



Pneumatics

Space Vector has manufactured and flown over 1500 cold gas components for a variety of commercial and military customers. SVC has over 35 years experience in the design and development of cold gas systems for launch vehicles, space shuttle launched satellite systems, and scientific experiments.



Thruster Valves

Space Vector thruster valves come in 3 coil sizes with output force in the micro thrust range to 25 lbf. All thrusters can be packaged individually or in a cluster arrangement. The large thruster valve is available with a standard 1 amp coil (28 Ω) or a low resistance high response (HR) coil. The inlet flow can be easily altered to accommodate a wide range of inlet pressures. All sizes come with a variety of nozzle configurations and throat diameters to optimize thruster performance.

Individual thrusters may be combined into a single, compact unit to minimize space and facilitate both mounting and plumbing. The thruster mounting block can be customized to fit any contour with both large and small thruster valves.

Type	Thrust	Inlet Pressure	Proof Pressure	Response Time	Operating Voltage	Cycle Life	Dimensions	Weight	Environmental Temperature
Small	< 7 lbs (31 N)	15-500 psi (0.1-3.5 MPa)	750 psi (5 MPa)	Open < 10 ms Close < 5 ms	28 \pm 4 VDC	Greater than 2x10 ⁶ cycles	2.5"W x 2.5"H x 3.0"D	0.8 lbs (0.36 kg)	-11°F to +160°F (-24°C to +71°C)
Large	< 30 lbs (133 N)	15-500 psi (0.1-3.5 MPa)	750 psi (5 MPa)	Open < 25 ms Close < 15 ms	28 \pm 4 VDC	Greater than 2x10 ⁶ cycles	2.5"W x 2.5"H x 3.0"D	1.2 lbs (0.54 kg)	-11°F to +160°F (-24°C to +71°C)
Large HR	< 25 lbs (133 N)	15-500 psi (0.1-3.5 MPa)	750 psi (5 MPa)	Open < 10 ms Close < 10 ms	28 \pm 4 VDC	Greater than 2x10 ⁶ cycles	2.5"W x 2.5"H x 3.0"D	1.2 lbs (0.54 kg)	-11°F to +160°F (-24°C to +71°C)





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Pressure Regulators

Space Vector manufactures both single and dual stage pressure regulators that are capable of accurately regulating within 5%. The output pressure is adjustable from 15 to 500 psi. The dual stage regulator has a switchable output with a pressure range ratio (high to low) of greater than 8 to 1. This feature allows a single thruster to be used in a high thrust mode for large maneuvers or accelerations and low thrust mode for fine pointing. The electrically switchable output can be commanded at any time from high to low or low to high.

Type	Max. Inlet Pressure	Regulated Pressure	Dimensions	Weight	Environmental Temperature
Single	5,000 psi (35 MPa)	15-500 psi (0.1-3.5 MPa)	4.5"W x 3.0"H x 3.0"D (114H x 76W x 76D)	2.35 lbs (1.06 kg)	-11°F to +160°F (-24°C to +71°C)
Dual	5,000 psi (35 MPa)	15-500 psi (0.1-3.5 MPa)	4.5"W x 3.0"H x 3.0"D (114H x 76W x 76D)	2.75 lbs (1.25 kg)	-11°F to +160°F (-24°C to +71°C)



Isolation Valves

Space Vector squib activated isolation valves can be used with any system when long term storage is required or where remote fill capabilities do not exist. These single and dual squib isolation valves can be mounted anywhere downstream of the supply and are activated with 5 amps direct current per bridgewire. Electrical connector is MS3116-8-4S.



Type	Part No.	Max. Inlet Pressure	Proof Pressure	Activation Current	Dimensions	Weight	Environmental Temperature
Single	41611-1	3,600 psi (25 MPa)	5,400 psi (37 MPa)	10 amps 100 msec	3.5"W x 1.5"H x 1.2"D (89H x 38W x 30D)	0.68 lbs (0.31 kg)	-11°F to +160°F (-24°C to +71°C)
Dual	41611-2	3,600 psi (25 MPa)	5,400 psi (37 MPa)	20 amps 100 msec	3.5"W x 1.75"H x 1.2"D (89H x 44W x 30D)	1.0 lbs (0.45 kg)	-11°F to +160°F (-24°C to +71°C)

Latching Valves

Space Vector solenoid activated latching valves are used to selectively isolate flow in a system. Both low pressure and high pressure latching valves are available.

Type	Part No.	Max. Inlet Pressure	Proof Pressure	Activation Current	Dimensions	Weight	Environmental Temperature
High	41691	4,350 psi (30 MPa)	6525 psi (45 MPa)	683 mA @ 28 VDC	1.7"W x 7.0"H x 4.2"D (43H x 178W x 107D)	2.8 lbs (1.27 kg)	-11°F to +140°F (-20°C to +60°C)
Low	41681	300 psi (2 MPa)	450 psi (3 MPa)	683 mA @ 28 VDC	1.7"W x 7.0"H x 4.1"D (43H x 178W x 104D)	2.8 lbs (1.27 kg)	-11°F to +140°F (-20°C to +60°C)

