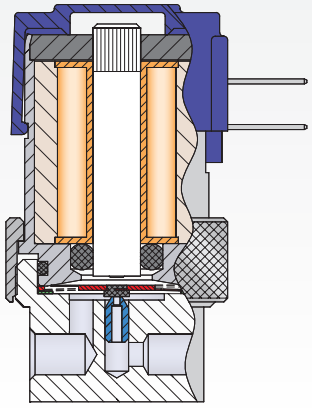
Clippard

PROPORTIONAL VALVES

Proportional Valves

EVP Series Proportional Valve

Precision-built utilizing Clippard's renowned Spider technology with the additional capability for proportional control. The EVP series valve provides air or gas flow control and varies the output flow based on the current input to the solenoid. Controllability and overall value are the main features of the EVP series. The consistent gain of this valve provides a high degree of control for many applications.



p. 4

3 voltage coils

≤10% hysteresis

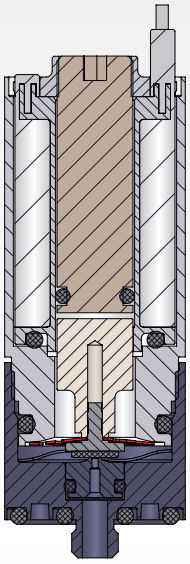
~±10% of given flow target

Fast response

Long life

DVP Series Proportional Valve

Like the EVP series, the DVP also provides proportional control utilizing Clippard's renowned Spider technology. In addition, the DVP series offers an extremely high cycle life, fast response, linear flow gain, low power consumption, and flows over 60 l/min. The DVP provides air or gas flow control and varies the output flow based on the current input to the solenoid.



p. 10

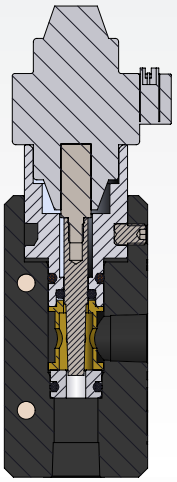
Higher flow (over 60 l/min)

Fast response

Long life

SCPV Series
Stepper Needle Valve

Utilizing the industry's most robust and powerful linear actuator, Clippard's high flow SCPV series stepper-controlled proportional valve is ideal for critical medical, analytical, and industrial automation applications. The SCPV is an excellent choice where high resolution, high flow, low hysteresis, and variable control of inert gases is required. In addition, the simple design is customizable to allow for unique flow curves more specific to your application needs.



p. 14

High accuracy stepper-driven needle valve

Fully customizable design

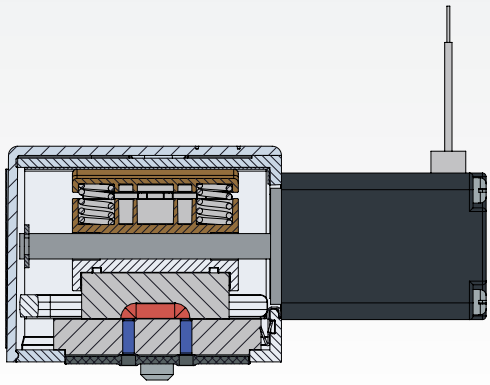
Very low hysteresis

"Set it and forget it" control

0.001" (0.03 mm) step resolution

Eclipse Proportional
Isolation Valve

The patented, stepper-controlled Eclipse proportional isolation valve leads the industry in performance and durability. This valve is ideal in critical applications for liquid and gas delivery, medical, analytical and industrial automation requiring ultra fine resolution and excellent repeatability. In addition, the unique design allows for custom flow profiles.



p. 18

Ceramic sliding seal

Liquid capable

Zero dead volume (fully flushable)

0.0009 in^3 (0.0154 cm^3)

Unique, patented design

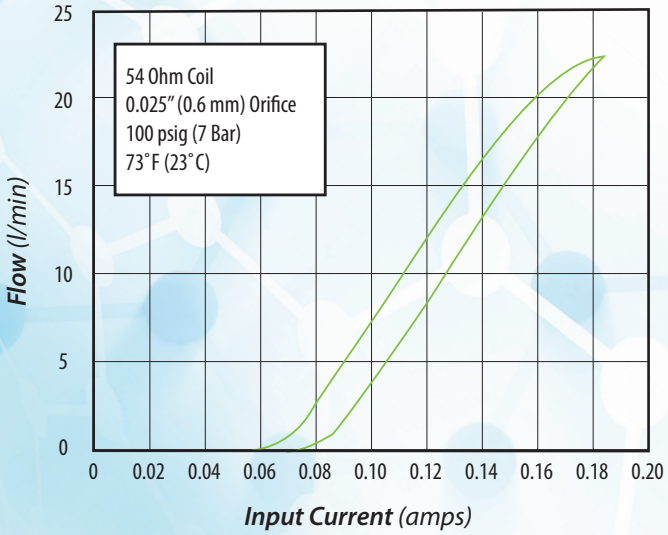
Ultra-fine resolution

EVP PROPORTIONAL VALVES

The EVP series proportional control valves combine the features of the existing EV series valve—long life, low power, and Clippard's reputation for high quality components—with the additional capability for proportional control. The EVP series valve provides air or gas flow control and varies the output flow based on the current input to the solenoid.

Controllability and overall value are the main features of the EVP proportional valve series. The consistent gain of this valve provides a high degree of control for many applications. The valve may be controlled using DC current, open or closed-loop control, and even PWM (pulse width modulation) to cover a broad range of applications.

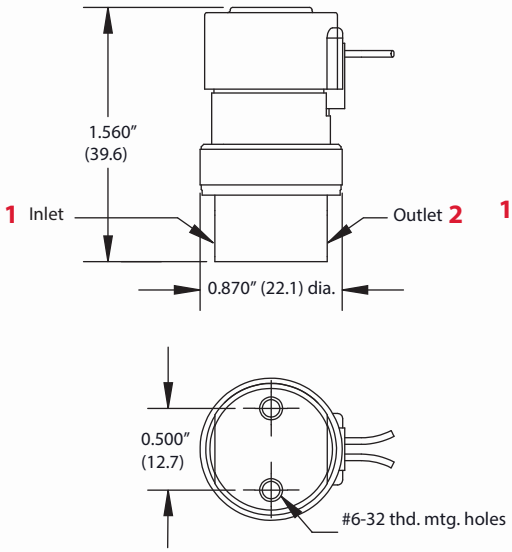
Typical Performance



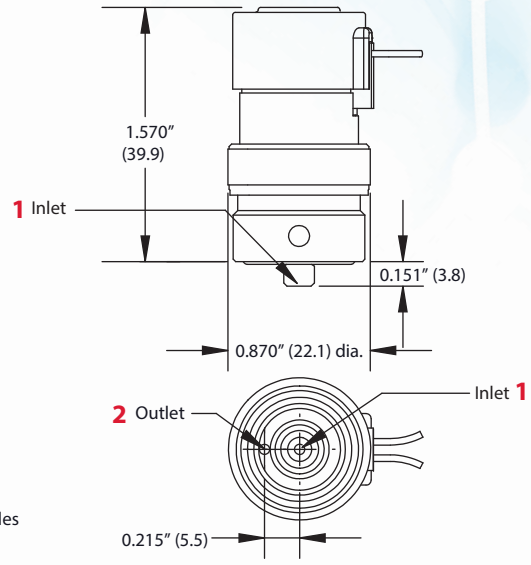
The above flow curve is a typical calibration record for the EVP. All proportional valves have a stored calibration data sheet readily available upon request.

Coil Resistance	13.5, 54, 218 Ω @ 72°F (22°C)
Connection	Square pin, terminal spades, or 18" (45.7 cm) wire leads
Current	0 to 0.370 A, 0 to 0.185 A, 0 to 0.092 A
Driver	EVPD *(optional)*
Filtration	40 micron filter *(recommended)*
Flow Range	Up to 22 l/min
Function	2-way normally-closed proportional
Material, Body	Nickel plated brass
Material, Seals	Nitrile, FKM, or EPDM
Material, Seat	Stainless steel
Material, Wetted	ENP brass, ENP steel, stainless steel
Max. Flow	±10% of target flow
Max. Hysteresis	≤10% of full current
Max. psig	100 psig (7 bar)
Medium	Clean, dry air or inert gases
Mount	In-line threaded ports or manifold
Number of Ports	2
Operating Pressure	Vac. to 100 psig (0.3 to 7 bar)
Operating Temp. Range	32 to 120˚F (0 to 48˚C)
Orifice	0.009", 0.013", 0.025", 0.040", 0.060" (0.23, 0.33, 0.64, 1.00, 1.52 mm)
Port, Inlet	#10-32 female or manifold stud
Port, Outlet	#10-32 female or manifold outlet hole
Power Requirement	1.9 watts @ 72°F (22°C); 2.3 watts max.
Voltage	5, 10, or 20 VDC nominal
Wattage	1.9 watts @ 72°F (22°C), 2.3 watts max.
More Details	**clippard.com/link/evp-series**

Inline Mount



Manifold Mount



Manifolds	
15490-1	Pilot Manifold #10-32 Inlet, 1/8" NPT Outlet
15490-2	Single Supply 1/8" NPT Inlet, #10-32 Outlet
15490-3	Dual Supply 1/8" NPT Inlet, #10-32 Outlet
15491-1	Side-Ported #10-32 Inlet, 1/8" NPT Outlet
15491-2	Side-Ported 1/8" NPT (R1/8) Inlet, #10-32 Outlet
15490-5	Single-Station 1/8" NPT Inlet, 1/8" NPT Outlet
15481-2	Single-Sided 2-Station
15481-4	Single-Sided 4-Station
15481-6	Single-Sided 6-Station
15482-8	Double-Sided 8-Station
15482-12	Double-Sided 12-Station

Dimensions shown are in inches (millimeters listed in parentheses).
Visit clippard.com for more detailed 2D and 3D drawings.

- **Flow proportional to input current**
- **Fast response and long life**

ORDERING INFORMATION

E ❑ - P ❑ - ❑ - ❑ _ _ - ❑

Electrical Connection

C	Connector
T	Terminal Spades
V	Wire Leads

Mounting

(blank)	Base Mount
M	Manifold Mount

Voltage

05	0 to 5 VDC
10	0 to 10 VDC
20	0 to 20 VDC

Orifice*

09	0.009" (0.23) dia., 2.7 l/min ±10%, max. 100 psig (7 bar)
13	0.013" (0.33) dia., 6.7 l/min ±10%, max. 100 psig (7 bar)
25	0.025" (0.64) dia., 22.0 l/min ±10%, max. 100 psig (7 bar)
40	0.040" (1.02) dia., 18.7 l/min ±10%, max. 50 psig (3.4 bar)
60	0.060" (1.52) dia.,14.0 l/min ±10%, max. 25 psig (1.7 bar)

Maximum Pressure *(5 psig to 100 psig)*

00	In increments of 5, from 05 to 95
A0	100 psig

Seal

(blank)	Nitrile
E	EPDM[1]
V	FKM[1]

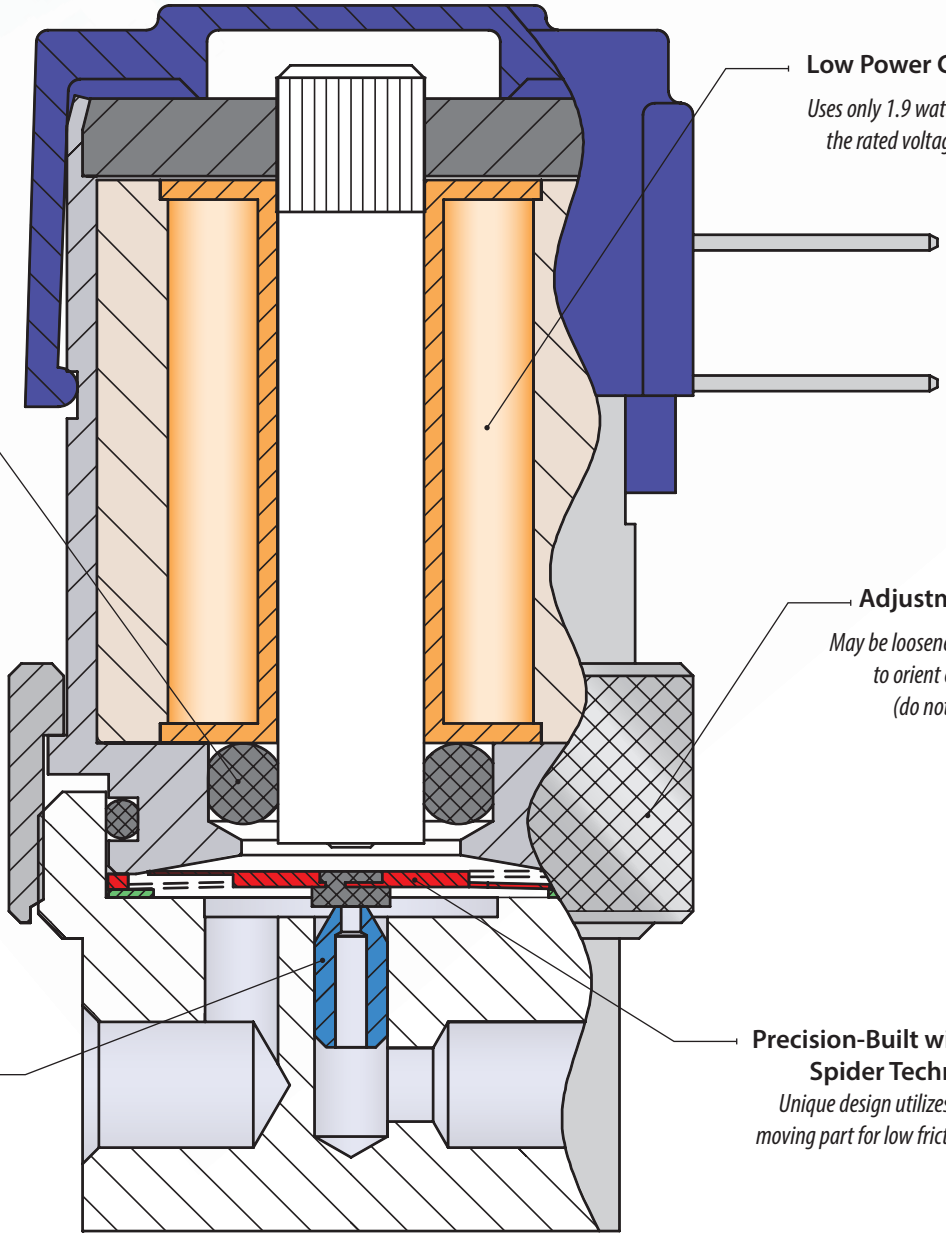
[1]*Min. order quantity required for EPDM or FKM seals.*

Please Note: Not all possible configurations are valid.
Consult the online configurator at clippard.com.

Example Part Number:
EC-P-05-0925

For more info, scan the QR code or visit
clippard.com/link/evp-series

A Close-Up of the EVP Series



Low Power Coil

Uses only 1.9 watts at the rated voltage

Seal Material

Nitrile, FKM, EPDM, and others available

Adjustment Ring

May be loosened for positioning to orient connections (do not remove)

Standard Orifices

0.0009" (0.2 mm)
0.013" (0.3 mm)
0.025" (0.6 mm)
0.040" (1.0 mm)
0.060" (1.5 mm)

Precision-Built with Clippard Spider Technology

Unique design utilizes only a single moving part for low friction and long life

Variety of Mounting Options

How to Select Your EVP Proportional Valve

When choosing your valve, there are many variables to consider. To select the best valve for your application, focus on:

1. **Control Signal**
2. **Valve Orifice**
3. **Operating Pressure**

***Please Note**: It is important to specify and use a calibrated valve that matches your application. Be sure to use a valve set to your operating pressure. Otherwise, the required power for opening the valve will be high and the resolution to set your flow proportional will be poor.*

1 CONTROL SIGNAL

Voltage Range	Input Current Range	Coil Resistance	Max. Voltage Required
0 to 5 VDC @ 72˚F (22˚C)	0 to 0.370A	13.5 ohms @ 72˚F (22˚C)	6.2 VDC
0 to 10 VDC @ 72˚F (22˚C)	0 to 0.185A	54 ohms @ 72˚F (22˚C)	12.4 VDC
0 to 20 VDC @ 72˚F (22˚C)	0 to 0.092A	218 ohms @ 72˚F (22˚C)	24.8 VDC

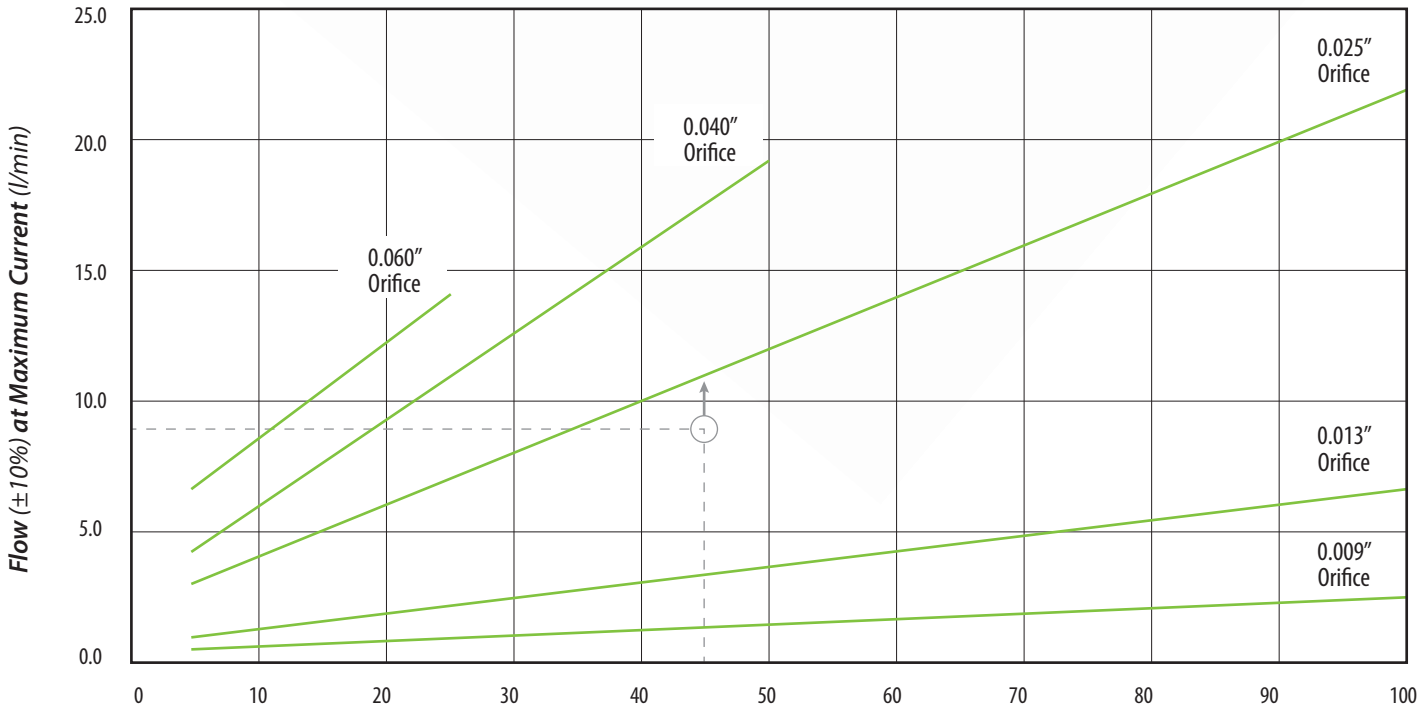
Note: Do not exceed input current range

2 VALVE ORIFICE *(Maximum Working Pressure)*

Orifice Diameter	Rated Pressure	Flow at Max. Current (±10%)
0.009" (0.23 mm)	100 psig (7 bar)	2.7 l/min @ 100 psig (7 bar)
0.013" (0.33 mm)	100 psig (7 bar)	6.7 l/min @ 100 psig (7 bar)
0.025" (0.64 mm)	100 psig (7 bar)	22.0 l/min @ 100 psig (7 bar)
0.040" (1.02 mm)	50 psig (3.4 bar)	18.7 l/min @ 50 psig (3.4 bar)
0.060" (1.52 mm)	25 psig (1.7 bar)	14.0 l/min @ 25 psig (1.7 bar)

Note: Maximum flow is measured at maximum pressure

3 OPERATING PRESSURE - *Maximum Flow vs. Operating Pressure*



To determine the correct orifice required, locate the colored line immediately above the flow/pressure intersection. Example: 9 slpm required at 45 psig inlet. This example leads to a "-2545" valve (0.025" nozzle, 45 psig).

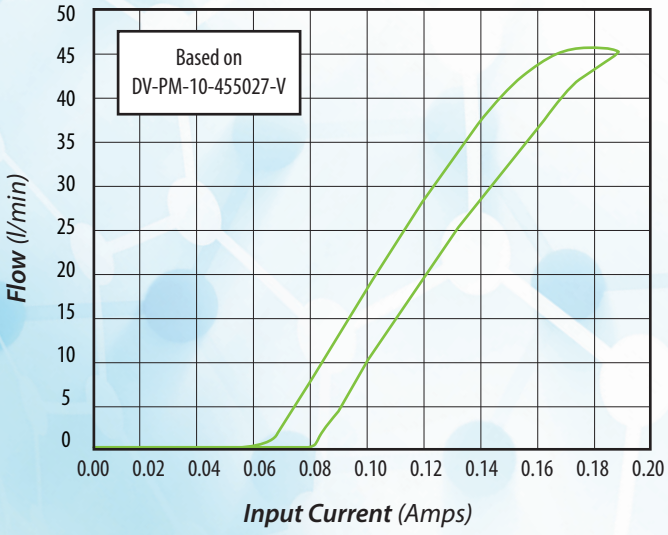
DVP PROPORTIONAL VALVES

Clippard's DVP series proportional solenoid valves are precision-built 2-way control valves. With its solid, compact dsign, long life, and exceptionally high flow rates, these valves are suitable for a wide variety of applications across many different industries.

The DVP valve provides air or gas flow control and varies the output flow based on the current input to the solenoid. The valve's consistent gain provides a high degree of control. It may be controlled using DC current, open or closed-loop control, and even pulse width modulation (PWM) to cover a large range of applications.

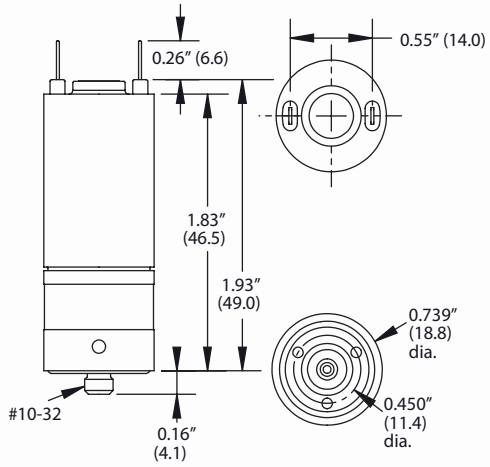
Coil Resistance	52.6, 210.5 Ω @ 72°F (22°C)
Connection	Terminal spades or 18" (45.7 cm) wire leads
Current	0 to 0.190 A, 0 to 0.095 A
Cycle Life	1,000,000,000+
Driver	EVPD *(optional)*
Filtration	40 micron filter *(recommended)*
Function	2-way normally-closed proportional
Material, Body	Stainless steel
Material, Seals	FKM, nitrile, EPDM, or silicone
Material, Seat	Stainless steel
Material, Wetted	304 stainless steel, PPS
Max. Flow	+10%, -0%
Medium	Air or compatible gases
Mount	Manifold, #10-32 male stud
Number of Ports	2
Operating Pressure	Vac. to 100 psig (7 bar)
Operating Temp. Range	32 to 120˚F (0 to 49˚C)
Port, Inlet	Manifold stud
Port, Outlet	Manifold outlet hole
Voltage	10 or 20 VDC nominal
Wattage	1.9 watts @ 72˚F (22˚C), 2.5 watts max.
More Details	clippard.com/link/dvp-series

Typical Performance

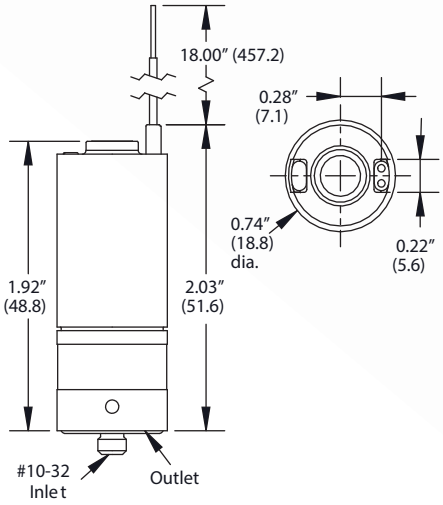


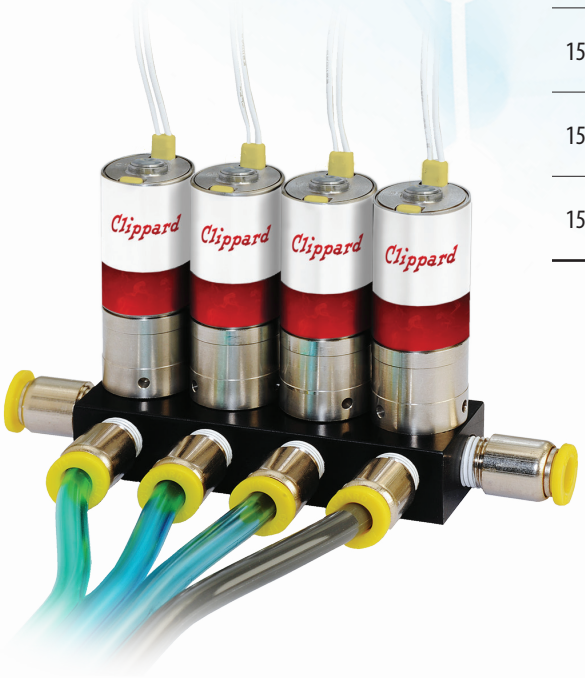
The above flow curve is a typical calibration record for the DVP. All proportional valves have a stored calibration data sheet readily available upon request.

Spade Terminals



Wire Leads





Manifolds	
15490-5	Single-Station, ENP Brass
15781-2	2-Station, Black Anodized Aluminum, 1/8″ NPT
15781-4	4-Station, Black Anodized Aluminum, 1/8″ NPT
15481-6	6-Station, Black Anodized Aluminum, 1/8″ NPT

Dimensions shown are in inches (millimeters listed in parentheses).

Visit clippard.com for more detailed 2D and 3D drawings.

- **Extremely low hysteresis**
- **Low heat rise / low power**
- **Flow proportional to input current**
- **Robust stainless steel spring, base, and housing**
- **Industry standard for leak-free operation**
- **Over 1,000,000,000 cycles**

ORDERING INFORMATION

D ❑ - P M - ❑ - ❑ - ❑ - ❑ - ❑

Electrical Connection

T Spade Terminals
V Wire Leads (Axial)

Voltage

10 10 VDC
20 20 VDC

Flow

In increments of 1, from 010 to 678 (1.0 l/min to 67.8 l/min)

Example: 300 *(300 l/min)*

Operating Pressure

In increments of 1, from 005 to 100 *5 psig (0.4 Bar) to 100 psig (6.9 Bar)*

Example: 040 *(40 psig, 2.8 bar)*

Seals

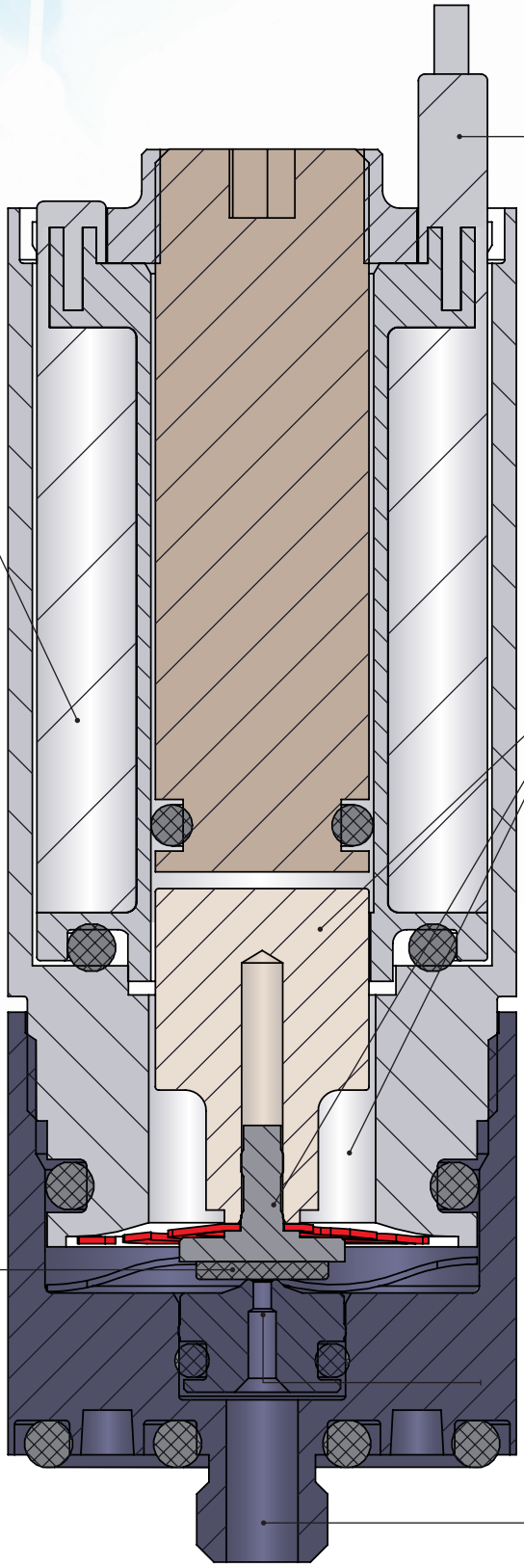
V FKM (standard)
(blank) Nitrile
E EPDM[1]
S Silicone[1]

[1]*Min. order quantity required for EPDM or silicone seals*

Example Part Number:
DT-PM-10-300-040-V

For more info, scan the QR code or visit
clippard.com/link/dvp-series

A Close-Up of the DVP Series



Wire Leads or
Spade Terminal Connectors

Low Power Coil

Uses only 1.9 watts at the rated voltage

Stainless Steel

Core, housing, and base

Stainless Steel Plunger
Spider Assembly

with overmolded seal and bumper

Poppet Seal

#10-32 or Cartridge

How to Select Your DVP Proportional Valve

Proportional flow is achieved by varying the current input to the valve. It is crucial to specify and use a calibrated valve that matches your application. To ensure you have a valve that will perform well for your specific requirements, be sure to use a valve set to your operating pressure.

The flow capabilities shown below in green are standard configurable options. The flow capabilities shown in blue are available as a special custom option. Contact Clippard for more details.

To select your valve, reference the flow chart and list your operating pressure in a 3-digit format (065 = 65 psig). Next, specify your desired maximum flow rate for your pressure (500 = 50.0 l/min). Accurately specify your nominal operating pressure and flow to ensure the best performance and resolution for your application.

For nominal operating pressures under 5 psig, use a 005 designator for pressure. For vacuum applications, use the positive pressure equivalent and reverse the ports.

When choosing your valve, there are many variables to consider. To select the best valve for your application, focus on:

1. **Control Signal**
2. **Operating Pressure**

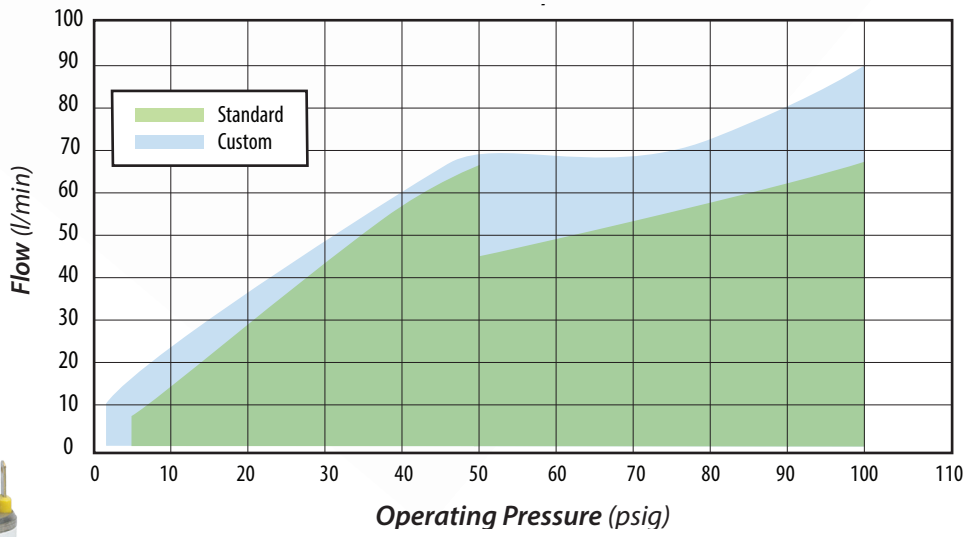
***Please Note**: It is important to specify and use a calibrated valve that matches your application. Be sure to use a valve set to your operating pressure. Otherwise, the required power for opening the valve will be high and the resolution to set your flow proportional will be poor.*

1 CONTROL SIGNAL

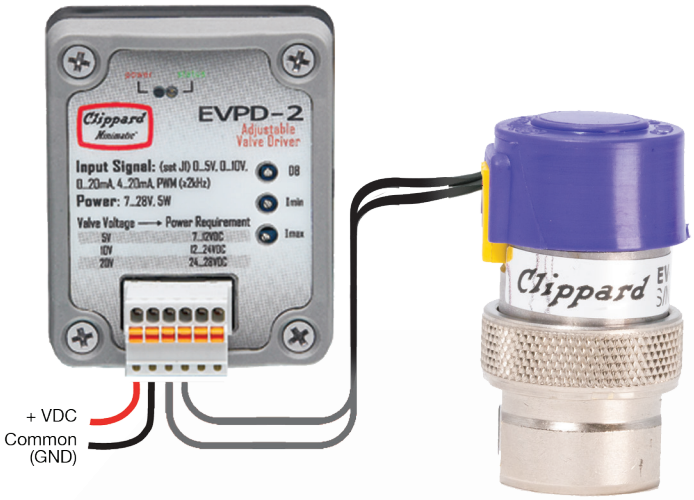
Voltage Range	Input Current Range	Coil Resistance	Max. Voltage Required
0 to 10 VDC @ 72˚F	0 to 0.190A	52.6 ohms @ 72˚F	13 VDC
0 to 20 VDC @ 72˚F	0 to 0.095A	210.5 ohms @ 72˚F	26 VDC

Note: Do not exceed input current range

2 OPERATING PRESSURE - *Flow vs. Operating Pressure*



EVP / DVP DRIVER



Adjustment	Min. drive current, max. drive current, command deadband
Command Set-Point Signal Type	**Selectable:** 0 to 5 VDC, 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA, PWM @ ≥ 2 kHz duty cycle
Connection	Screw terminals or DIN connector
Input Impedance	200 kΩ
LED Indicators	Power, activity, status, and faults
Mount	Mounting holes or DIN rail
Operating Temp. Range	0 to 155˚F (-18˚ to 68˚C)
Output	0 to 400 mA (selectable range)
Power Requirement	7 to 28 VDC @5 watt
More Details	clippard.com/link/evpd-driver

The EVPD proportional valve driver fast-tracks valve control applications. This product is ideal for laboratories and OEM product development and can be customized to fit OEM applications including control parameters. The EVPD produces driver current for Clippard's EVP or DVP series valves proportional to input control signals.

- **Plug-and-play interface between Clippard's EVP and DVP series valves and PLCs or other controls**
- **Linearized valve response right "out of the box"**
- **Three selectable valve output ranges**
- **Five signal inputs to choose from**
- **Easy integration with existing machine controls**
- **User-adjustable parameters**
- **Automatic temperature compensation to maintain constant current**
- **Two configuration options: stand-alone PCB or enclosed in housing**
- **Compact size**

The tuning adjustments on the EVPD allow the user to adjust the command signal needed to start opening the valve, adjust the opening current to the valve, and limit the maximum current to the valve to restrict the valve maximum opening and prevent current beyond the valve solenoid's rating. The settings are used by the valve management software in the microcontroller along with driver current feedback to calculate command instructions to the digital PWM controller.

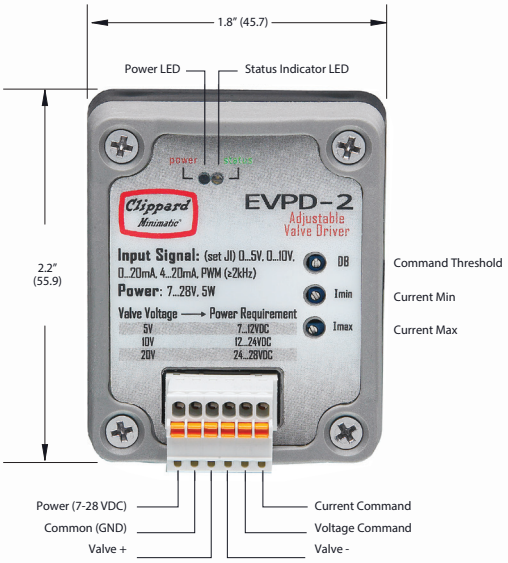
The resulting change to valve performance is shown in the *Effect on Valve Flow* chart for a typical EVP valve (10 VDC coil, 0.06" orifice, 25 psig max).

Power Requirements

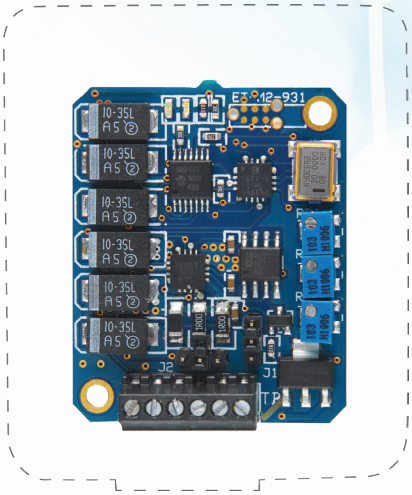
Power input requirements are specified as supply voltage ranges for each EVP or DVP valve. Supplying voltages outside of these ranges may result in valve malfunctioning. Power requirements are determined by the valve voltage specification.

EVP Valve Type	Input Voltage Range	EVPD Max. Output
0 to 5 VDC	7 to 12 VDC	400 mA
0 to 10 VDC	12 to 28 VDC	200 mA
0 to 20 VDC	14 to 28 VDC	100 mA

EVPD-2



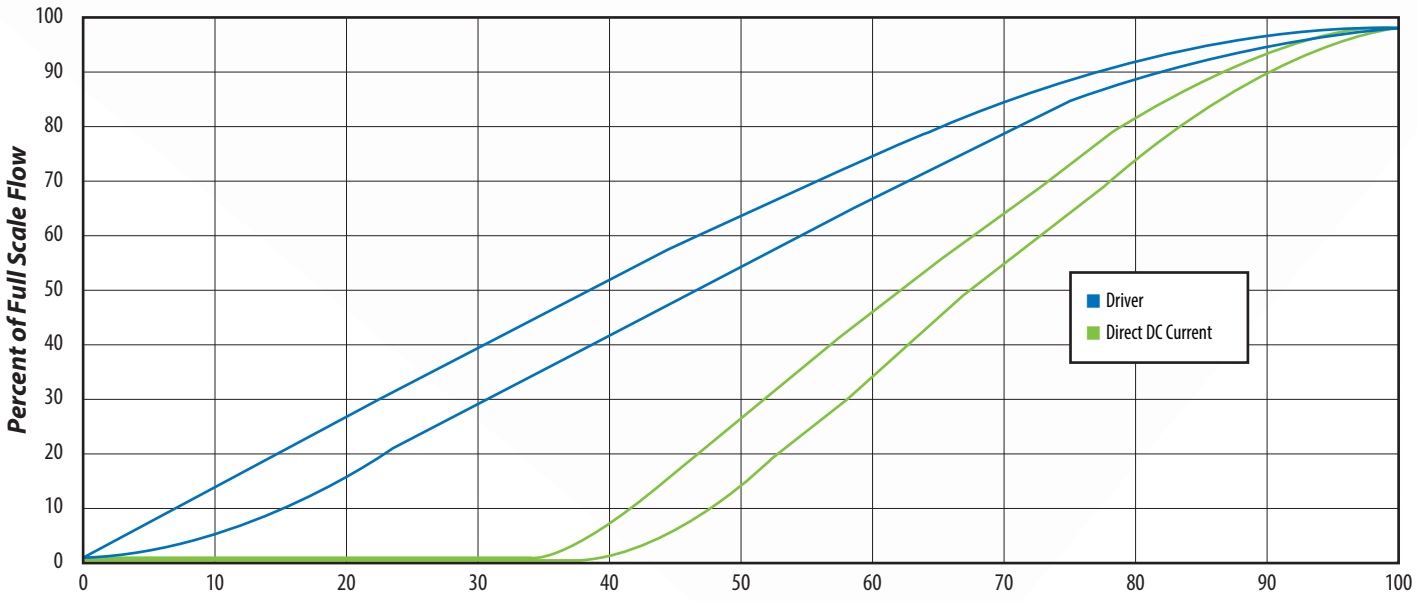
EVPD-1



Dimensions shown are in inches (millimeters listed in parentheses).

Visit clippard.com for more detailed 2D and 3D drawings.

Effect on Valve Flow



ORDERING INFORMATION

E V P D - ❑

EVP Driver

1	Driver Assembly in Enclosure
2	Driver Board
2DIN	DIN Rail Mounting Clip

Example Part Number:
EVPD-1

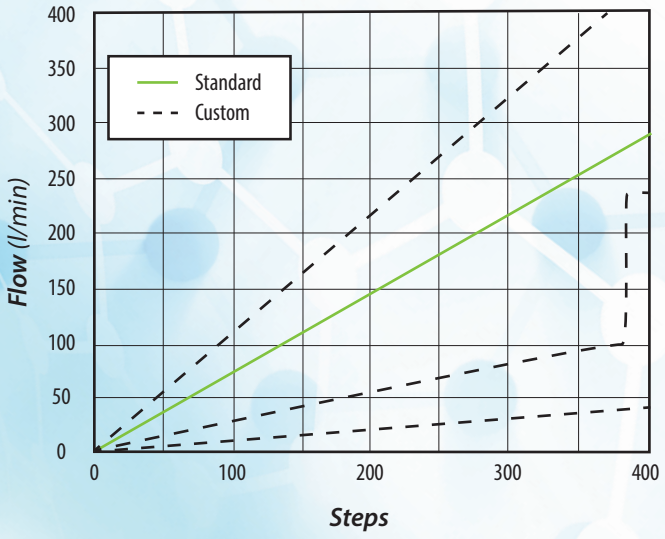
For more info, scan the QR code or visit
clippard.com/link/evpd-driver

SCPV NEEDLE VALVES

Utilizing the industry's most robust and powerful linear actuator, the SCPV series high flow stepper-controlled proportional valves outperform the competition in performance and durability. These vales are ideal in critical applications such as gas delivery, medical, analytical, and industrial automation requiring high resolution, high flow, and low hysteresis. In addition, the unique design allows for custom flow profiles when required.

Positioning a 3.5˚ needle through a 0.152" (3.9 mm) orifice in 0.001" (0.03 mm) step increments provides for very linear and repeatable flow control within your application process. Standard models, inline, cartridge, and manifold mounts are ready to go for control of air and other inert gases.

Flow Rate *(SCPV-1-3 @ 100 psig)*



Connection	Connector / wiring harness
Driver	Bipolar chopper drive required
Flow Range	Up to 280 l/min
Flow Resolution	0.7 l/min per step
Linearity	<2.5% of full scale
Material, Wetted	Stainless steel, aluminum, brass, acetal, and FKM
Max. Hysteresis	<2%
Max. psig	100 psig
Medium	Air or compatible gases
Mount	In-line, manifold, or cartridge
Needle	3.5˚
Number of Ports	2
Operating Pressure	Vac. to 100 psig (7 bar)
Operating Temp. Range	32 to 184˚F (0 to 84˚C)
Port, Inlet	1/8" NPT, manifold, or cartridge
Port, Outlet	1/8" NPT, manifold, or cartridge
Position Resolution	0.001" (0.03 mm) per step
Power Requirement	5 VDC supply to motor
Repeatability	<0.5% of full scale
Response Time	0.95 secs fully-open to fully-closed
Wattage	3.85 watts nominal *(only during adjustment—zero power consumption to maintain position)*
More Details	**clippard.com/link/scpv-series**

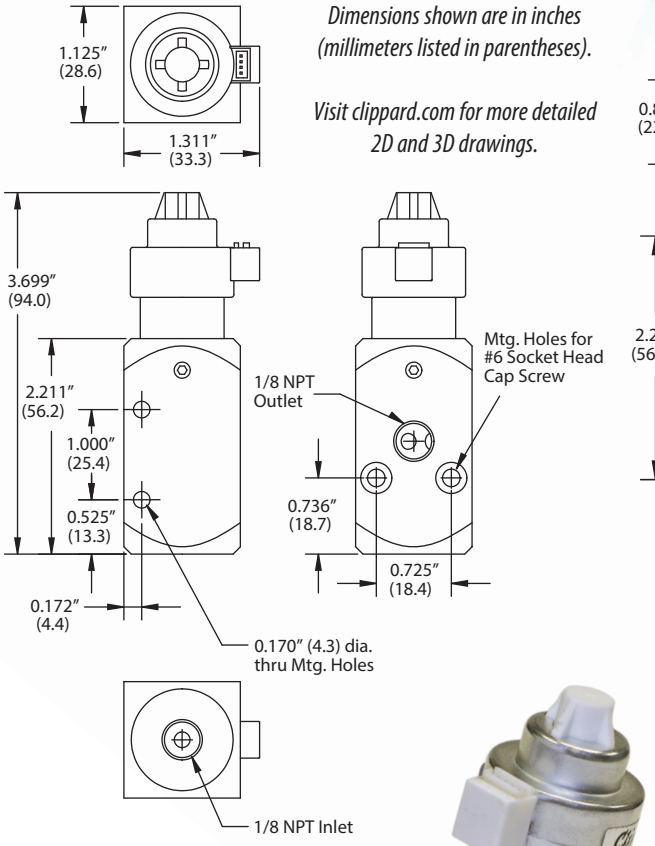
CUSTOMIZABLE FOR YOUR APPLICATION

The SCPV is highly modifiable for OEM applications, including:

- Flow profiles up to 5,800 l/min
- High flow at low pressure
- Materials such as PEEK or stainless steel
- Special seal materials such as FFKM and others
- Applications for control of water
- Applications that provide zero leak shutoff
- Changing the motor to accommodate an encoder
- Providing specific testing procedures

Contact Clippard to discuss what changes can be made to best fit your application requirements.

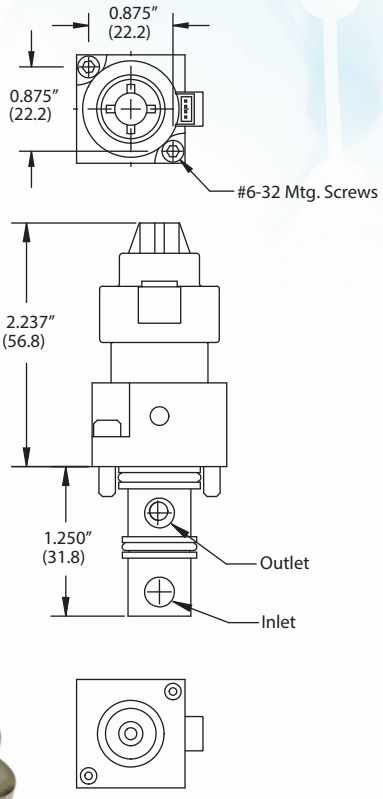
Inline Mount



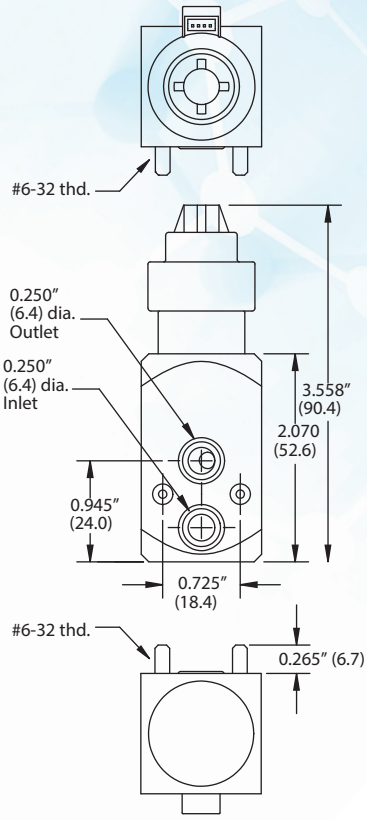
Dimensions shown are in inches (millimeters listed in parentheses).

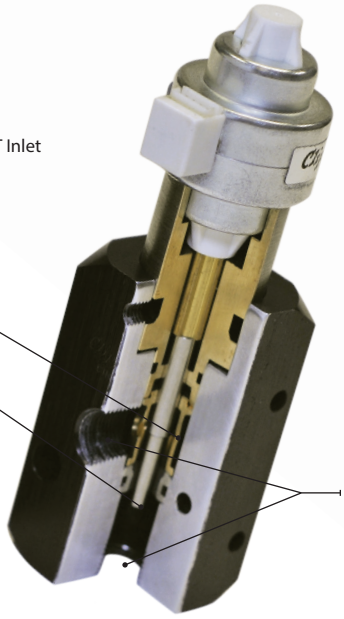
Visit clippard.com for more detailed 2D and 3D drawings.

Cartridge Mount



Manifold Mount





Acetal seat

Customizable stainless steel needle

Anodized aluminum body

Brass housing and internals

Stepper-controlled linear actuator with acme lead screw

1/8″ NPT inlet & outlet ports (SCPV-1-3)

- **<2% hysteresis**
- **Excellent linearity, <2.5% of full-scale**
- **2 ms reaction time**
- **Millions of cycles**
- **Holds position for power savings or at a loss of power**

ORDERING INFORMATION

❑ S C P V - 1 - ❑ ❑

Unit

(blank)	Imperial
M-	Metric

Mounting Style

3	Inline Version
3M	Manifold Mount
3C	Cartridge Style

Seat

(blank)	Acetal
-R	FKM

Example Part Number:
SCPV-1-3M

For more info, scan the QR code or visit
clippard.com/link/scpv-series

ECLIPSE PROPORTIONAL ISOLATION VALVE

The Eclipse is a proportional isolation valve like no other. Utilizing patented slide technology, it achieves exceptional proportional flow resolution that far exceeds the competition. Designed for precision, its flow path is fully flushable and composed entirely of inert ceramic, ensuring compatibility with a wide range of media. In addition, the Eclipse features a unique soft start capability that gradually introduces media at a controlled ramp rate to prevent damage or turbulence.

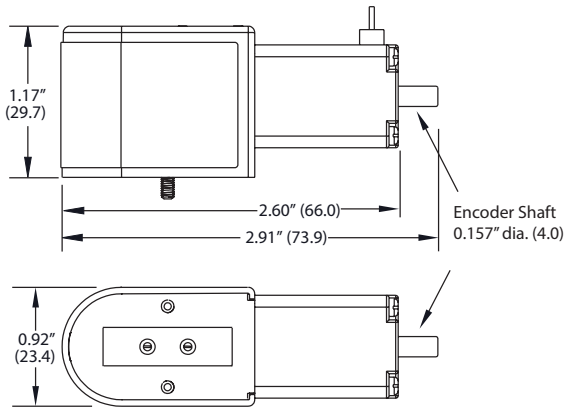
Utilizing a robust and powerful miniature linear actuator, the Eclipse is stepper-controlled, micro-stepping capable, encoder-ready, and its unique design allows for custom flow profiles.

For applications that demand exceptional liquid and gas control, Clippard's Eclipse offers outstanding precision and unrivaled proportional flow resolution.

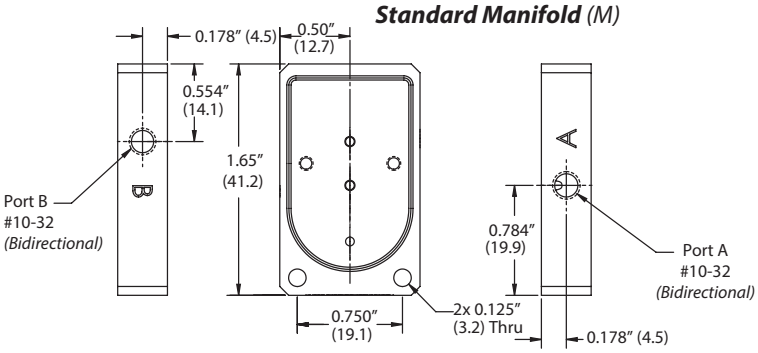
- **Unrivaled resolution**
- **Inert flow path** *(all wetted areas ceramic)*
- **Soft start prevents damage or turbulence**
- **Zero dead volume** *(fully flushable, <0.0009 in3)*
- **Excellent linearity** *(<4% of full-scale)*
- **Fast response** *(<2 ms reaction time)*
- **Cycle life of typically >1 million cycles**
- **Repeatability <5% of full travel**
- **Bi-directional**

Current	0.49A per phase
Cycle Life	Typically >1 million
Driver	Bipolar chopper drive required
Flow Range	**Air:** 0 to 7 l/min **Water:** 0 to 190 l/min -0 / +10% @ 30 psig (2 bar)
Flow Resolution	**Air:** 0.000487 l/min (487.5 µl) @ 30 psig (2 bar) **Water:** 0.0002 l/min (200 µl) @ 30 psig (2 bar)
Linearity	<4% of full-scale
Material, Body	Ceramic
Material, Seals	FKM standard, EPDM and others available
Material, Wetted	Ceramic (others depending on porting option)
Max. Flow	**Air:** 0 to 7 l/min -0 /+10% **Water:** 0 to 190 ml/min -0 /+10% *@ 30 psig (2 bar)*
Max. psig	30 psig (2 bar)
Medium	Liquids and gases
Mount	Manifold or flat bottom (ZDVF)
Number of Ports	2
Operating Pressure	Vac. to 30 psig (2 bar)
Operating Temp. Range	32 to 180˚F (0 to 82˚C)
Port, Exhaust	None
Port, Inlet	#10-32, Manifold or ZDVF *(zero dead volume fitting)*
Port, Outlet	#10-32, Manifold or ZDVF *(zero dead volume fitting)*
Position Resolution	0.00006" (0.0015 mm)
Power Requirement	20 VDC supply to motor @ 30 psig (2 bar)
Proof Pressure	50 psig (3.4 bar)
Response Time	<2 ms
Wattage	2.5 watts nominal *(only during adjustment, zero power consumption to maintain position)*
More Details	**clippard.com/link/eclipse-valve**

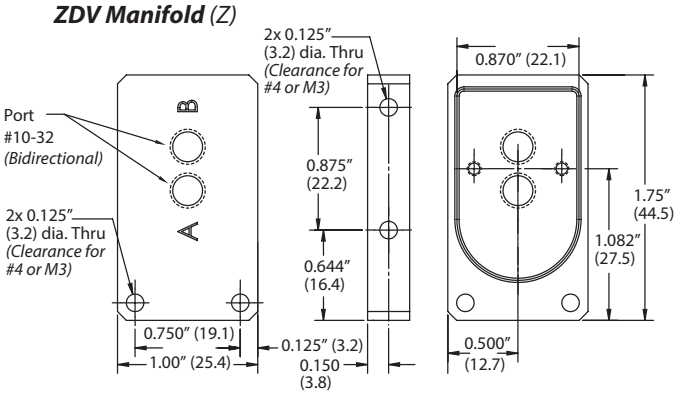
This product is highly modifiable for OEM applications, including alternate body materials, flow profiles, and more. Call **877-245-6247 to discuss your needs.*



Standard Manifold (M)

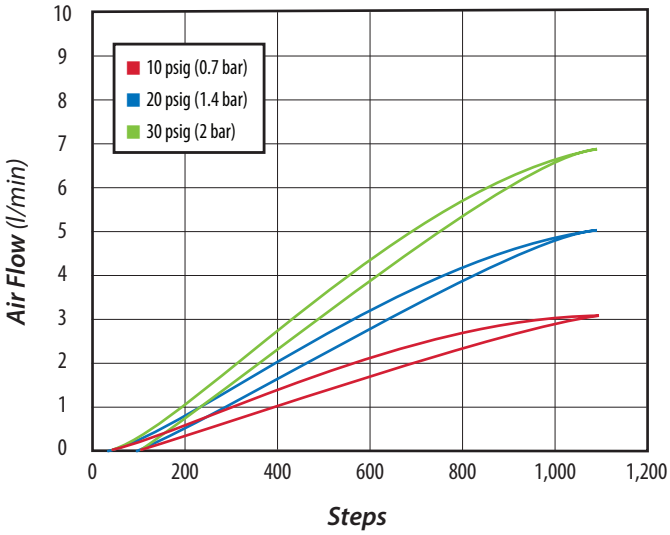


ZDV Manifold (Z)

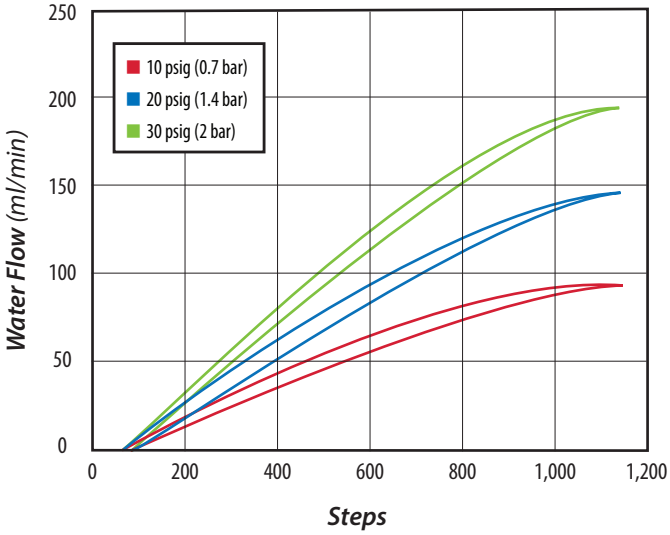


Dimensions shown are in inches (millimeters listed in parentheses).
Visit clippard.com for more detailed 2D and 3D drawings.

Typical Flow Curves for Air



Typical Flow Curves for Water



ORDERING INFORMATION

E I V U - ❑ ❑ ❑

Porting

M	Manifold
Z	Zero Dead Volume Manifold

Seals

(blank)	ZDVF porting
-V	FKM

Encoder Shaft

-ENS	Encoder shaft (standard)
(blank)	No encoder shaft

Accessories

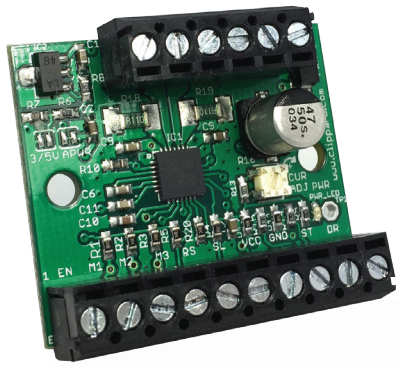
EUM-01	Single-Station Manifold, #10-32
M-EUM-01	Single-Station Manifold, M5x0.8
SCPVD-1	Bipolar Chopper Driver
ZDVF-18	Headless 1/4-28 Flatbottom Fitting, 1/8″ (3.2 mm) OD (IDEX p/n XP-348)

Also Recommended: Miniature optical encoder from US Digital for 4 mm bore with metric screws (p/n E4T)

Example Part Number:
EIVU-M-V-ENS

For more info, scan the QR code or visit
clippard.com/link/eclipse-valve

SCPV DRIVER

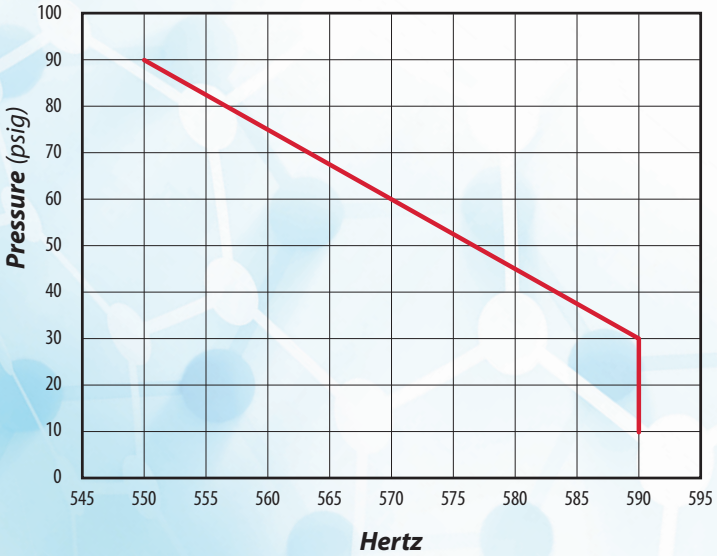


Current / Phase	385 mA
Inductance / Phase	8.08 mH
Insulation Resistance	20M ohms
Motor Voltage	5 VDC
Resistance / Phase	13 ohms
Temperature Rise	135˚F (57˚C)
Wattage	3.85 watts
More Details	clippard.com/link/scpvd-driver

This product is highly modifiable for OEM applications—including alternate body materials, flow profiles, and more. Call **877-245-6247 to discuss your needs.*

The SCPVD is a bi-polar stepper motor driver board which can be used for stepper motors up to a max 2A/phase. It is based on the Allegro A4988 motor driver. The driver requires a motor drive voltage of 7 to 35 volts. An external controller is required to deliver step and direction signals to the driver board. The SCPVD is capable of microstepping and defaults to a 16th step micro-stepping mode. The step mode as well as several other options such as sleep, enable, and reset can be toggled on and off.

Max. Step Pulse Frequency

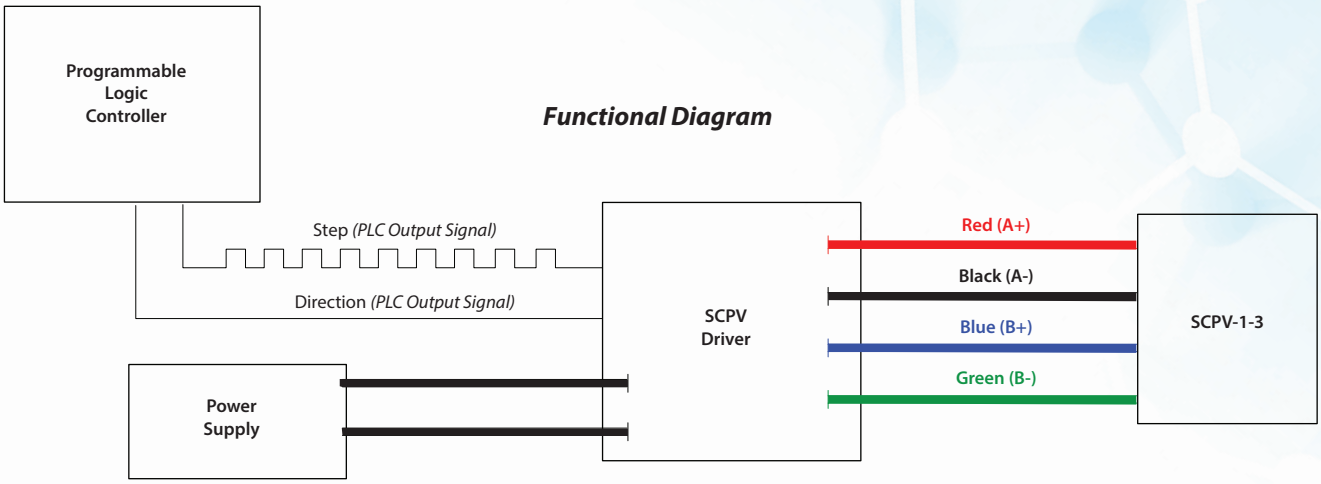


For Use with Clippard's

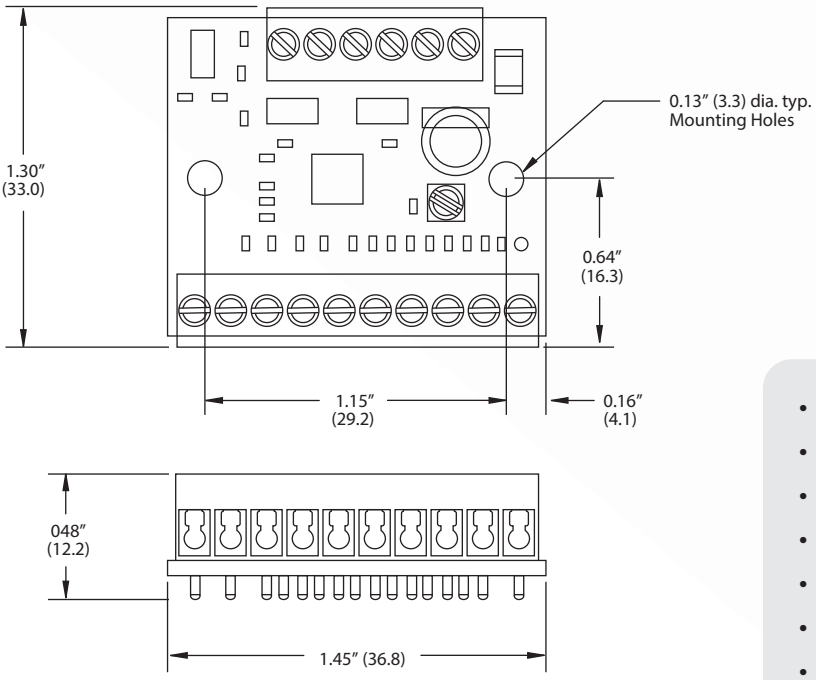
SCPV Series Stepper-Controlled Proportional Valve

and/or

Eclipse Proportional Isolation Valve



Functional Diagram



Dimensions shown are in inches (millimeters listed in parentheses).

Applications

- Analytical instruments
- Blood pressure monitoring
- Precise pressure control
- Patient simulators
- Gas controllers
- Mass flow control
- Gas chromatography
- Respirators / ventilators

- **+7 to +35 VDC supply voltage**
- **Max. 2A / phase**
- **1/16, 1/8, 1/4, 1/2, and full step modes**
- **5V or 3.3V logic inputs (jumper selectable)**
- **LED power supply indicator light**
- **Crossover current protection**
- **Thermal shutdown circuitry**

ORDERING INFORMATION

S C P V D - 1

Example Part Number:
SCPVD-1

For more info, scan the QR code or visit
clippard.com/link/scpvd-driver

BPV BALANCED POPPET SERIES

Clippard's new pressure compensated valve, the BPV, is another addition to an impressive list of quality flow control products! The new BPV series provides all the qualities you've come to rely on with the EVP/DVP proportional valves, but with design features that address critical low pressure/high flow applications.

- **Small package with significant flow**
- **All ports down design**
- **Wetted parts ideal for oxygen and inert gases**
- **Smooth liftoff**
- **Low hysteresis**
- **Low leak design**
- **Ideal for low pressure/high flow applications**
- **Can be calibrated to meet specific applications**

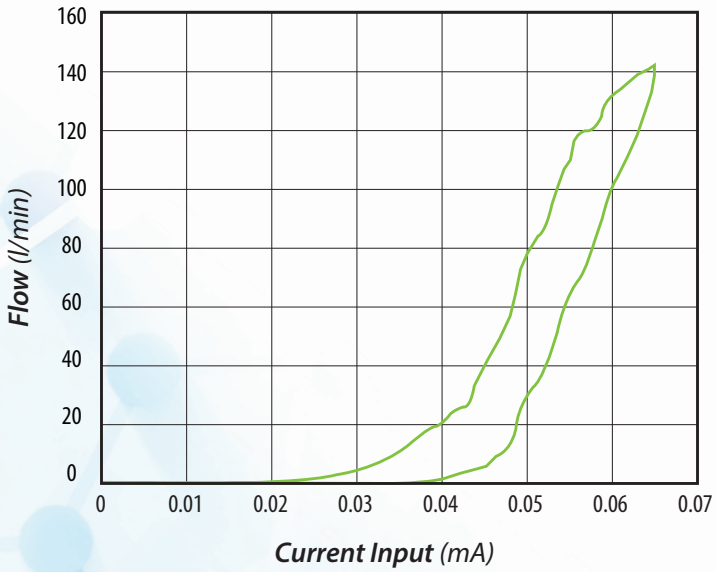
Connection	Flying leads
Cycle Life	>100 million
Flow	120 l/min @ 30 psig (2 bar)
Function	2-way normally-closed proportional
Hysteresis	10% of full scale typical, 15% max.
Material, Seals	FKM
Material, Wetted	303 stainless steel, PPS (manifold mount), 430FR stainless steel, brass
Medium	Air, oyxgen, or neutral gas
Mount	Cartridge or manifold
Operating Pressure	0-45 psig (3 bar)
Operating Temp. Range	50 to 122˚F (10 to 50˚C)
Response Time	10 ms
Voltage	5, 12, or 24 VDC
Wattage	2.5 watts typical
More Details	clippard.com/link/bpv

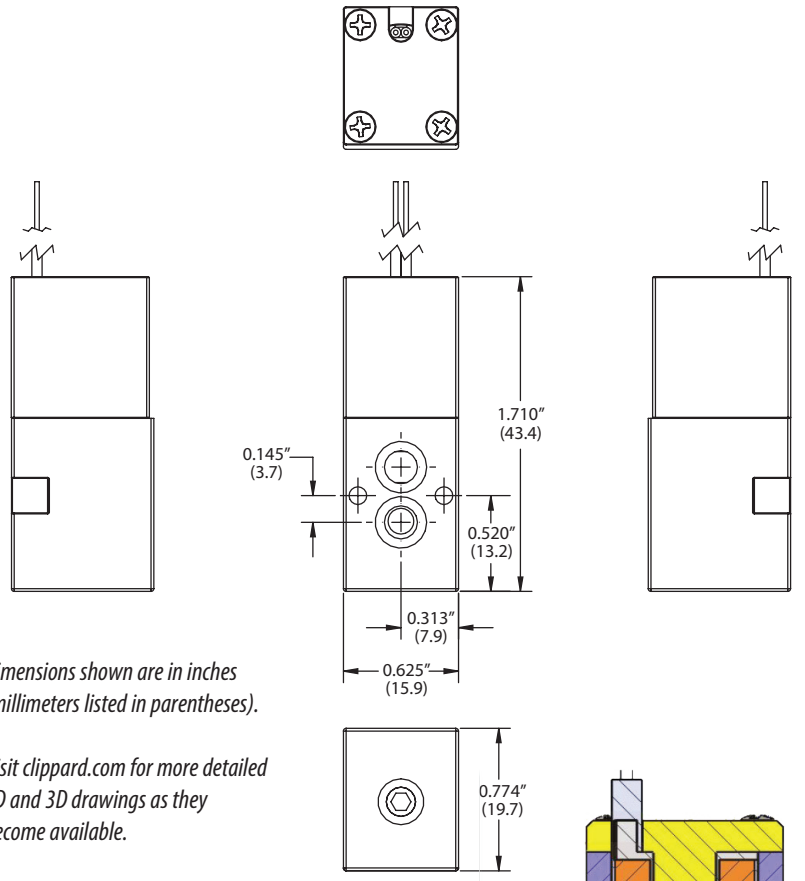
P R E L I M I N A R Y

Note: This product is still in development.

Specifications are subject to change.

***Typical Flow @ 45 psig** (2 bar)*

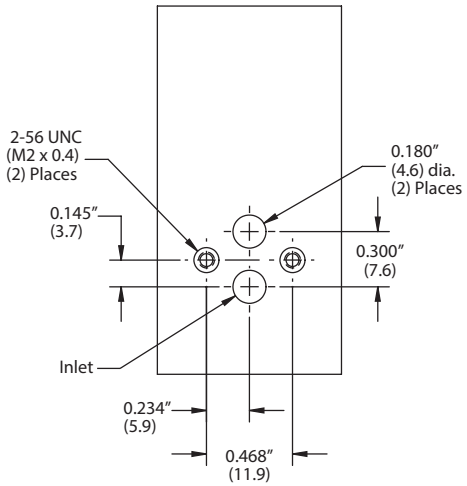


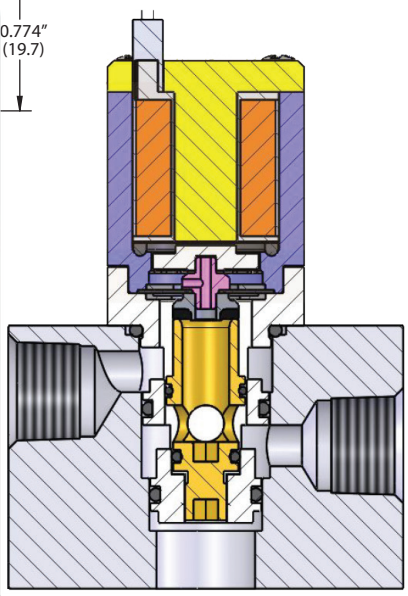


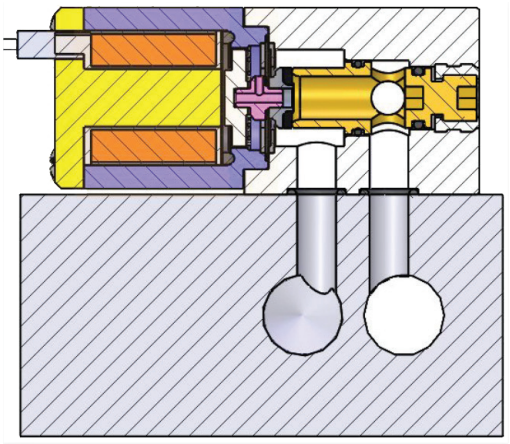
Dimensions shown are in inches (millimeters listed in parentheses).

Visit clippard.com for more detailed 2D and 3D drawings as they become available.

Hole Placement For Manifold







Applications

- Medical devices
- Analytical instruments
- Biotechnology
- Industrial process controls
- Food and beverage equipment

ORDERING INFORMATION

Not Yet Available to Order—*Coming Soon!*

Contact Clippard or your local Clippard distributor to discuss participating in the early Beta release

For more info, scan the QR code or visit
clippard.com/link/bpv

CPV8 MICRO 8 MM SERIES

These direct actuating proportional valves offer an extremely fast response time for precise, proportional dosing of minute volumes. They are extremely quiet, emit very low vibration, and consume very little power, making them ideal for a wide range of medical and diagnostic applications.

Standard products offered will fit the needs of most applications, however this series can be fully customized according to the user's unique requirements. Consult Clippard with your specific application.

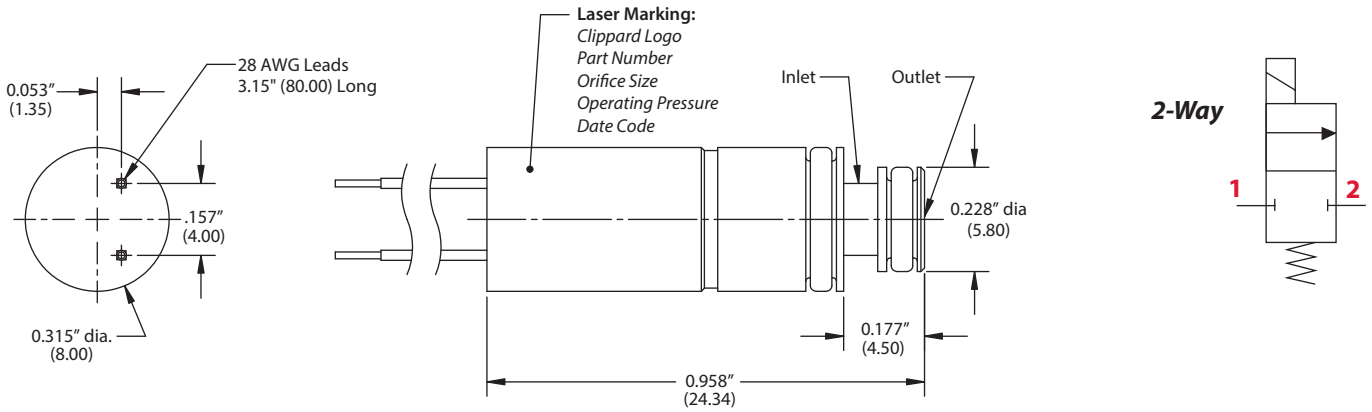
- **Ideal for compact assemblies**
- **Eliminates downstream pulsations**
- **Smooth proportional delivery**
- **Low current power / low to no noise**
- **Exceptional variability of flow vs. command current**
- **Tiny package with a robust design**
- **Highly customizable performance**

Current Range	0 to 70 mA
Duty Cycle	100% @ I < 55 mA
Flow Coefficient Kv	**0.012" Orifice:** Up to 0.003 m^3/h **0.020" Orifice:** Up to 0.005 m^3/h
Function	2-way normally-closed proportional
Leak Rate	< 1 ml/min
Material, Body	Stainless steel
Material, Seals	FKM, FFKM
Max. Flow	7.5 l/min
Medium	Air, inert gases
Mount	Cartridge
Operating Pressure	**0.012" Orifice:** 0 to 116 psig (10 bar) **0.020" Orifice:** 0 to 87 psig (6 bar)
Operating Temp. Range	40 to 120˚F (5 to 50˚C)
Orifice	0.012" (0.3 mm), 0.020" (0.5 mm)
Thermal Resistance	~70 K/W (without flow)
Voltage	32 V
Wattage	1.5 watts max.
More Details	clippard.com/link/pv8

P R E L I M I N A R Y

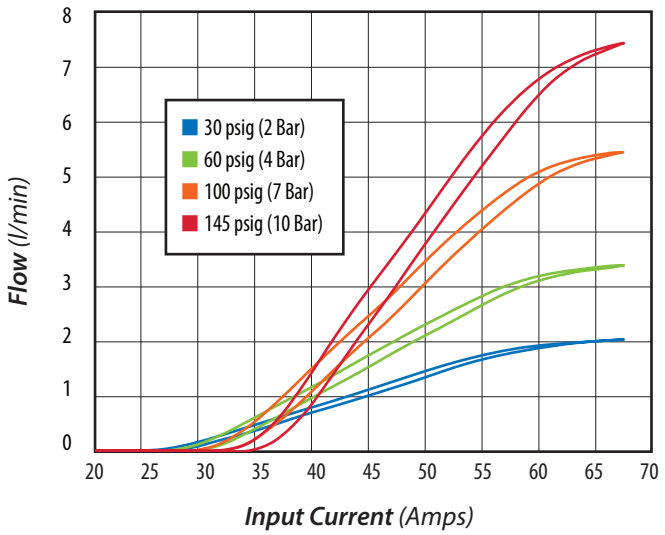
Note: This product is still in development.

Specifications are subject to change.

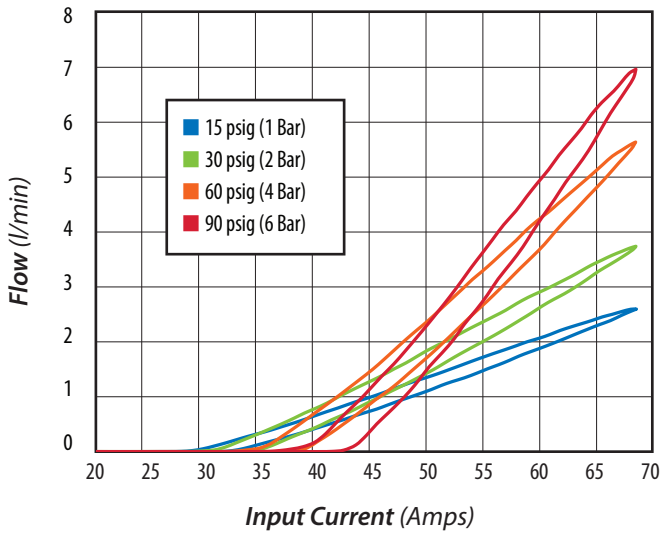


Dimensions shown are in inches (millimeters listed in parentheses).
Visit clippard.com for more detailed 2D and 3D drawings as they become available.

***Typical Performance for 0.012″ Orifice** (Air)*



***Typical Performance for 0.020″ Orifice** (Air)*



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Not Yet Available to Order—*Coming Soon!*

For more info, scan the QR code or visit
clippard.com/link/pv8

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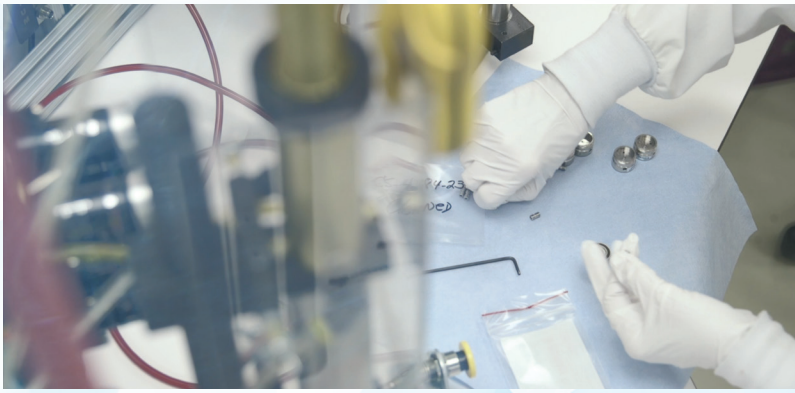
To locate your nearest distributor, call 877-245-6247 or visit **clippard.com/distributors**



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