Control Valves

CHECK VALVES

- *Allow flow in one direction and automatically prevent flow in the opposite direction*
- *Durable brass body construction*
- *Variety of porting options*

p. 116

EXHAUST VALVES

- *Compact, durable brass construction*
- *#10-32, 1/8" NPT and 1/4" NPT*

p. 117

IN-LINE AIR CHOKES & VOLUME CHAMBERS

- *Provides time delay*
- *Durable brass bodies*

p. 121

MUFFLERS

- *Recommended for controlling noise or speed*
- *Durable brass bodies with porous sintered bronze air mesh*

p. 121

SHUTTLE VALVES

- *Allow flow from one inlet to outlet while blocking the other inlet*
- *#10-32, 1/8" NPT and 1/4" NPT*

p. 127

PULSE VALVE

- *Available in #10-32, 1/8" NPT, or modular versions*
- *Widely used in control circuits*

p. 128

FLOW CONTROLS

- *Available in 4 styles*
- *Ideal for use with pneumatic cylinders*
- *Also used with air pilot valves for delay functions*

pp. 118-120

GAUGES

- *Display two pressure ranges*
- *Built-in pressure snubber*
- *Constructed with a steel case and plastic face*

p. 121

NEEDLE VALVES

- *Used to control the rate of flow in both directions*
- *Various port and needle configurations available*
- *Provide coarse or fine adjustment*

pp. 122-123

PRESSURE REGULATORS

- *Offered in either relieving or non-relieving versions*
- *Variety of adjustment options and mounting styles*

pp. 124-126

SENSORS & AIR INDICATORS

- *Non-contact proximity sensors*
- *Differential pressure sensors*
- *Whisker valves*
- *Single- and multi-pin air indicators*

p. 128

SWITCHES

- *Manual and pneumatic*
- *Convert air pressure to an electrical signal*

p. 129

Many items also available with metric ports.
For more information, visit ***clippard.com/link/metric***

CHECK VALVES

MCV, GCV & JPC SERIES

Multiple varieties of check valves permit flow in one direction only. Valve bodies provide in-line mounting, nitrile seals, and stainless steel springs (standard). The MCV-2 has a "duckbill" seal, the MCV-1 series has a brass poppet, and the MJCV-1 series has a Zytel 80G33 poppet.

Medium Air
Mount Direct or in-line
Temp. Range 32 to 230°F

Not intended for pressure relief
Arrow on valve indicates direction of flow

	Part No.	Inlet	Outlet	Flow @ 50/100 psig	Input Pressure	Pressure to Crack
	MCV-1	#10-32M	#10-32F	6.5/325 l/min	300 psig	1/2 psig
	MCV-1AA	#10-32M	#10-32M			
	MCV-1AB	#10-32F	#10-32M			
	MCV-1BB	#10-32F	#10-32F			
	MCV-2	#10-32F	#10-32F	28 l/min @ 50 psig	100 psig	1 psig
	MJCV-1	1/8" NPTF	1/8" NPTF	20/1,000 l/min	300 psig *(1,000 psig hydraulic max.)*	1/2 psig
	MJCV-1AA	1/8" NPTM	1/8" NPTM			
	MJCV-1AB	1/8" NPTF	1/8" NPTM			
	MJCV-1BA	1/8" NPTM	1/8" NPTF			
	GCV-4	1/4" NPTF	1/4" NPTF	39/2,000 l/min	300 psig	1 1/2 psig
	GCV-5	1/4" NPTF	1/4" NPTF	84/4,200 l/min		

PILOT-OPERATED CHECK VALVES

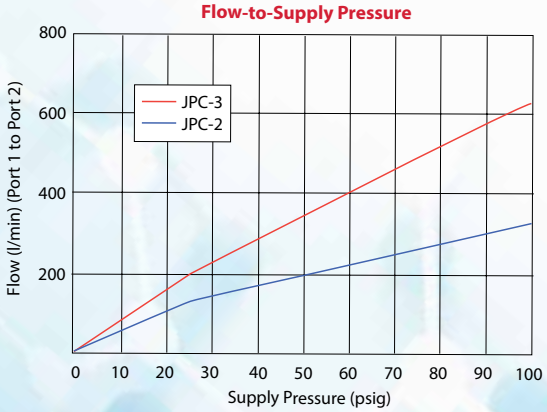
Pilot-operated check valves work as standard check valves but can be opened with an air pilot signal to permit free flow in the normally "checked" direction. This provides the user with a reliable method to check flow in one direction with the ability to remotely signal a free flow through the valve. Clippard's JPC series all-in-one pilot-operated check valves are easy to connect and ideal for any circuit that might benefit from this useful function.

Medium Air, water, or oil
Temp. Range 32 to 230°F
Mount Direct
Material ENP brass, anodized aluminum, stainless steel, nitrile seals

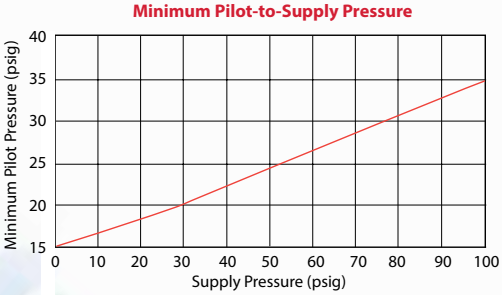
	Part No.	Cyl. Port	Side Port	Pilot Port
	JPC-2NLN	#10-32 M	#10-32 F	#10-32 F
	JPC-2NPN	1/8" NPT	#10-32 F	#10-32 F
	JPC-3FPN	1/8" NPT	1/8" NPT	#10-32 F
	JPC-3FPF	1/8" NPT	1/8" NPT	1/8" NPT
	JPC-3FQF	1/4" NPT	1/8" NPT	1/8" NPT

- **High flow valve means low pressure drop**
- **Uses Clippard's superior poppet design**
- **#10-32 auxiliary port allows ease of plumbing**
- **Side port (port 2) rotates for ease of positioning**
- **Pressure range up to 300 psig** *(see charts below)*

Flow-to-Supply Pressure



Minimum Pilot-to-Supply Pressure



Contact Clippard for pilot-to-supply pressures above 100 psig

EXHAUST VALVES

MEV, JEV & JLEV SERIES

Clippard's exhaust valves provide fast response times and high flow with #10-32, 1/8" and 1/4" NPT ports. These compact, poppet type valves feature a durable brass construction and are 100% tested to assure the highest quality. Their primary function is to increase cylinder speed. However, Clippard's exhaust valves also enable the use of smaller directional valves, allow for longer control lines, and may be used as a shuttle valve.

Medium Air
Material Brass body, nitrile poppet
Working Range 15 to 150 psig
Mounting Direct to cylinder

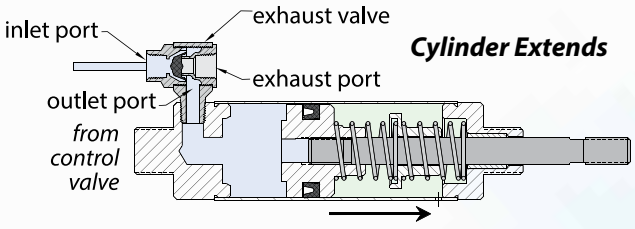
- **Enables use of smaller control valves**
- **15 to 150 psig maximum**
- **Male outlet offers direct connection to cylinder**
- **Low shift ratio**
- **Custom configurations also available**
- **Brass construction with molded nitrile seal**

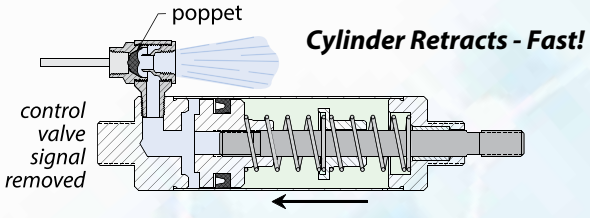
	Part No.	Inlet	Outlet (Cyl.)	Exhaust	Air Flow (Exhaust)
	MEV-2	#10-32F	#10-32M	#10-32F	140 l/min @ 50 psig; 250 l/min @ 100 psig
	JEV-F2F2	1/8" NPTF	1/8" NPTF	1/8" NPTF	1,000 l/min @ 50 psig; 1,600 l/min @ 100 psig
	JEV-F2M2	1/8" NPTF	1/8" NPTM	1/8" NPTF	
	JEV-F2M4	1/8" NPTF	1/4" NPTM	1/8" NPTF	
	JEV-F4M4	1/4" NPTF	1/4" NPTM	1/8" NPTF	
	JEV-F4F4	1/4" NPTF	1/4" NPTM	1/8" NPTF	
	JLEV-F2M2-N	1/8" NPTF	1/8" NPTM	thru holes	
	JLEV-F4M4-N	1/4" NPTF	1/4" NPTM	thru holes	

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 nitrile 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 nitrile 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 airline 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.



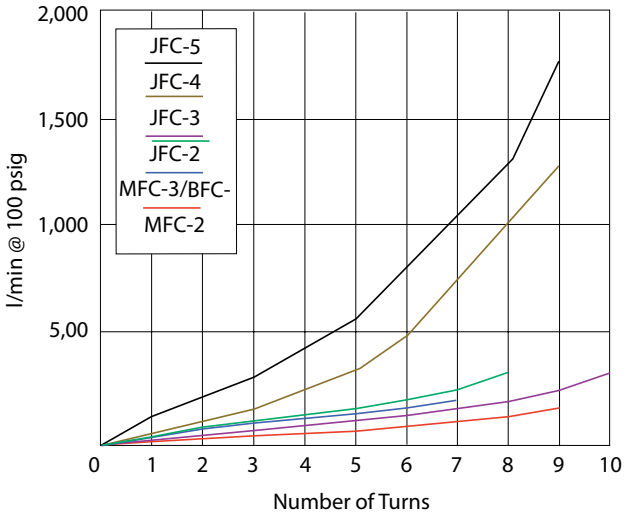


FLOW CONTROLS

JFC & MFC SERIES

Clippard offers five models of adjustable flow controls with #10-32 through 3/8" NPT ports with many connection and adjustment options. 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 illustrates the flow versus the number of needle adjustments turns.

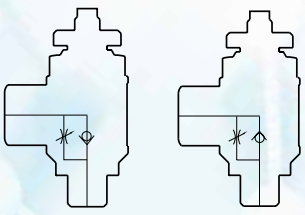
Flow vs. Adjustment Turns



Materials	Aluminum, anodized aluminum, or brass body; nitrile seals
Input Pressure	150 psig max. (MFC-2: 300 psig)
Pressure To Open	Cracks at approx. 2 psig
Mounting	Direct (MFC-2: in-line)

Special configurations are available. Call for further information.

Part No.	Port	Adjustment
#10-32F Thread, 200 l/min @ 100 psig		
 **Brass**		
MFC-2	#10-32F	Knurled Knob
 *Meter In* **ENP brass and anodized aluminum**		
MFC-3A	#10-32	Screwdriver Slot
MFC-3AK		Knurled Knob
MFC-3AR		Recessed Needle
MFC-3AK shown		
 *Meter Out* **ENP brass and anodized aluminum**		
MFC-3B	#10-32	Screwdriver Slot
MFC-3BK		Knurled Knob
MFC-3BR		Recessed Needle
MFC-3B shown		



Part No.	Port	Adjustment
1/8" NPTM Thread, 310 l/min @ 100 psig		
Meter Out **ENP brass**		
 JFC-2A	1/8" NPT	Knurled Knob
JFC-3A	1/8" NPT	Knurled Knob
JFC-3AR	1/8" NPT	Recessed Needle
JFC-2A shown		
Meter In **ENP brass**		
 JFC-2B	1/8" NPT	Knurled Knob
JFC-3B	1/8" NPT	Knurled Knob
JFC-3BR	1/8" NPT	Recessed Needle
1/4 " NPTM Thread, 1250 l/min @ 100 psig		
Meter Out **Anodized Aluminum**		
 JFC-4K	1/4" NPT	Knurled Knob
JFC-4R	1/4" NPT	Recessed Needle
JFC-4K shown		
3/8" NPTM Thread, 1700 l/min @ 100 psig		
Meter Out **Anodized Aluminum**		
 JFC-5K	3/8" NPT	Knurled Knob
JFC-5R	3/8" NPT	Recessed Needle
JFC-5K shown		

FLOW CONTROLS

PQ SERIES

PQ-CV & PQ-CI

PQ-FV

PQ-FV in-line flow controls can be easily added to existing circuitry and are lightweight and compact in size. Since it is a tube-to-tube connection, in-line flow controls may be installed as a meter-in or meter-out device.

Clippard PQ-C elbow controls are ideal for low cost and lightweight applications which require mounting directly to an NPT port on a cylinder or valve.

In the meter-out versions, intake air flows freely through the flow control; exhaust air is metered out through an adjustment screw. With the meter-in series, air is metered in through an adjustment screw; exhaust air flows freely. Control is varied through a finely threaded adjustment screw. A locking nut is provided so it can be secured in its final setting.

Medium	Air
Input Pressure	0 to 150 psig
Vacuum	0 to 29.5" Hg
Ports	#10-32, 1/8" NPT, 1/4" NPT, 3/8" NPT, 1/2" NPT
Adjustment	Knurled knob
Material	Nickel plated brass, plastic resin, stainless steel gripper ring, nitrile seals

- **Small, compact size**
- **Design flexibility and fast response**
- **Complete rotation of the valve body around the body allows for optimum positioning of tubing**
- **Special adjustment needle design allows large adjustment ranges with high precision**
- **Ideal for use with polyurethane, nylon, polyethylene, and polypropylene tubing**

RIGHT ANGLE METER-OUT CONTROLS

Part No.	Tubing Size	Thread
PQ-CV04N	1/8"	#10-32
PQ-CV04P	1/8"	1/8" NPT
PQ-CV05N	5/32"	#10-32
PQ-CV05P	5/32"	1/8" NPT
PQ-CV08N	1/4"	#10-32
PQ-CV08P	1/4"	1/8" NPT
PQ-CV08Q	1/4"	1/4" NPT
PQ-CV12Q	3/8"	1/4" NPT
PQ-CV12W	3/8"	3/8" NPT
PQ-CV16Q	1/2"	3/8" NPT

RIGHT ANGLE METER-IN CONTROLS

Part No.	Tubing Size	Thread
PQ-CI04N	1/8"	#10-32
PQ-CI04P	1/8"	1/8" NPT
PQ-CI05N	5/32"	#10-32
PQ-CI05P	5/32"	1/8" NPT
PQ-CI08N	1/4"	#10-32
PQ-CI08P	1/4"	1/8" NPT
PQ-CI12Q	3/8"	1/4" NPT
PQ-CI12W	3/8"	3/8" NPT
PQ-CI16W	1/2"	3/8" NPT

IN-LINE CONTROLS

Part No.	Tubing Size	Dia.
PQ-FV04	1/8"	0.125
PQ-FV05	5/32"	0.125
PQ-FV06M	6 mm	0.170
PQ-FV08	1/4"	0.170
PQ-FV08M	8 mm	0.170
PQ-FV12	3/8"	0.170
PQ-FV16	1/2"	0.170

FLOW CONTROLS

BFC, BNV & BNM SERIES

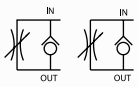
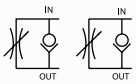
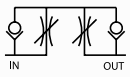
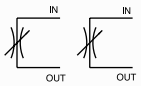
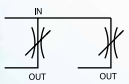
Clippard's block flow control and needle valves have a variety of features that offer extra versatility for unique applications. These precision-made valves offer high performance, low cost, reliability, and ease of installation. Except for BFC-2C, each valve is independent of the other, sharing only a common body. This simplifies mounting while allowing separate pressures and/or gases to be used. Each needle adjustment is smooth, exact, and includes a locking ring to prevent tampering.

Block flow control valve bodies are machined, 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 nitrile. Block flow controls and needle valves are ideal for controlling double-acting cylinders.

Stations	2, 4, 6, or 8
Adjustment	Screwdriver slot or knurled knob
Material	Anodized aluminum, stainless steel needle, ENP brass sleeve, nitrile seals
More Info	clippard.com/link/block-flow-controls

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

Specification same as MFC-3 (p.118)

		Style	No. of Stations	Screwdriver Slot	Knurled Knob
	BFC-A 	Block Flow Controls Meter Out Flow	2 4 6 8	BFC-2A BFC-4A BFC-6A BFC-8A	BFC-2AK BFC-4AK BFC-6AK BFC-8AK
	BFC-B 	Meter In Flow	2 4 6 8	BFC-2B BFC-4B BFC-6B BFC-8B	BFC-2BK BFC-4BK BFC-6BK BFC-8BK
		2 Valves Common Meter In/Out	2	BFC-2C	BFC-2CK
		Block Needle Valves	2 4 6 8	BNV-2N BNV-4N BNV-6N BNV-8N	BNV-2NK BNV-4NK BNV-6NK BNV-8NK
		Block Needle Manifolds (Valves)	2 4 6 8	BNM-2N BNM-4N BNM-6N BNM-8N	BNM-2NK BNM-4NK BNM-6NK BNM-8NK

GAUGES, AIR CHOKES, VOLUME CHAMBERS & MUFFLERS

VACUUM GAUGE

Gauge measures pneumatic vacuum pressure; mounting bracket included.

Range	Scale reading from 0 to 30" Hg and 0 to -1 bar
Construction	Nickel-plated steel case. Dial shows two ranges: Hg (black) and bar (red). Built-in pressure snubber.
Ports	Double threaded: O.D. male thread 1/8" NPT, I.D. tapped for #10-32 fitting

Part No.	Description
VG-30	Vacuum Gauge

PRESSURE GAUGE

Gauge measures pneumatic system pressure; stud mounted.

Range	Scale reading from 0 to 100 psig and 0 to 6.9 bar
Construction	Steel case. Dial shows two ranges: psig (black) and bar (red). Built-in pressure snubber.
Ports	Double threaded: O.D. male thread 1/8" NPT, I.D. tapped for #10-32 fitting

Part No.	Description
PG-101-BK	Pressure Gauge, Black Case
PG-101-NP	Pressure Gauge, Nickel-Plated

PRESSURE GAUGE

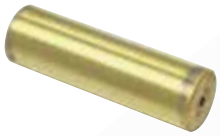
Gauge measures pneumatic system pressure; mounting bracket included.

Range	Scale reading from 0 to 100 psig and 0 to 6.9 bar
Construction	Steel case. Dial shows two ranges: psig (black) and bar (red). Built-in pressure snubber.
Ports	Double threaded: O.D. male thread 1/8" NPT, I.D. tapped for #10-32 fitting

Part No.	Description
PG-100	Pressure Gauge

IN-LINE VOLUME CHAMBER

Used for providing a time delay in pneumatic circuits.



Medium: Air

Material: Brass

Input Pressure: 150 psig

Mounting: Direct or in-line; mounting clamp with MAT-2.0 and 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 charts below show total time vs. volume for these combinations.

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

Time in Seconds		
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.

Part No.	Description
MAT-(size)	In-Line Volume Chamber, #10-32

Specify size per chart

IN-LINE FIXED ORIFICE AIR CHOKES

Each choke is calibrated for precise flow

Medium: Air

Material: Brass

Working Range: 0 to 300 psig max.

Part No.	Description
MAC-A	Air Choke, 0.0135" Hole
MAC-B	Air Choke, 0.010" Hole
MAC-C	Air Choke, 0.0075" Hole
MAC-D	Air Choke, 0.006" Hole

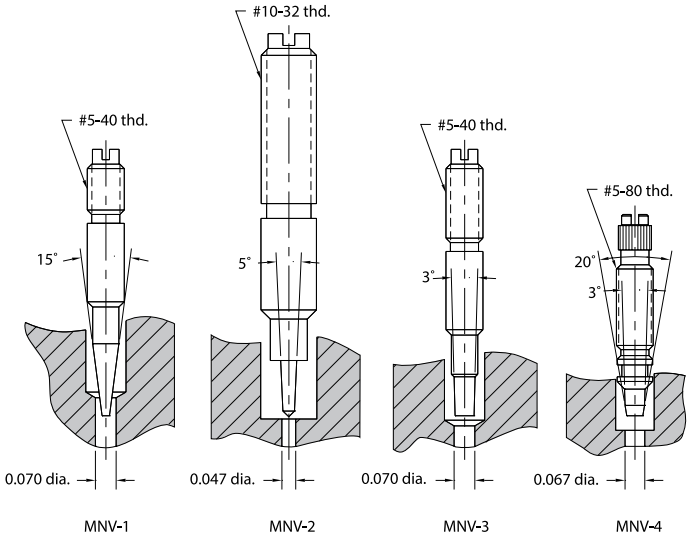
SPEED CONTROL MUFFLERS

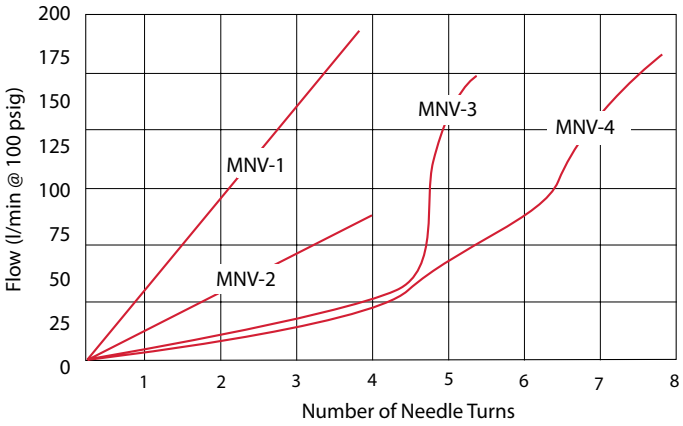
Speed control mufflers provide a variation of metering air flow at an acceptable sound level on valve exhaust ports. Knurled knob length based on minimum thread engagement. Solid brass body, sintered bronze muffler (40 micron).

Part No.	Thread
SCM-P	1/8-27 NPT
SCM-Q	1/4-18 NPT
SCM-W	3/8-18 NPT
SCM-Z	1/2-14 NPT

NEEDLE VALVES

MNV SERIES





Adjustable control needle valves restrict flow in both directions. There are 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
Material	Brass body, stainless steel needle, nitrile seal **MNV-4:** Anodized aluminum body
Temperature Range	32 to 230°F

	Part No.	Needle Angle	Inlet-Outlet	Input Pressure	Air Flow	Mount	Adjustment
	MNV-1	15°	#10-32-#10-32	2,000 psig max.	85 l/min @ 50 psig; 170 l/min @ 100 psig	Direct	Screwdriver slot
	MNV-1K						Knurled knob
	MNV-1P		1/8" NPT-#10-32				Screwdriver slot
	MNV-1KP						Knurled knob
	MNV-2	5°	#10-32-#10-32	300 psig max.	28 l/min @ 50 psig; 71 l/min @ 100 psig	In-line (#15/32-32 thread)	Screwdriver slot
	MNV-2K						Knurled knob
	MNV-3	3°	#10-32-#10-32	2,000 psig max.	71 l/min @ 50 psig; 140 l/min @ 100 psig	Direct	Screwdriver slot
	MNV-3K						Knurled knob
	MNV-3P		1/8" NPT-#10-32				Screwdriver slot
	MNV-3KP						Knurled knob
	MNV-4	3°	#10-32-#10-32	300 psig max.	140 l/min @ 100 psig	Direct	Screwdriver slot
	MNV-4K						Knurled knob
	MNV-4C	3°	Cartridge	150 psig max.	140 l/min @ 100 psig	Cartridge	Screwdriver slot
	MNV-4CK						Knurled knob

NEEDLE VALVES

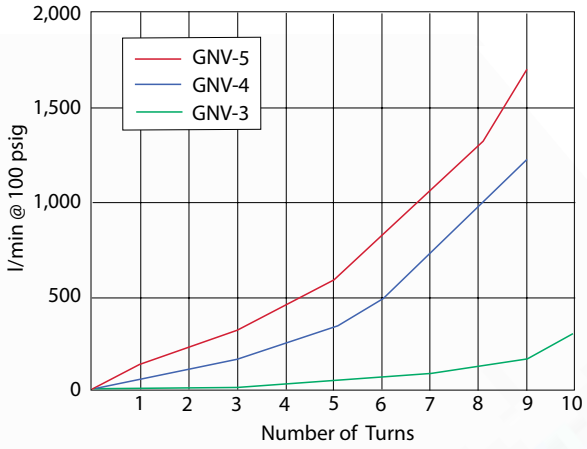
GNV SERIES

Needle valves are used to control the rate of flow in a pneumatic system by allowing flow in both directions. The threaded adjustable needle can be screwed in to block the actuator. As a result, the flow of air not only decreases but backs up inside the actuator, preventing the actuator from generating more pressure due to the resistance. Material enters the input port, travels through an orifice and out the output port. Needle valves can be used to reverse the flow of a system or to maintain a constant flow rate. Clippard's GNV series needle vales are available with multiple port sizes, flow rates, mounting options, and adjustment styles.

Medium	Air, water, or oil
Input Pressure	300 psig max.
Mounting	Direct, in-line, or cartridge style
Material	Electroless nickel plated brass body and needle, anodized aluminum housing, nitrile seals (FKM available)

- **Provide bidirectional flow control**
- **Rugged and compact design**
- **Multiple mounting options**
- **Ideal for use with push-quick fittings**
- **Rotating input allows 360° positioning**
- **Adjustment by recessed slotted needle or knurled knob**

	Part No.	Threads	Mount	Adjustment
	GNV-3R	1/8" NPT	Direct	Screwdriver Slot
	GNV-3K			Knurled Knob
	GNV-4R	1/4" NPT	Direct	Screwdriver Slot
	GNV-4K			Knurled Knob
	GNV-5R	3/8" NPT	Direct	Screwdriver Slot
	GNV-5K			Knurled Knob
	GNV-3RI	1/8" NPT	In-Line	Screwdriver Slot
	GNV-3KI			Knurled Knob
	GNV-4RI	1/4" NPT	In-Line	Screwdriver Slot
	GNV-4KI			Knurled Knob
	GNV-5RI	3/8" NPT	In-Line	Screwdriver Slot
	GNV-5KI			Knurled Knob
	GNV-3RC	1/8" NPT	Cartridge	Screwdriver Slot
	GNV-3KC			Knurled Knob
	GNV-4RC	1/4" NPT	Cartridge	Screwdriver Slot
	GNV-4KC			Knurled Knob
	GNV-5RC	3/8" NPT	Cartridge	Screwdriver Slot
	GNV-5KC			Knurled Knob



AIR FLOW

GNV-3: 310 l/min @ 100 psig
GNV-4: 1,250 l/min @ 100 psig
GNV-5: 1,700 l/min @ 100 psig

CLIPPARD PUSH-QUICK FITTINGS provide a simple method to connect pneumatic components to each other and system piping, and accept both flexible hose and rigid tubing. Both fittings and tubing are available in many styles, sizes and colors.

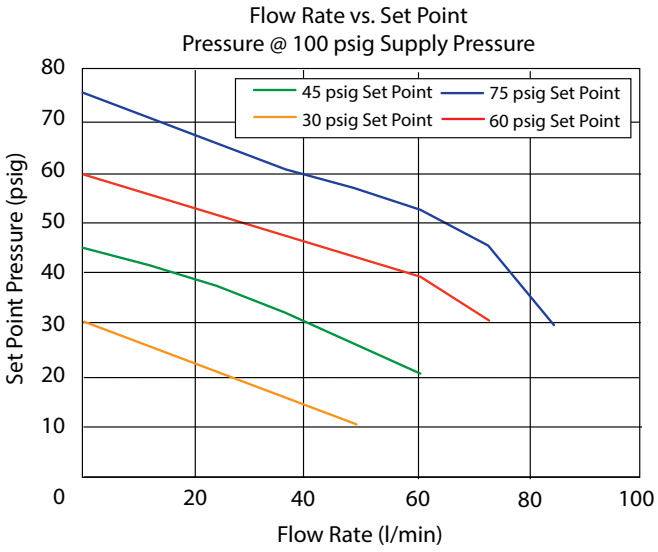
PRESSURE **REGULATORS**

DR-1 PRECISION REGULATORS*

COMING SOON!

Building on more than 50 years of experience designing and manufacturing miniature regulators, Clippard is responding to your need for pressure regulation that is more stable and more accurate. Compatible with a variety of liquids and gases, the new DR-1* series raises the bar on performance and value for miniature pressure regulators.

For the latest details, visit clippard.com/link/dr1



- **Exceptional repeatability—± 0.1 psi**
- **Set point sensitivity 0.1 psi**
- **Set point stability: 0.1 psi**
- **Features a non-relieving design**

**Specifications not yet final. Visit clippard.com/link/dr1 for the latest details.*

COMPARISON CHART

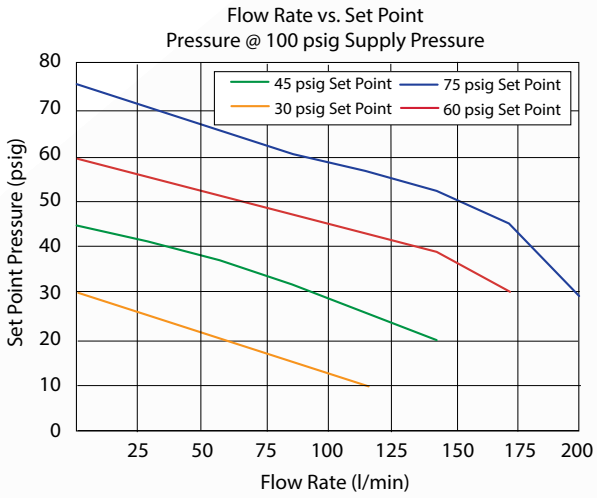
	DR-1 Series*	DR-2 Series	MAR-1 Series
			
Accuracy	Exceptional	Excellent	Fair
Repeatability	Exceptional	Exceptional	Fair
Flow Rate vs. Set Point Pressure	Best	Good	Fair
Lifespan	Excellent	Excellent	Excellent
Cost	$ $ $	$ $	$

DR-2 PRECISION REGULATORS

When Clippard invented miniature regulators in 1962, the MAR series (p. 126) became very popular as a simple, robust, cost-effective regulator with exceptionally long life. Today, the new DR-2 series maintains this same flow, performance, and durability while providing greater accuracy and repeatability in a sleek, compact package.

Regulators are offered in either relieving or non-relieving versions. The relieving design maintains a constant pressure output even when downstream conditions change, while non-relieving regulators do 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 can increase due to a downstream event. Non-relieving versions can also accommodate compatible liquid applications.

- **Designed for applications where zero air consumption is required (non-bleed)**
- **Exceptional accuracy and repeatability**
- **Excellent corrosion resistance**
- **Relieving and non-relieving designs**
- **Manifold mount option**
- **Features non-rising internal adjustment**



Medium	**Relieving:** Air **Non-Relieving:** Air, water, or oil
Input Pressure	300 psig max.
Repeatability	±0.1 psi typical (±0.15 psi max.)
Set Point Sensitivity	0.1 psi
Set Point Stability	0.1 psi
Temperature Range	32 to 230˚F
Mounting	#15/32-32 thread; nuts & lockwashers furnished
Material	Electroless nickel plated brass body, FKM seals, PFPE lube, stainless steel adjustment screw and spring
Adjustment	An extended 0.25" shaft accepts an adjustment knob or furnished with an exposed screwdriver slot with micro-adjustment (32 pitch thread). Knobs ordered separately (#AK4-A)
More Details	clippard.com/link/dr2

Not recommended for applications where accurate dead-end, no flow is required.

ORDERING INFORMATION

Example Part Number:
DR-2BP-5

Consult Clippard for special configurations, preset options, or metric versions.

Inlet	Outlet	Base Part No.
#10-32 Female	#10-32 Female	DR-2
1/8" NPT Male	#10-32 Female	DR-2P
#10-32 Male	Manifold	DR-2M
Cartridge	Cartridge	DR-2C
1/8" NPT Male	1/8" NPT Female	DR-2BP

□ □ - □

Type

(blank)	Relieving
NR	Non-Relieving

Max. Pressure Range

(blank)	2 - 100 psig
1	0.5 - 10 psig
5	1 - 50 psig

PRESSURE **REGULATORS**

MAR-1 REGULATORS

Since 1962, the MAR-1 has remained a popular choice as a simple, robust, cost-effective regulator in a small package with exceptionally long life. As regulator applications continue to increase, Clippard continues to meet the demand with a variety of new models, options and improvements.

Regulators are offered in either relieving or non-relieving versions. The relieving design maintains a constant pressure output even when downstream conditions change, while non-relieving regulators do 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 can increase due to a downstream event. Non-relieving versions can accommodate compatible liquid applications.

Medium	**Relieving:** Air **Non-Relieving:** Air, water, or oil
Input Pressure	300 psig max.
Air Flow	85 l/min @ 50 psig; 140 l/min @ 100 psig
Temperature Range	32 to 230˚F
Mounting	#15/32-32 thread
Material	Brass body, nitrile seals (FKM available), stainless steel stem and spring
Adjustment	Knob with micro-adjustment (40 pitch thread); screwdriver slot and plastic adjustment also available **1C & 1CP:** As plunger is depressed, pressure increases proportionally to the travel; when plunger is released, input is closed and output pressure is exhausted to atmosphere; 7/32" plunger travel
More Details	clippard.com/link/mar

Knurled Knob ***Screwdriver Slot*** ***Plastic Knob***

FKM seals and electroless nickel plating also available

ORDERING INFORMATION

Inlet	Outlet	Base Part No.
#10-32 Female	#10-32 Female	MAR-1
1/8" NPT Male	#10-32 Female	MAR-1P
#10-32 Male	Manifold	MAR-1M
Cartridge	Cartridge	MAR-1R
1/8" NPT Male	1/8" NPT Female	MAR-1BP

Example Part Number:
MAR-1BP-2

❑ ❑ ❑ - ❑

Adjustment

(blank)	Knurled knob
K	Plastic knob
F	Screwdriver slot
C	Plunger style*

**Available in relieving version for MAR-1 and MAR-1P only*

Type

(blank)	Relieving
NR	Non-Relieving

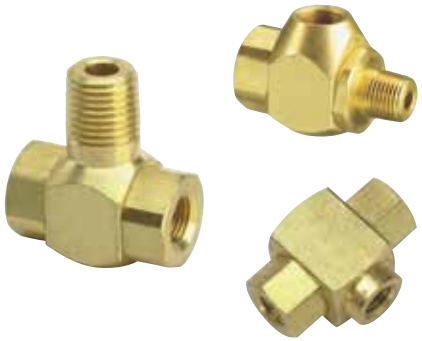
NR not available on C & CP models

Max. Pressure Range

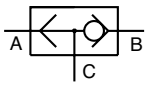
(blank)	10 to 100 psig
2	10 to 20 psig
3	10 to 30 psig
4	10 to 40 psig
5	10 to 50 psig
6	10 to 60 psig
7	10 to 70 psig

SHUTTLE VALVES

MSV & JSV SERIES



#10-32, 1/16" NPT,
1/8" NPT & 1/4" NPT Ports



These three shuttle valve models 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 in-line.

Medium	Air, water, or oil
Input Pressure	**MJSV/JSV:** 300 psig max.; MSV: 250 psig max.
Mounting	Direct or in-line
Exhaust	Through port where pressure was last applied
Material	Brass body, stainless steel shuttle, nitrile seal **MJSV:** Zytel® 80G33 shuttle; **MSV:** Brass shuttle
Note	*Shuttle valves should not be used as a pressure selector*

	Part No.	Inlet 1	Inlet 2	Outlet	Force to Shift	Air Flow
	MJSV-1	1/8" NPTF	1/8" NPTF	1/8" NPTF	1/2 psig	400 l/min @ 50 psig; 740 l/min @ 100 psig
	JSV-2FPF	1/8" NPTF	1/8" NPTM	1/8" NPTF	1 psig	850 l/min @ 50 psig; 1,400 l/min @ 100 psig
	JSV-2PFF	1/8" NPTF	1/8" NPTF	1/8" NPTM		
	JSV-2WFF	1/8" NPTF	1/8" NPTF	1/4" NPTM		
	JSV-2WYY	1/4" NPTF	1/4" NPTF	1/4" NPTM		
	JSV-2YFF	1/8" NPTF	1/8" NPTF	1/4" NPTF		
	JSV-2YWY	1/4" NPTF	1/4" NPTM	1/4" NPTF		
	JSV-2YYY	1/4" NPTF	1/4" NPTF	1/4" NPTF		
	MSV-1	#10-32F	#10-32F	#10-32M	1/2 psig	140 l/min @ 50 psig; 270 l/min @ 100 psig
	MSV-1FFF	#10-32F	#10-32F	#10-32F		

Custom Solutions

Need a product that fits your application perfectly? Clippard can design or modify standard products to suit your ***exact*** needs.

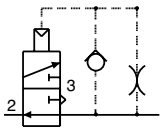
Call 877-245-6247 today to discuss your application and specific requirements.

PULSE VALVES, SENSORS & AIR INDICATORS

PULSE VALVES

A Normally-Open 3-Way valve that closes shortly after being pressurized and remains closed until supply pressure is exhausted and re-pressurized. Widely used in control circuits.

Part No.	Description
PV-1	Pulse Valve, #10-32
PV-1P	Pulse Valve, 1/8" NPT



Medium	Air
Input Pressure	40 to 150 psig max.
Mounting	1/8" NPT thread; nut furnished
Volume Chamber	#10-32
Operation	Converts continuous supply of inlet air into pulse of approx. 100 ms
Material	ENP brass body and poppet, nitrile seals, stainless steel spring

Time delay may be increased with Clippard volume chambers (not to exceed 3 cu. in.)

NON-CONTACT GAP SENSOR

Will sense any flat or round object with a 1/32" min. radius. Produces positive signal when no object present; negative signal when an object interrupts its sensing system.

Medium	Air
Input Pressure	0.5 to 5 psig
Output	-3" to 26" H_2O @ 4 psig
Frequency Response	1,000 cpm
Air Consumption	7.1 l/min @ 4 psig
Sensing Capability	Flat or curved surfaces with 1/32" min. radius. May be used for up to 4" gap with an additional auxiliary jet
Connections	#10-32 female
Material	Solid brass bright dipped

Part No.	Description
1030	Non-Contact Gap Sensor, #10-32

NON-CONTACT AIR PROXIMITY SWITCH

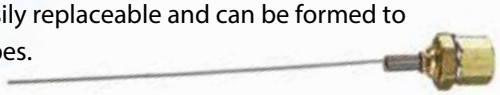
No moving parts—will sense any flat or curved object which presents a sensing surface of 1/4" or more to the sensing nozzle.

Medium	Air
Input Pressure	4 to 10 psig
Proximity Distance	0.100" nominal
Output Signal @ 4 psig Supply	Normal: -2" H_2O Actuated: 7-1/2" H_2O
Frequency Response	500 CPM
Air Consumption	8.5 l/min
Sensing Capability	Flat or curved surfaces with 1/8" min. radius
Connections	#10-32 female
Material	Solid brass bright dipped

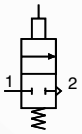
Part No.	Description
1022	Non-Contact Air Limit Switch, #10-32

2-WAY N-C WHISKER VALVES

For use with bleed pressure piloted control circuits. Whisker is easily replaceable and can be formed to different shapes.



Medium	Air
Input Pressure	150 psig
Air Flow	28 l/min @ 50 psig; 42 l/min @ 100 psig
Force for Stem Travel	1/4 oz. approx.
Bleed	To atmosphere around whisker stem
Whisker	Stainless steel, approx. 3" length.



Part No.	Description
MWV-1	Normally-Closed Whisker Valve, #10-32
MWV-1P	Normally-Closed Whisker Valve, 1/8" NPT

MULTI-PIN AIR INDICATOR

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

Medium	Air only
Input Pressure	15 to150 psig
Response	Approx. 10 ms @ 50 psig
Filtration	40 micron recommended
Panel Thickness	3/16" max.
Mounting	IND-3: Panel mount, #15/32-32 nut & lockwasher provided; IND-3P: Direct mount, 1/8" NPT hole

Part No.	Description
IND-3-(color)	Multi-Pin Air Indicator, #10-32
IND-3P-(color)	Multi-Pin Air Indicator, 1/8" NPT

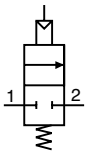
GN - ● ***WH -*** ○ ***RD -*** ● ***YL -*** ●

WATER DRAWBACK VALVES

When this N.C. valve closes, a spring biased internal piston draws back a small volume on outlet side (approx. 6-7" in 1/8" I.D. tube) preventing overflow.

Part No.	Description
WDV-2	Poppet Valve with Air Pilot, #10-32
WDV-2P	Poppet Valve with Air Pilot, 1/8" NPT

Medium	Water or other light liquids
Input Pressure	100 psig max.
Pilot Pressure	25 psig min.
Flow	74 cu. in. H_2O per min. @ 80 psig
Drawback	0.07 cubic inches (1.2 mL)
Mounting	In-line
More Details	clippard.com/link/drawback



Ideal for use in quenching or water spray applications.

PRESSURE ACTUATED SWITCHES

These miniature (**MAS**) and sub-miniature (**SAS**) air switches utilize a single pole, double throw (SPDT) electrical switch. Manual models may be used with Clippard air pilot or push-button actuators.

Medium	Air
Input Pressure	5 to 150 psig
Pilot Port	#10-32, 1/8" NPT
Mounting	External thread and nut for panel, bracket, or bulkhead mounting—5/8-32 pressure actuated, 15/32-32 manually operated
Accuracy	Actuation pressures listed are nominal values only*
More Details	clippard.com/link/sas-mas

**For applications where a tight tolerance for actuation or deactuation is needed, please call 877-245-6247.*

ORDERING INFORMATION

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SAS *Sub-Miniature Air Switch*
MAS *Miniature Air Switch*

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

Nominal Actuation Pressure*
- **06** 6 psig
- **20** 20 psig
- **40** 41 psig
- **65** 65 psig
- **MN** Manual

Inlet Port
- **Blank** #10-32 thd.
- **F** 1/8" NPT female
- **P** 1/8" NPT male

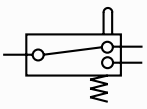
Switch Terminals

SAS
- **0** No switch
- **1** 110 series Q.C.

MAS
- **0** No switch
- **2** 187 series Q.C.
- **3** Screw terminals

SINGLE POLE ELECTRICAL SWITCH

ES series switches are used in conjunction with MPA series actuators (p. 90)



Part No.	Description
ES-1	Single Pole, Double Throw Snap-Action Electrical Switch
15601	Terminal Cover

Stem Travel	1/8"
Rating, AC	120, 240, or 480 volts (15 amperes)
Rating, DC	125 volts (0.5 amperes) 250 volts (0.25 amperes)
Approvals	UL, CE
Mounting	#15/32-32 thread; nut and lockwashers furnished; two 0.140" dia. mounting holes in body
More Details	clippard.com/link/es-1

WORLDWIDE DISTRIBUTION

Clippard products are distributed through our worldwide network of sales and engineering specialists. All of our representatives are stocking distributors and keep a variety of Clippard products on hand to fill your immediate needs. Each of our distributors are backed by our own large inventory to ensure quick delivery.

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CA PROPOSITION 65

All products shipped to or sold to consumers in California include Proposition 65 documentation with the shipment and reference our website. There are over nine hundred (900) chemicals on the Proposition 65 list, some of which are used in Clippard materials and/or processes. Although not all products contain chemicals within the list, Clippard is being cautious and diligent in complying with the California Law.

As of August 30, 2018, chemicals we are aware of that are listed within Proposition 65 are detailed online at clippard.com/link/prop65, or for additional information please contact tech@clippard.com.