc plated

Part No.	Description
11918-1	...Mounting Bracket, 0.484 Hole
11918-2	...Mounting Bracket, 0.328 Hole

Hex Nipple, 1/8" NPT

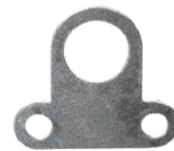


1/8" NPT hex nipple with 40 micron filter / strainer, can be used as a muffler

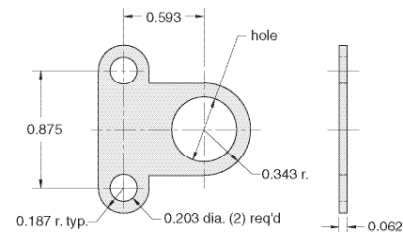


Part No.	Description
9002-01	...Hex Nipple, 1/8" NPT

Flat Metal Bracket



Flat metal Bracket, for mounting Clippard miniature valves



Mounting: two 31/64" dia. mounting hole for valve; two 13/64" dia. mounting holes for attaching bracket

Construction: Stamped from 1/16" thick steel, zinc plated

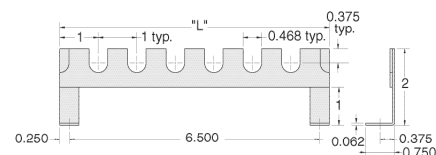
Part No.	Description
11917-1	...Metal Bracket, 0.484 Hole
11917-2	...Metal Bracket, 0.328 Hole

Slotted Mounting Bracket



Quick mounting, slotted drop-in type metal

Mounting Bracket for Clippard miniature valves, regulators, controls, cylinders and switches. Open tops make them ideal for quick, easy assembly of compact pneumatic logic control systems inside small spaces.



Mounting: 31/64" wide slots, with bottom radius. Mounted legs have 0.119" dia. mounting holes in feet

Construction: Machined from 16 gauge steel; spot welded legs; zinc plated.

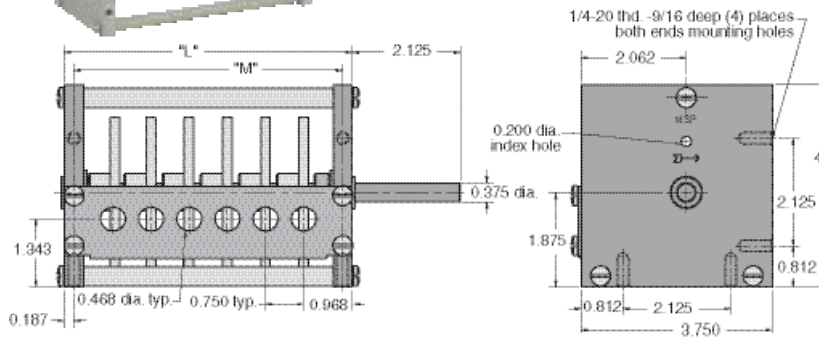
Piping Path: 1" high open area below bracket horizontal member provides space for tubing or piping paths

Part #	# of Slots	"L"
MB-4	4	5"
MB-6	6	7"
MB-8	8	9"
MB-10	10	11"

Miniature Sequence Programmer



Center Shaft Replaceable Cam
Miniature Sequence Programmer



Use: Power may be by machine controlled or by any small geared-down motor. Cams mounted on shaft operate up to 14 Clippard standard 2-, 3-, or 4-way valves (using Cam Follower 11925), and snap action switches such as Clippard ES-1. Valves on unit may control large pilot operated valves, or may be connected directly to cylinders, air limits, or circuitry, eliminating costly switches and solenoid valves.

**** Cams not included**

Furnished with valve mounting bracket and Allen wrench. May be used with standard, adjustable or special cut cams at extra charge. Please specify desired cams when ordering. Use Clippard wrench #11751 for valve mounting.

Recommended Torque: Approx. 2 in. lbs. per cam.

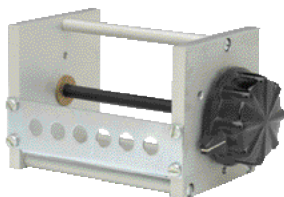
Timing: Cams aligned originally using rod through holes in end blocks and cams. Once locked to shaft, timing is permanently established, rotation of cams actuates valves according to lobes provided. (see cam data)

Construction Features:

- Self-lubricating bronze bearings
- 1/8" black oxidized steel shaft-extendible either end
- One-piece phenolic cams - extendible either end
- Easy cam adjustment - one set screw
- End plates tapped for mounting bottom or rear
- Positive cam indexing
- Heavy aluminum end blocks
- Rigid channel steel mounting bracket for valves, switches

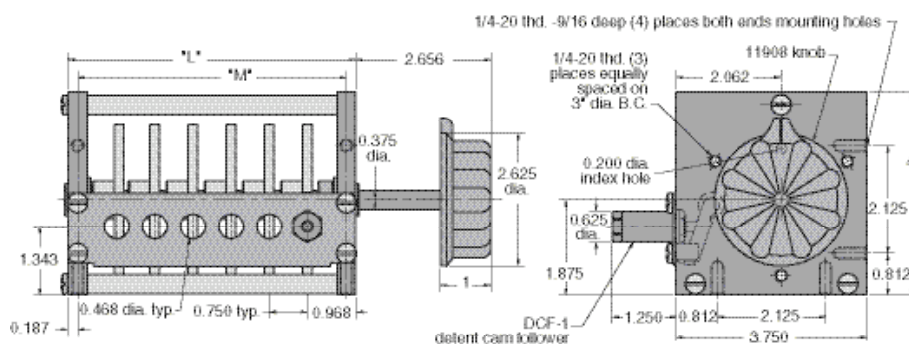
Part No.	# of Cams	"L"	"M"
MSP-4	.4	4.156	3.781
MSP-6	.6	5.656	5.281
MSP-8	.8	7.156	6.781
MSP-10	1.0	8.656	8.281
MSP-12	1.2	10.156	9.781
MSP-14	1.4	11.656	11.281

Miniature Sequence Programmer



Center Shaft Replaceable Cam Detent
Sequence Programmer.

Specify desired standard Clippard programmer cams plus one detent cam.



Construction: Basically the same as the MSP programmers with the addition of a spring plunger detent mechanism, an extended shaft with hand knob, and tapped mounting holes for panel mounting

No. Of Cams*: 3 to 13, depending upon model; six standard models (3, 5, 7, 9, 11 and 13 valve stations respectively)

Mounting: Mount on panel, or by bottom or rear, as required; three (3) 1/4-20 tapped holes provided on front plate for flush mount to panel; additional holes provided on front plate for flush mount to panel; additional holes at bottom and sides of end plates

***Cams not included**

Use: Manually to set a predetermined sequence; or as a stepping switch

Part No.	# of Cams	"L"	"M"
DSP-3	.3	4 5/32	3 25/32
DSP-5	.5	5 21/32	5 9/32
DSP-7	.7	6 5/32	6 25/32
DSP-9	.9	8 21/32	8 9/32
DSP-11	1.1	10 5/32	9 25/32
DSP-13	1.3	11 21/32	11 9/32



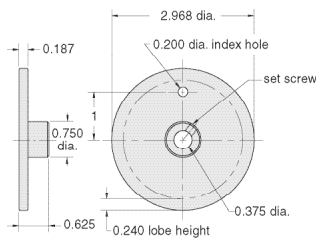
MECHANICAL SEQUENCER CAMS & GAUGES

Minimatic® Cams



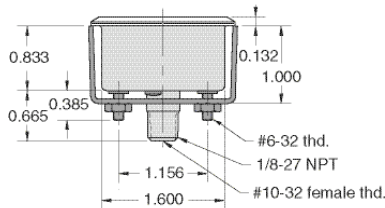
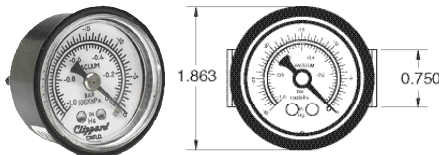
Minimatic Sequence Programmer Cams. Use with Clippard MSP or DSP sequence programmers.

Available in 8 models pre-cut with lobes from 15° to 340°, also blank 360° cam for custom machining.



Order No.	Lobe	Order No.	Lobe
C-33-15	...15°	C-33-180	...180°
C-33-30	...30°	C-33-270	...270°
C-33-60	...60°	C-33-340	...340°
C-33-90	...90°	C-33-360	...uncut*
C-33-120	...120°		

Vacuum Gauge



Gauge measures pneumatic vacuum pressure

Range: Scale reading from 0 to 30 in.Hg. and 0 to -1 bar

Construction: Black case. Plastic face. Dial shows two ranges; Hg in black. bars in red. Built-in pressure snubber.

Ports: Connection located at rear is double threaded O.D. - male thread 1/8" NPT I.D. - tapped for #10-32 fitting

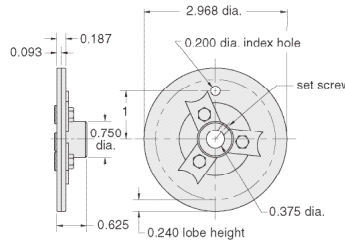
Mounting: Stud mount using 1/8" NPT center stud or panel mount using the zinc plated steel bracket supplied.

Part No.	Description
VG-30	...Vacuum Gauge

Adjustable Cams

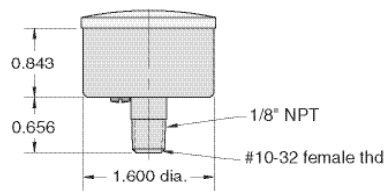


Use with Clippard MSP or DSP sequence programmers. Available in five models with adjustable lobes covering from 30° to 360°, also as a blank for custom machining.



Lobe Adjustment		
Order No.	From	To
A-33-30	...30°	...50°
A-33-45	...45°	...80°
A-33-70	...70°	...130°
A-33-120	...120°	...230°
A-33-210	...210°	...360°
A-33-360	...uncut	

Pressure Gauge



Gauge measures pneumatic system pressure

Range: Scale reading from 0 to 100 psig and 0 to 7 Kg/cm²

Construction: Stainless steel case. Plastic face. Dial shows two ranges; psig in black. Kg/cm² in red. Built-in pressure snubber.

Ports: Connection located at rear is double threaded O.D. - male thread 1/8" NPT I.D. - tapped for #10-32 fitting

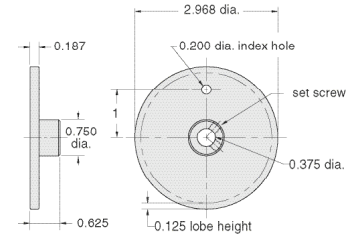
Mounting: Direct with 1/8" NPT

Part No.	Description
PG-101	...Pressure Gauge

Detent Cams

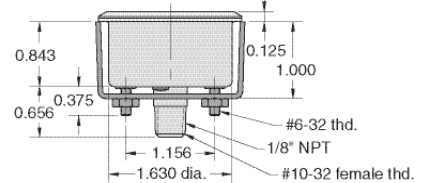
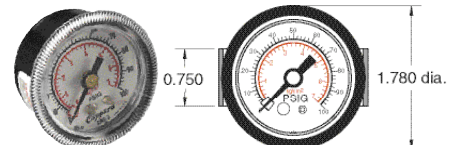


One standard phenolic detent cam with 4, 6, 8, 10 or 12 evenly spaced cuts is required with each DSP. Special cut detent cams are available at nominal cost.



Order No.	Number of Positions
DC-4	...4
DC-6	...6
DC-8	...8
DC-10	...10
DC-12	...12

Pressure Gauge



Gauge measures pneumatic system pressure

Input Pressure: Scale reading from 0 to 100 psig and 0 to 7 Kg/cm²

Construction: Black case. Plastic face. Dial shows two ranges; psig in black. Kg/cm² in red. Built-in pressure snubber.

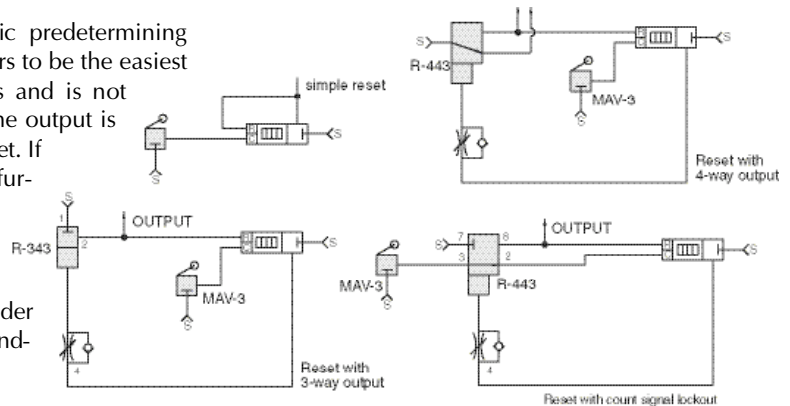
Ports: Connection located at rear is double threaded O.D. - male thread 1/8" NPT I.D. - tapped for #10-32 fitting

Mounting: With zinc plated steel bracket supplied

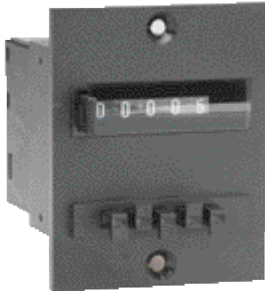
Part No.	Description
PG-100	...Pressure Gauge

Here are some suggested means for resetting pneumatic predetermining counters. While the simple reset shown in Figure 1 appears to be the easiest means of resetting a counter, it has serious drawbacks and is not recommended. As soon as the counter begins to reset, the output is cut off and the counter may or may not be completely reset. If an output is taken from the reset loop (Figure 1), this further jeopardizes the completion of the reset conditions or, in fact, any reset at all.

The following circuits are suggested as means to reset the Clippard PC-3PM. All air logic circuits should be tested under actual conditions to determine their suitability for the intended application.

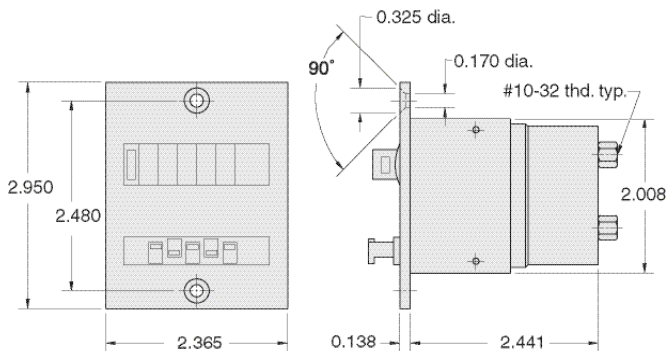


Pneumatic Predetermining Counter



This unit is a highly versatile Pneumatic Predetermining Counter. It counts down from a preselected number and gives a pneumatic signal output when zero is reached. The output can then be used to actuate or initiate machine functions. The PC-3PM can be used in combination with pneumatic logic controls, limit switches, proximity switches, and similar controls.

The counter is preset by depressing the reset button, and at the same time entering the desired preset figure by depressing the preset keys. It can be used to count products being packaged, count machine operations and cause a change in operation after the preset value has been reached.



Display: 5 figures, numerals 0.100" to 0.160"

Medium: filtered compressed air containing no oil

Connections: Z (1) Counter impulse input; Y (2) Reset impulse; P (3) Air input; A (4) Air output signal

Reset: Manual push button and pneumatic spring return

Input Pressure: 30-120 psig

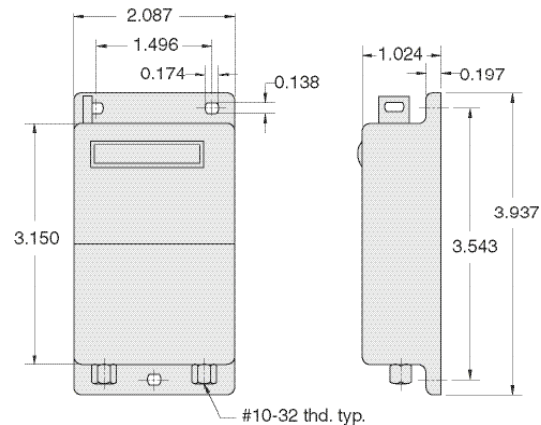
Mounting: Panel mount

Part No.	Description
PT-1SM	6-Digit Pneumatic Totalizing Counter

6-Digit Pneumatic Totalizing Counter



This model is a 6-digit pneumatic totalizing counter. A pneumatic signal or impulse adds the value of 1 to the display. When the indicator reaches its maximum value, the counter starts again at zero. The counter may be reset manually by depressing the reset push button, or by an air impulse. The counter is useful for event recording, piece or part counting, for indicating program steps, cycle counting, machine time logging, and for many other purposes. The PT-1SM is designed for surface mounting.



Display: 6 figures, numerals 0.080" to 0.160"

Medium: filtered compressed air containing no oil

Reset: Manual push button and pneumatic spring return

Input Pressure: 30-120 psig

Mounting: Surface mount

Part No.	Description
PC-3PM	Pneumatic Predetermining Counter

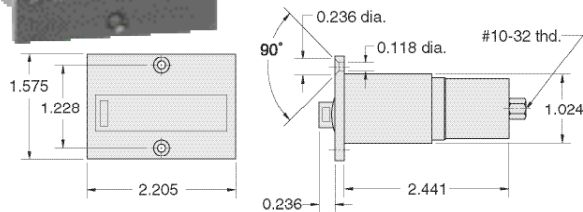


PALM BUTTONS

Pneumatic Totalizing Counter



This unit is a 6-digit pneumatic totalizing counter, designed for panel mounting. Its operation is identical to that of the PT-1SM, but in a different physical arrangement. Both units may be reset manually or by a pneumatic impulse. Operating pressure range is extremely wide (30 to 120 psig).



Display: 6 figures, numerals 0.080" to 0.160"

Medium: filtered compressed air containing no oil

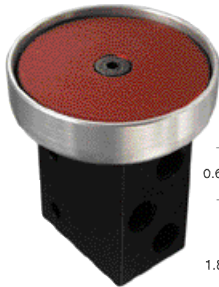
Reset: Manual push button and pneumatic spring return

Input Pressure: 30-120 psig

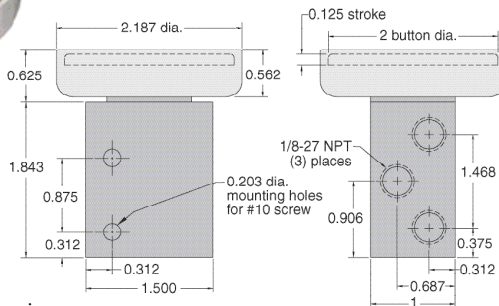
Mounting: Panel mount

Part No.	Description
PT-2PM	Pneumatic Totalizing Counter, 6-Digit

3-Way Poppet Palm Button Valves



3-Way Poppet (MAV-3C) Normally Closed - Bubble Tight Cartridge Valve (- replaceable)



Medium: Air

Stem Travel: 1/8"

Input Pressure: 100 psig max.

Air Flow: 3.5 SCFM @150 psig; 6.0 SCFM @100 psig

Bleed: 0.1 SCFM @ 100 psig

Force to Actuate: 1.75 lb. manual

Ports: 1/8" NPT - exhaust may be muffled or piped away but NOT restricted

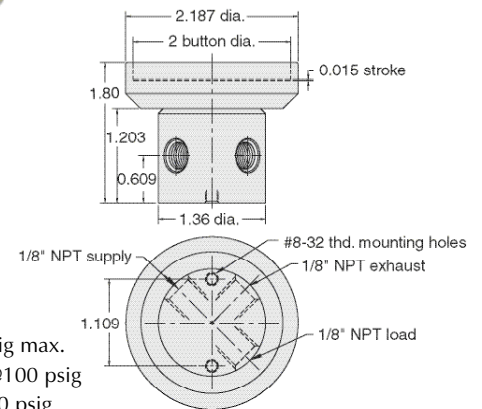
Mounting: Mounting holes provided; optional Bracket Kit #12959 provides additional mounting versatility; valve available with anodized color buttons

Part No.	Description
PB-1-RD	3-Way Poppet Bubble Valve, Red
PB-1-GN	3-Way Poppet Bubble Valve, Green
PB-1-BK	3-Way Poppet Bubble Valve, Black
12959	Bracket Kit

Low Force 3-Way Palm Button Valves



3-way low force poppet valve; Normally closed; depressing button blocks the sensing port causing rapid valve opening



Medium: Air

Input Pressure: 100 psig max.

Air Flow: 22 SCFM - @100 psig

Bleed: 0.8 SCFM @ 100 psig

Force to Actuate: 1 oz. manual

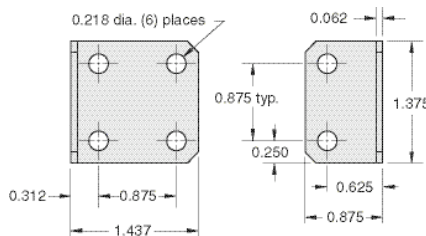
Mounting: Mounting holes provided; optional Bracket Kit #2010-50 provides additional mounting versatility; valve available with anodized color buttons

Part No.	Description
PB-2-RD	Low Force 3-Way Poppet Valve, Red
PB-2-GN	Low Force 3-Way Poppet Valve, Green
PB-2-BK	Low Force 3-Way Poppet Valve, Black
2010-50	Bracket Kit

90° Mounting Bracket



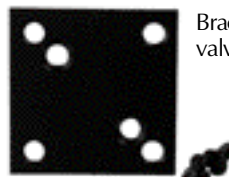
90° angle, heavy duty versatile Mounting Bracket for Clippard palm button valves



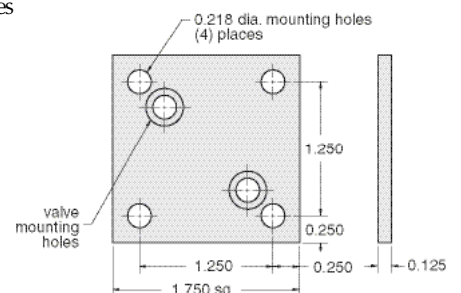
Mounting: Six 7/32" dia. holes on 1/8" centers for attaching valves to bracket
Construction: Stamped from 1/8" thick steel, zinc plated

Part No.	Description
12959	90° Mounting Bracket

Mounting Bracket



Bracket to mount 2010, 2011-1, 2012 and 2013 valves



Black oxide finish, two mounting screws furnished

Part No.	Description
2010-050	Mounting Bracket