

# PROPORTIONATING SOLENOID VALVES

MODEL NUMBER	ORIFICE SIZE		Cv	*maximum flow [ml / min]	
	[inch]	[mm]		Air	Water
PSV-1	0.020	0.51	0.009	3500	125
PSV-2	0.040	1.02	0.033	13000	400
PSV-3	0.055	1.40	0.055	21500	700
PSV-4	0.063	1.60	0.068	25000	850
PSV-5	0.125	3.18	0.240	100000	2873

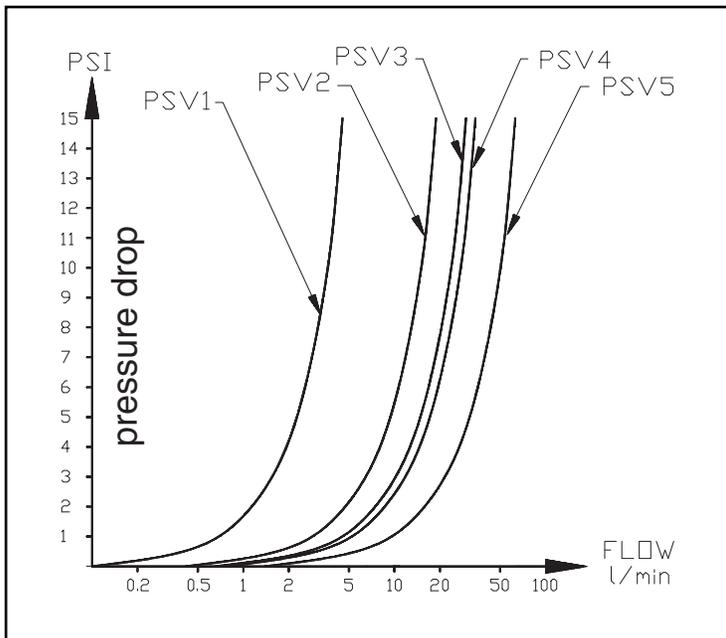
\* based on 10 psig [690 mbar] differential pressure.

## PREPARATION and OPERATION

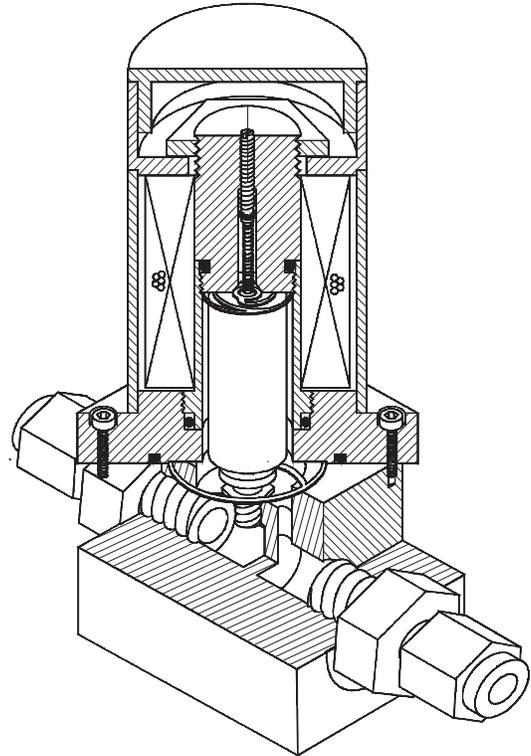
Prior to connecting gas/liquid flow lines inspect all parts of the piping system including ferrules and fittings for dust or other contaminants. Be sure to observe the direction of flow as indicated by the arrow on the front of the valve when connecting the fluid flow system to be monitored.

Insert tubing into the compression fittings until the ends of the properly sized tubing home flush against the shoulders of the fittings. Compression fittings are to be tightened according to the manufacturer's instructions to one and one quarter turns. Avoid over tightening.

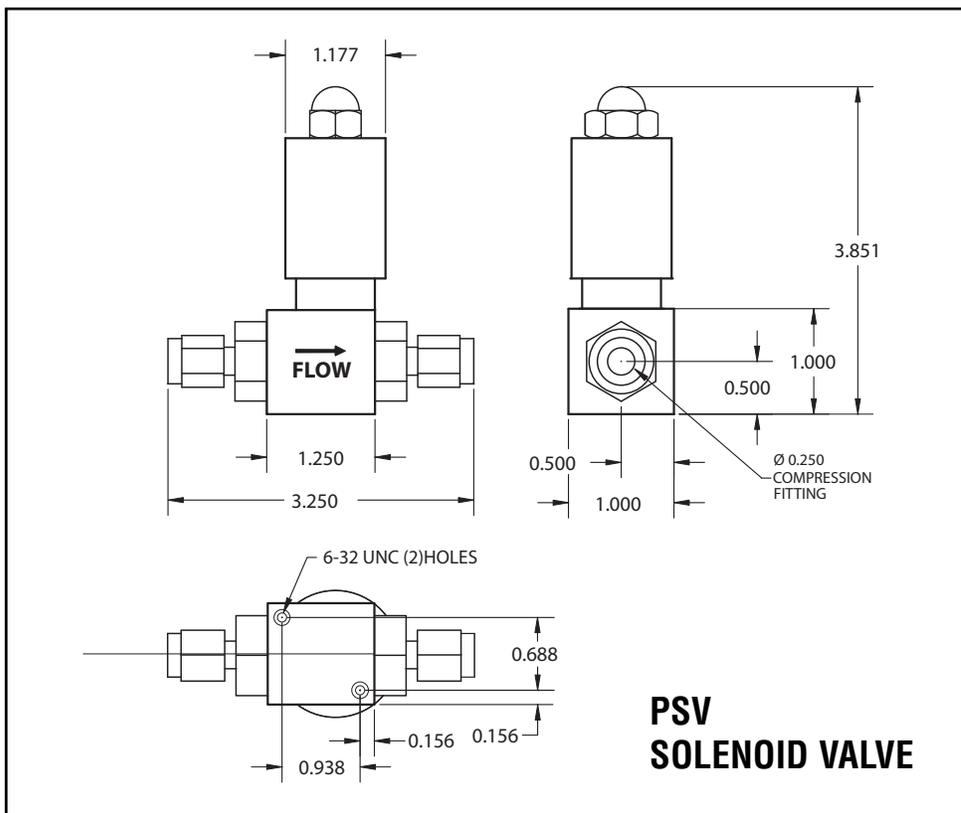
Once installed inline with the gas or liquid to be controlled, apply a variable DC power source at the two solenoid wires to proportionally open and close the solenoid valve (there is no polarity). The valve is set to begin opening at approximately 5 VDC. They can also serve as "on off" valves (valves are not guaranteed for absolute closure). Optional PSV-D DRIVER MODULE is available when use of a 0 to 5 VDC or 4 to 20 mA reference control signal is desired. Contact your distributor or Aalborg® for more information.



PSV Proportionating Solenoid Valves are uniquely designed to respond to variable power inputs (0-30 VDC) to regulate flow of liquids and/or gases proportionately. For added safety PSV valves are normally closed (NC) when de-energized.



SPECIFICATIONS	
POWER INPUT:	0 to 30 VDC.
MAXIMUM CURRENT REQUIRED:	400 mA.
ELECTRICAL CONNECTION:	Male spade connectors.
TYPE OF OPERATION:	Normally closed (nc).
CONNECTIONS:	1/4 inch compression fittings, optional 1/8 inch for sizes 1, 2, 3 and 3/8 inch.
DIMENSIONS:	3.55 inch (90.2mm) high x 3.25 inch (82.6mm) long (with fittings) x 1.00 inch (25.4mm) deep.
WETTED MATERIALS:	Types: 316 and 416 stainless steel, VITON® O-rings; BUNA-N®, EPR or KALREZ® O-rings are optional.
MAXIMUM PRESSURE:	1000 psig (6896 kPa).
MAXIMUM DIFFERENTIAL PRESSURE:	50 psid (345 kPa).
MAXIMUM INTERNAL LEAK:	0.5% FS.
LEAK INTEGRITY:	1 X 10 <sup>-9</sup> scc / sec Helium.
FLUID TEMPERATURE:	14 °F to 122 °F (-10 °C to 50 °C).
MAXIMUM TEMPERATURE (TYPICAL):	174 °F (79 °C) inside, 130 °F (54 °C) outside surface at 24 VDC.
ENVIRONMENTAL (PER IEC 664):	Installation level II; pollution degree II.

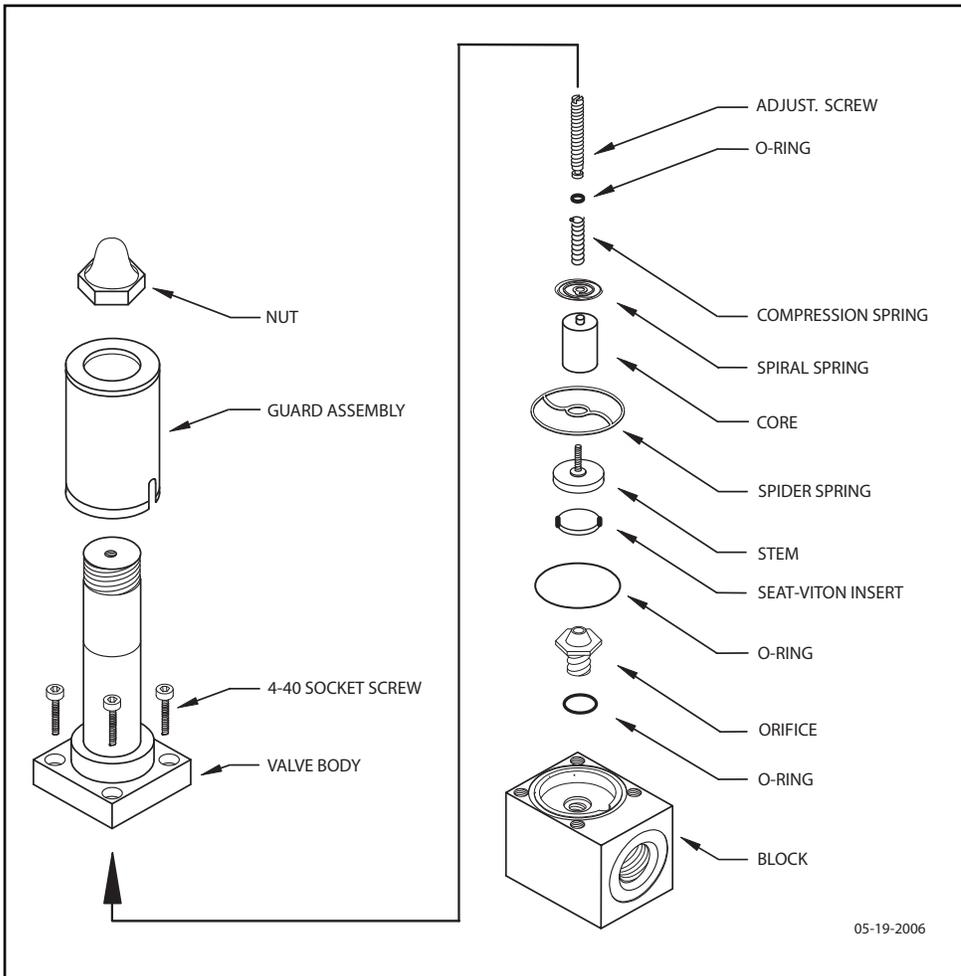


⚠ It is the users responsibility to determine if the instrument is appropriate for their OXYGEN application, and for specifying O2 cleaning service if required. Aalborg® is not liable for any damage or personal injury, whatsoever, resulting from the use of this instrument for oxygen.

⚠ If the valve is left in the active mode for an extended period of time, it may become warm or even hot to the touch. Use care in avoiding direct contact with the valve during operation.

⚠ To protect servicing personnel it is mandatory that any instrument being serviced is completely purged and neutralized of toxic, bacteriologically infected, corrosive or radioactive contents.

⚠ Use of the PSV valve in a manner other than that specified in this instruction sheet, may impair the protection provided by the equipment.



## MAINTENANCE

The solenoid valve consists of 316 and 416 stainless steel, and VITON® (or optional BUNA-N®, EPR or KALREZ®) O-rings and seals. No regular maintenance is required except for periodic cleaning. Various corrosive gases or liquids may demand more frequent replacement of O-rings and seals inside the valve. Be sure to use an elastomer material, appropriate for your specific application. Contact your distributor or Aalborg® for optional sealing materials available.

Set the PSV for maximum flow, and attempt to flush through in both directions with a clean, filtered, and neutral gas such as nitrogen. [Another option for fully opening the valve is to remove the plastic cap on top of the valve, and turn the set screw counterclockwise until it stops]. If blockage is not alleviated, return the unit to your distributor or Aalborg® for servicing.

## TRADEMARKS

Aalborg® is a registered trademark of Aalborg Instruments Inc.  
 Buna® is a registered trademark of DuPont Dow Elastomers.  
 Kalrez® is a registered trademark of DuPont Dow Elastomers.  
 Viton® is a registered trademark of Dupont Dow Elastomers L.L.C.

Aalborg® reserves the right to change designs and dimensions at its sole discretion at any time without notice.  
 For certified dimensions please contact Aalborg®.

**TD 1293 Revision J**

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