



Stepper-Controlled Proportional Valves

In-Line, Manifold & Cartridge Styles Now Available!



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

Stepper-controlled linear actuator with acme lead screw

Brass housing and internals

Anodized aluminum body

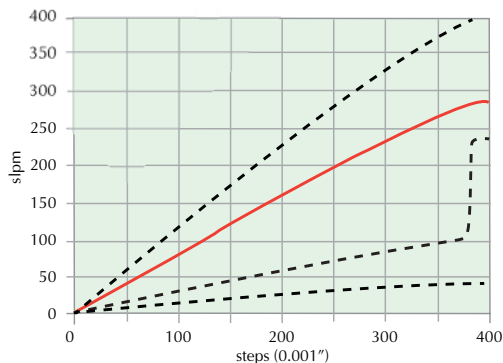
Delrin® seat

Customizable stainless steel needle

1/8" NPT inlet and outlet ports

Characteristic Curve

Flow Rate for SCPV-1 @ 100 psig



— SCPV-1

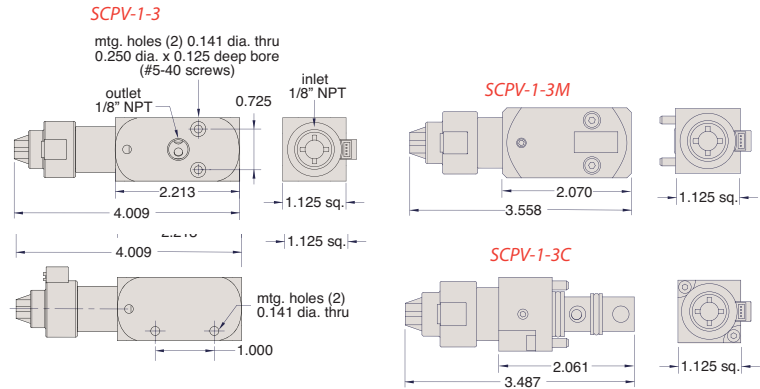
- - - OEM Custom Application Possibilities

Utilizing the industry's most robust and powerful linear actuator, the high-flow stepper-controlled proportional valves outperform the competition in performance and durability.

This valve is 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.

Valve Type:	2-Way Proportional Needle Valves
Configuration:	1 1/8" square body with 1/8" NPT ports
Typical Cycle Time for Full Travel:	0.95 seconds at 100% duty cycle; 0.55 seconds at 25% duty cycle (full open to full close or full close to full open)
Medium:	Compatible gases and liquids
Wetted Material:	Stainless steel, aluminum, brass, Delrin® and FKM*
Pressure Range:	Vac to 100 psig (Vac to 7 bar)*
Flow Range:	0 to 300 slpm*
Flow Resolution:	0.75 slpm/step
Position Resolution:	0.001" per step
Temperature Range:	32 to 184°F (0 to 84°C)
Driver:	Bipolar chopper drive required
Supply Voltage to Motor:	5 VDC
Response Time:	0.95 sec. fully-open to fully-closed*
Mounting:	In-line, Manifold or Cartridge
Power Consumption:	3.85 watts nominal only during adjustment Zero power consumption to maintain position
Seals:	FKM standard. Others available.

* This product is highly modifiable for OEM applications including alternate body materials, flow profiles, cartridge styles, manifold mounting, etc. Please consult factory.



Control Data

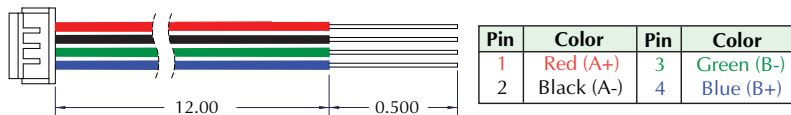
A **Bipolar Chopper Drive** (not included) is a power-efficient method of using current to drive a stepping motor to obtain high stepping rates. The chopper gets its name from the technique of rapidly turning the output voltage on and off (chopping) to control motor current.

Stepper motors require some external electrical components in order to operate. These components typically include a power supply, logic sequencer switching components and a clock pulse source to determine the step rate. Many commercially available drives have integrated these components into a complete package. See www.clippard.com/scpv for more information.

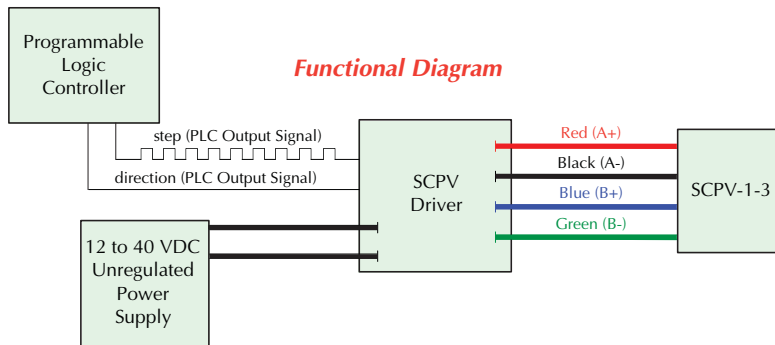
Salient Characteristics Linear Actuator

Wiring:	Bipolar
Current/Phase:	385 mA
Motor Voltage:	5 VDC
Resistance/Phase:	13 ohms
Inductance/Phase:	8.08 mH
Power Consumption:	3.85 Watts
Rotor Inertia:	1.07 gcm ²
Temperature Rise:	135°F (75°C)
Insulation Resistance:	20M ohms

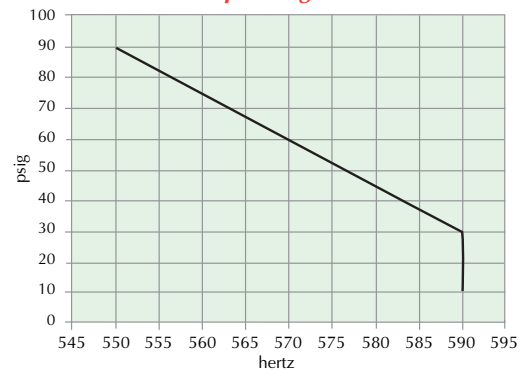
Wiring Harness (included)



Functional Diagram



Maximum Step Pulse Frequency vs. Operating Pressure



Potential Applications

- Medical/Analytical/Industrial Gas Mixing
- Anesthesia Equipment
- Precision Flow Control
- Cuff/Bladder Pressure Control
- Process Flow Control
- Variable Speed Control
- Automation of Needle Valve

Order No.	Description
SCPV-1-3	Proportional Valve, In-Line
SCPV-1-3M	Proportional Valve, Manifold
SCPV-1-3C	Proportional Valve, Cartridge

Warranty See www.clippard.com/warranty

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