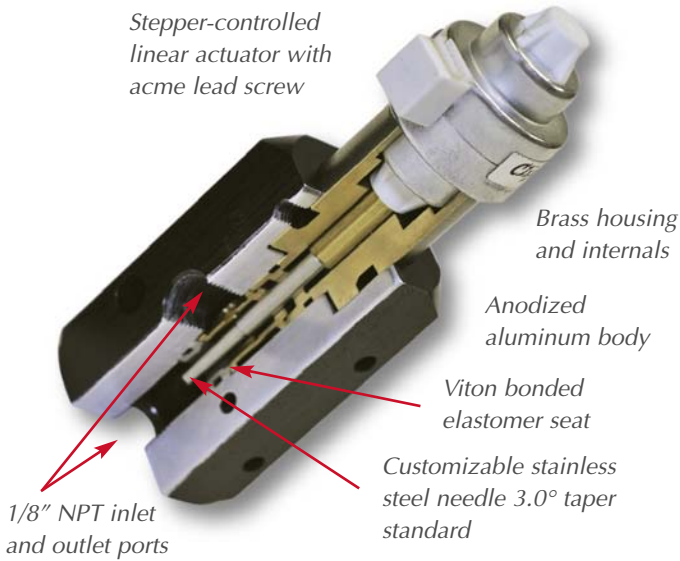




# Stepper-Controlled Proportional Valve

Stepper-controlled linear actuator with acme lead screw

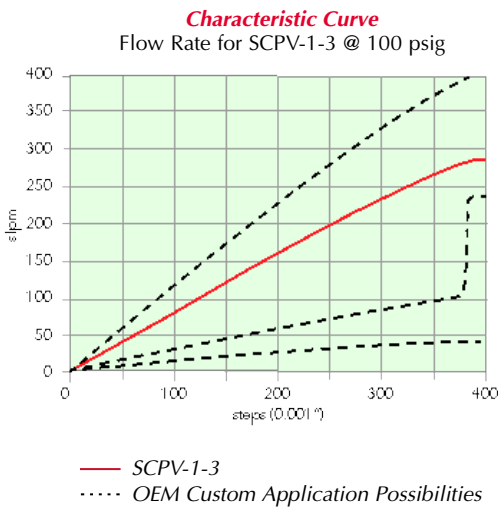
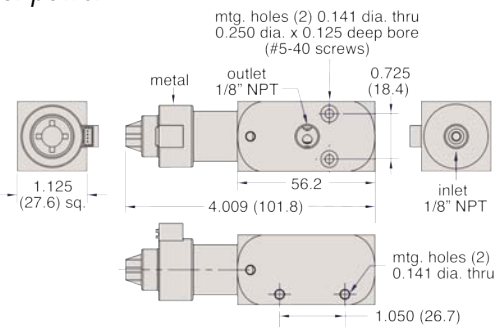


Utilizing the industry's most robust and powerful linear actuator, the high-flow stepper-controlled proportional valve outperforms the competition in performance and durability.

The bonded elastomeric seat achieves excellent sealing ensuring smooth opening and fine control at low flow for millions of cycles.

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.

- 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



<b>Valve Type:</b>	2-Way Proportional Needle Valve
<b>Configuration:</b>	1 1/8" square body with 1/8" NPT ports
<b>Typical Cycle Time for Full Travel:</b>	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)
<b>Medium:</b>	Compatible gases and liquids
<b>Wetted Material:</b>	Stainless steel, aluminum, brass, and FKM*
<b>Pressure Range:</b>	Vac to 100 psig (Vac to 7 bar)*
<b>Flow Range:</b>	0 to 300 slpm*
<b>Flow Resolution:</b>	0.56 slpm/step
<b>Position Resolution:</b>	0.001" per step
<b>Temperature Range:</b>	32 to 184°F (0 to 84°C)
<b>Driver:</b>	Bipolar chopper drive required
<b>Supply Voltage:</b>	12 to 40 VDC (40 VDC optimal)
<b>Response Time:</b>	0.95 sec. fully-open to fully-closed*
<b>Mounting:</b>	In-line
<b>Power Consumption:</b>	3.85 watts nominal only during adjustment Zero power consumption to maintain position
<b>Ports:</b>	1/8" NPT. Others available upon request.
<b>Seals:</b>	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.



## Salient Characteristics Linear Actuator

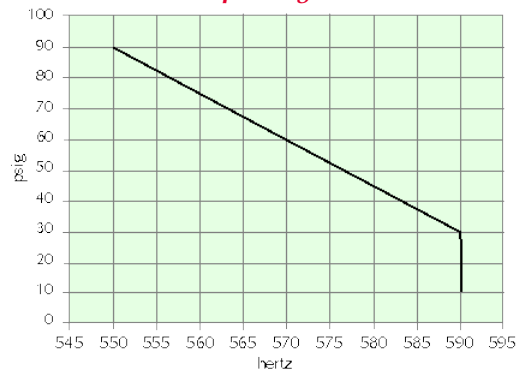
<b>Wiring:</b>	Bipolar
<b>Current/Phase:</b>	385 mA
<b>Motor Voltage:</b>	5 VDC
<b>Resistance/Phase:</b>	13 ohms
<b>Inductance/Phase:</b>	8.08 mH
<b>Power Consumption:</b>	3.85 Watts
<b>Rotor Inertia:</b>	1.07 gcm <sup>2</sup>
<b>Temperature Rise:</b>	135°F (75°C)
<b>Insulation Resistance:</b>	20M ohms

## Control Data

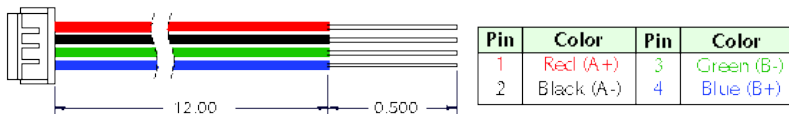
A **Bipolar Chopper Drive** (not included) is a power-efficient method of using current to drive a stepping motor to obtain high stepping rates. The chopper gets its name from the technique of rapidly turning the output voltage on and off (chopping) to control motor current.

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](http://www.clippard.com/scpv) for more information.

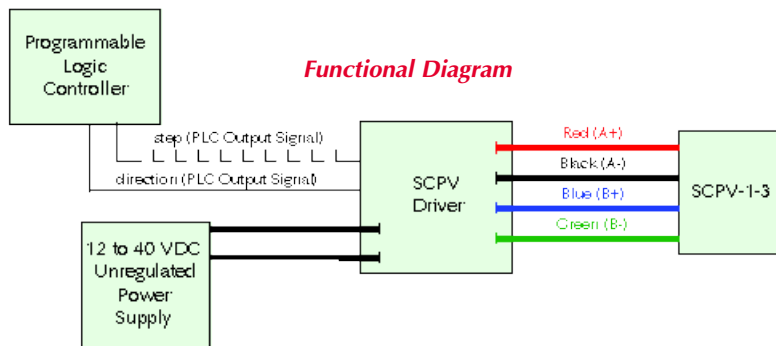
## Maximum Step Pulse Frequency vs. Operating Pressure



## Wiring Harness (included)



## Functional Diagram



## 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, 3° Needle

**Warranty** See [www.clippard.com/warranty](http://www.clippard.com/warranty)

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