ASDevices Improving the past... Redefining The Future

µInProve™ PLSV Selection valve

THE MOST RELIABLE, DURABLE AND COMPACT VALVE TECHNOLOGY

PB-01: Sample Stream Selection Valve Configuration

µInProve™ PLSV series valve

The µInProve PLSV series valve is a disruptive valve technology achieving both the lifetime of a diaphragm valve and the constant pressure drop and the simplicity of a rotary valve. This new valve technology is based on a reduced sealing surface area offered by the valve's inserts that replaces the traditional rotor. This revolutionary valve has been designed to respect our most elevated standards that we demand for.

UNIQUE CHARACTERISTICS

- Available in 4, 6, 8, 10, 12 ports (more upon request)
- Three temperature ranges version available
- Two pressure ranges version available
- Insert available in different materials

MINIATURE DESIGN

- Smaller size than any other valve available on the market

MULTIPOSITION ACTUATOR

- Controllable by:
  - RS-485
  - RS-232
  - Digital Input
  - Dry Contact

INNOVATIVE PURGED LIP SEALING VALVE TECHNOLOGY*

- Reduced surface sealing area that improves leak integrity and reduces the required actuation torque
- Slidable insert replaces the traditional rotor
- Inserts are offered in different materials
- Constant pressure to flow drop. Resolve diaphragm valve pressure/flow variation
- Valve inserts easily replacable
- High resistance to particulates

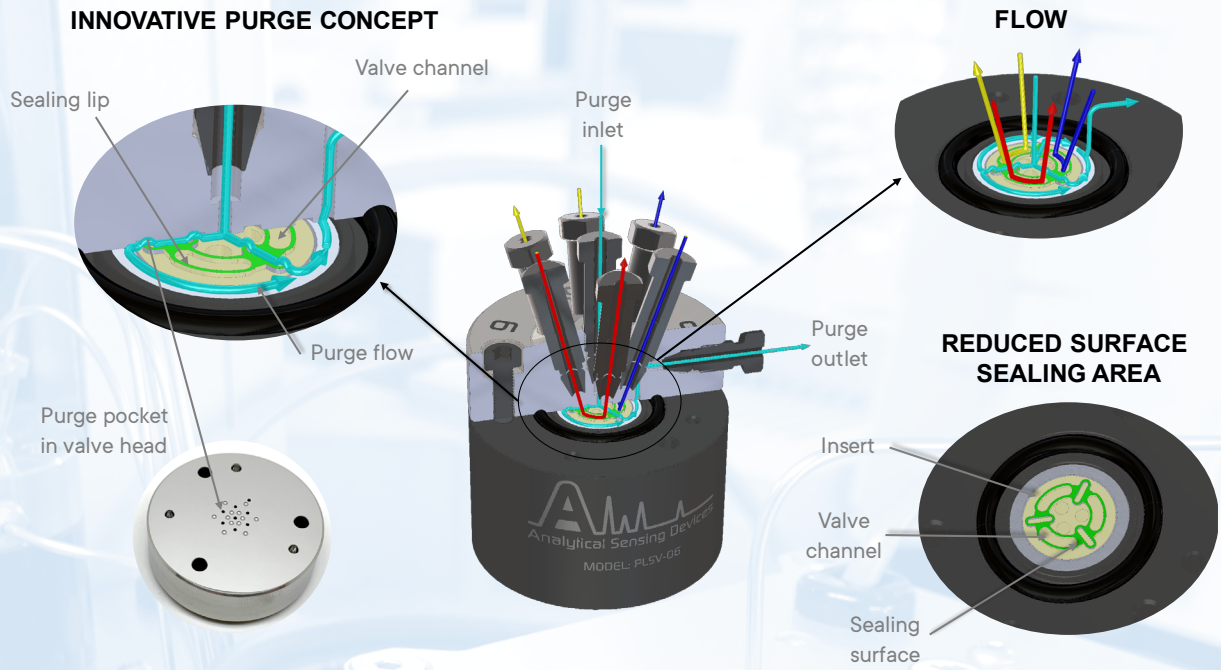
UNBEATABLE PERFORMANCE

- 1 million+ selection in high purity trace gas application and still working without noticeable effect on chromatography
- Sealing integrity never achieved before with a rotary valve
- Exceed diaphragm valve

*Patent pending

Printed in Canada

PURGED LIP SEALING VALVE (PLSV) TECHNOLOGY



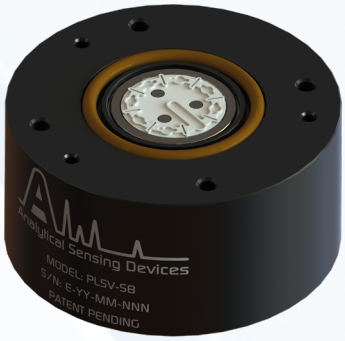
MULTIPOSITION ACTUATOR

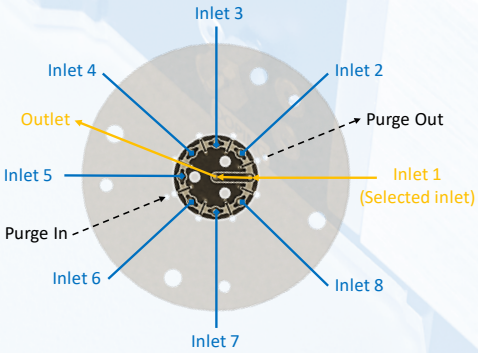
This valve configuration is based on a very precise stepper motor.

- Ultra precise and repeatable positioning done with embedded encoder
- Compact dimension
- Stand-off extender available
- Control software and communication protocol available

μInProve™ AS A SAMPLE STREAM SELECTION VALVE

The insert sliding concept has been adapted to offer a high performance sample stream selection version. In this configuration, a sliding insert is used to select the appropriate stream while sealing the other ports. Due to the unique purge concept, it is impossible to have cross contamination between the streams. This purge system also allows to keep an inert atmosphere inside the valve which is an advantage with hazardous mixtures.





- No Cross Port contamination with unique purge concept
- Available with different wetted materials
- Available 4 to 12 Sample Selection

*patent pending

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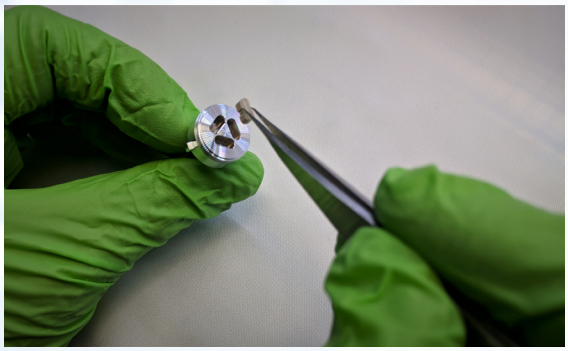
QUALITY TESTING

The ASDevices team has quite a long track record in developing high quality and high performance analytical and industrial valves. Consequently, we know what is required in term of design and process control to deliver the best quality valve.

Before entering the manufacturing process, every single component is thoroughly inspected for any defects.



Cleanliness

During manufacturing, great care is taken to ensure that all parts are kept clean. Not only the wetted parts, but all parts. After being cleaned in an ultrasonic bath with water soluble detergents, all parts are cleaned with high pressure hot UHP water. Following this step, all wetted parts are subject to a proprietary inerting process. From that point, parts are continuously stored in clean packaging and handled following high-cleanless methods.

Leak testing

Our unique patent pending purge system means our valves can't leak when operated as recommanded. However, it is still necessary during manufacturing to do a leak testing to make sure all parts are properly assembled and within specification.

Some manufacturers only do batch testing. We don't. We test every single valve with our ultra sensitive Enhanced Plasma Discharge technology* and unique innovative leak testing method*.

HOW WE CATEGORISE VALVE

Chromatographic valves have always been categorised by their operating temperature with a fixed maximum operating pressure. The specified maximum operating pressure is also most of the time way too high for most chromatographic applications. Most chromatographic methods only involve pressures below 100 PSIG. Most capillary or packed column operate in the range of 10 to 50 PSIG. Pressures in the area of 300 PSIG are generally required for liquid sample only. Tuning a valve for high pressure operation means more stress on components hence an impact on its lifetime. Also, a valve tuned at 300 PSIG does not necessarily work better at 100 PSIG. In fact, its performance will be worst over time. This is why we offer not only different temperature ranges but also different pressure ranges. With this approach, we make sure that you have the best valve for your application.

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*patent pending

Specifications / Model μInProve™

	PLSV-XX-01-XX-LT-XX	PLSV-XX-01-XX-MT-XX	PLSV-XX-01-XX-HT-XX
Standard maximum working pressure (kPa/psig)			
SP: Standard pressure	1034/150	1034/150	1034/150
HP: High pressure	2068/300	2068/300	2068/300
Optional	Up to 700 psig for liquid sample		
Maximum working temperature (°C/°F)	100/212	180/356	250/500
Cross ports (Atm-cc/sec He)	Due to our patented design, it is impossible for our valve to develop a cross port leak when operated within specifications.		
In / Outboard (Atm-cc/sec He)			
Flow path to purge (Atm-cc/sec He)	3.0x10-12 6.0x10-13 (UHP version)	3.0x10-12	3.0x10-12
Estimated actuations/selections	1,000,000	750,000	500,000
Valve cap material	300 Series Stainless Steel		Treated 300 Series Stainless Steel
Cylinder body material	Anodized Aluminium		Stainless Steel
Insert material	PEEK, Vespel, other available		
Number of ports available	4, 6, 8, 10, 12		
Port size (mm/in)	1.0/0.040		
Actuator type	Electrical		
Power Requirement	24 volts / 1 A		
Control Mode	RS-485, RS-232, Digital Input, Dry Contact		
Actuation torque (N•m/lbs•in)	0.3 to 0.7/3 to 6 (Dependant on valve configuration)		
Surface cleaning procedure	Ultrasonic washing, O2 compatible		
Purged flow requirement	1 to 3 ml/min or no flow if kept under vaccum		
Valve Weight	296 g (0,65 lbs)		
Valve Dimension (Ø x H)	48.2 x 66.7 mm (1,89 x 2.62 in)		
Actuator Weight	1900 g (4,18 lbs)		
Actuator Dimension (L x H x W)	160 x 85 x 55 mm (6.29 x 3.34 x 2.16 in)		

PLSV VALVE CONFIGURATION

PLSV - XX - 01 - XX - XX - XX - [OPTIONAL] XX

# OF PORT	OPERATING PRESSURE	OPERATING TEMPERATURE	COATING	VERSION
04 = 4 Ports 06 = 6 Ports 08 = 8 Ports 10 = 10 Ports 12 = 12 Ports	SP = 150PSI/1034kPa HP = 300PSI/2068kPa	LT = 100°C/212°F MT = 180°C/356°F HT = 260°C/500°F	ST = Standard SN = SilcoNert DU = Dursan	UHP = Ultra High Purity

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