

SA / SL Performance Series Valves

1



3/8 thru 4"
Port Sizes



KEY HIGH VACUUM PRODUCTS, INC.

manufactures a wide range of quality stainless steel valves which are at the forefront of the high vacuum industry, in terms of design, quality, reliability, durability and value. Our attention to details from raw material selection, machining practices, parts handling, part fitup, welding, surface finishing, electropolishing, assembly, testing; all are part of the quality cycle that we excel at.

The commitment to perfection in the quality of our valves, immediate responsive service and very competitive pricing, have led to universal recognition and acceptance of our valves. We also have earned the enviable reputation of manufacturing the highest quality valves to the consistently high level of craftsmanship. **KEY HIGH VACUUM PRODUCTS, INC.** strives to set the standard of excellence in manufacturing a high quality, extremely reliable high vacuum valve which is second to none. If you require quality high vacuum valves, immediate service and competitive pricing contact **KHVP**. You'll be glad you did.

General Features:

- Stainless steel type 304L electropolished valve bodies
- All valve bodies are manufactured using the "Pulled Port" method
- All valve bodies are electropolished for corrosion resistance, minimal surface area and faster pump downs
- Compact physical "footprint" of valve assembly
- Viton® seals standard, upon request other appropriate materials are available
- High conductance design
- Long life stainless steel bellow assembly stem seals
- 3/8" through 3" valves have welded bellows stem seals; 4" valves have formed bellows stem seals
- All weld joints are internal or 100% penetration

Manufacturing:

We manufacture with only the finest in raw materials. All materials arrive at our facility with certifications from the mills listing the chemical composition of the stainless steel materials. All machining is done with only water-soluble cutting oil. Once computer numerical control (CNC) machining cells have completed all sub components; all parts are washed in deionized water before welding.



Welding:

Weld acceptance criteria is today more critical than ever before for vacuum components. We, at **KEY HIGH VACUUM PRODUCTS, INC.** devote an exceptional amount of time and effort into the welding process.

This is one of the most critical areas of valve manufacturing, as welded components have a significant effect on the quality of the product being produced or the experiment being conducted. A uniformly thin, smooth weld bead is desired as it will prevent adherence of moisture and particulate, as well as maximize conductance and decreases the surface area within the vacuum envelope when compared to TIG welds that are generated using conventional non microprocessor based methods.

KEY HIGH VACUUM PRODUCTS, INC. uses a mechanized microprocessor based gas tungsten arc welding system (GTAW) also known as tungsten inert gas (TIG). These welds are preformed autogenously, without the use of filler materials in the weld. The orbital type computer based TIG welding system uses a pulsed arc for welds of unequalled quality. Results of using a microprocessor pulsed-based system are a smoother "Flat" weld that does not project into the tube ID, less heat (maximizing corrosion resistance), and a smaller more uniform bead. The result of the automated weld bead is unequalled quality and repeated consistently from the first weld to the last weld throughout the day.

Mounting styles:

Right angle, inline, straight through and combination.

Standard ports:

Tube End, NW-ISO, MET-SEAL and VCR®

Electropneumatic valve:

- Standard 1/8" female NPT inlet for compressed air supply
- Field proven piston design
- 60 to 100 psi operation
- 3/8" OD through 2" OD valves are spring loaded (fail-safe) normally closed; valves with 2-1/2" OD and larger ports are air to open, air to close.
- 120/60 solenoid supplied standard; other voltages are available, see options data block located on valve specification sheet

Mounting / Testing

Valves can be mounted in any position. However the correct or preferred method is to mount the lower port of the valve (the poppet side) towards the vacuum pump. This helps minimize volume and also helps by "pulling" the poppet closed. All valves guaranteed leak tested on a helium mass spectrometer with a sensitivity of 5 x 10⁻¹⁰ torr.

Bakeability:

Viton® seals bakeable to 205° C with the valve in the open position while under a high vacuum,(150°C with valve in the closed position). Care should be taken on pneumatic valves during a bakeout cycle.

Do not heat the actuator assembly over 70°C as damage can occur to the pneumatic actuator components.

Maintenance:

Removing the bellows assembly on **SA/SL** series valves is as simple as removing the bonnet flange screws for o-ring or bellows service. On spring loaded valves, great care should be taken as the air cylinder is under considerable spring tension. The air cylinder should always be restrained or externally clamped before removing any screws to minimize potential hazards to personnel and equipment. It is not necessary to remove the valve body from the system for maintenance issues. Replacement parts are available for all valves from stock.

Quality:

KEY HIGH VACUUM PRODUCTS, INC. takes great pride in our valves and every effort will be made to accomplish the highest quality vacuum valves that will be delivered on time, to compete in a world class market with zero escaping defects (ZED). Every valve is factory tested prior to shipment.

Custom Fabrication:

SA/SL performance series are available from stock in manual and pneumatic versions. We routinely modify are existing valves to meet individual customer requirements; please feel free to contact us.

Conductance SA valves

Part Number	Liters / Sec
SA / PSA-37	2.0
SA / PSA-50	4.0
SA / PSA-75	13.0
SA / PSA-100	15.0
SA / PSA-150	47.0
SA / PSA-200	85.0
SA / PSA-250	130.0
SA / PSA-300	190.0
PSA-400	400.0

Conductance CSAL valves

Part Number	Liters / Sec
CSAL-75	2.2
CSAL-100	4.2
CSAL-150	13.0
CSAL-200	25.0

Conductance SL valves

Part Number	Liters / Sec
SL-37 / PSL-37	2.0
SL-50 / PSL-50	4.0
SL-75 / PSL-75	12.0
SL-100 / PSL-100	13.0
SL-150 / PSL-150	32.0
SL-200 / PSL-200	58.0
SL-250 / PSL-250	92.0
SL-300 / PSL-300	140.0

Conductance ILV valves

Part Number	Liters / Sec
ILV-75	8.0
ILV-100	14.0
ILV-150	31.0

Note: Conductance calculations are based on air valves at molecular flow.

