

BIO-CHEM FLUIDICS

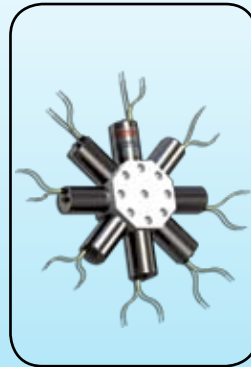
BIO-CHEM VALVE Inert Solenoid Valves, Pumps and Rotary Valves



Micro-Pumps



Isolation Valves



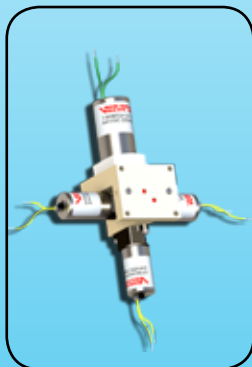
Flow Selection Valves



Pinch Valves



Rotary Valves



Manifold Assemblies



Accessories



Customization Services

**Customized Solutions
for our OEM Clients!**



Solenoid Operated Micro-Pumps

Bio-Chem Valve™ Micro-Pumps are designed to provide a precise, repeatable and discrete dispensed volume of high purity or aggressive fluid. The flow path is isolated from the operating mechanism by a flexible diaphragm.

Features and specifications

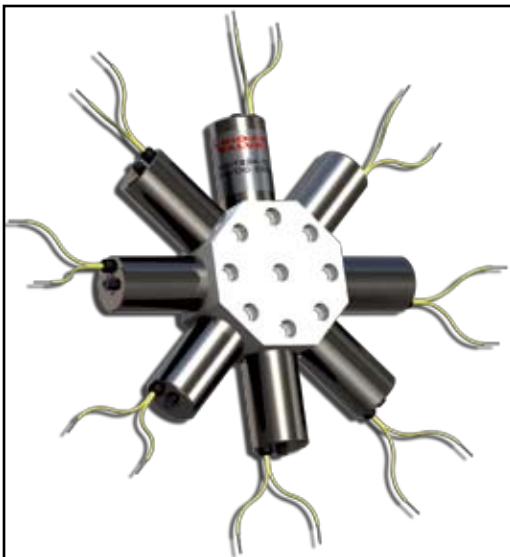
- **Precise dispense volumes.** Dispense volumes range from 4µl to 250µl per cycle with ±5% repeatability across the range.
- **Continuous duty.** The pump actuation mechanisms are designed for continuous duty up to 20 million actuations, corresponding to nearly 3,000 hours of continuous use at 2 Hz cycle rate. NOTE: Actual pump life may vary depending on application.
- **Inert materials.** Our pumps provide a non-metallic inert fluid path for the dispensing of high purity or aggressive fluids. Body materials available: PPS, PTFE, PEEK & POM.
- **Self-priming.** Pumps with dispense volumes ≥ 20µl are able to draw air. The suction created by the larger pumps is sufficient to pull liquids from an unpressurized container located up to 4' 3" beneath the pump.
- **Voltages.** Standard: 12 VDC & 24 VDC. Other voltages available on request.
- **Connections.** Standard: ¼"-28 and ⅝"-24 UNF. Other connections available on request.

Solenoid Operated Isolation Valves

Bio-Chem Valve™ Isolation Valves are solenoid operated valves where the fluid path is completely isolated from the valve's solenoid actuation mechanism. The only wetted parts are the valve diaphragm and the valve body - the electrical components are isolated, hence the name, Isolation Valve.

Features and specifications

- **Multiple body styles.** 2-way normally open, 2-way normally closed and 3-way (one path normally open, second path normally closed until actuated).
- **Long service life.** The valve actuation mechanisms are designed for up to 20 million actuations. NOTE: Actual valve life may vary depending on application.
- **Inert materials.** Isolation valves provide a non-metallic, completely inert fluid path for high purity or aggressive fluids. Body materials available: PPS, PTFE, PEEK & PSU.
- **Voltages.** Standard: 12 VDC & 24 VDC. Other voltages available on request.
- **Connections.** Standard: ¼"-28, ⅛" soft tube, ⅛" NPT, luer fittings, and manifold mountable. Other connections available on request.



Solenoid Operated Flow Selection Valves

Bio-Chem Valve™ Flow Selection Valves allow multiple solenoid operated valve elements to be combined into a single, compact unit. Because each element is operated independently of each other an accurately defined combined outlet flow can be produced from between 2 and 8 individual source streams.

Features and specifications

- **Long service life.** The valve actuation mechanisms are designed for up to 20 million actuations. NOTE: Actual valve life may vary depending on application.
- **Inert materials.** Flow selection valves provide a non-metallic, completely inert fluid path for high purity or aggressive fluids. Body materials available: PTFE & PEEK.
- **Voltages.** Standard: 12 VDC & 24 VDC. Other voltages available on request.
- **Connections.** Standard: ¼"-28 UNF. Other connections available on request.



Solenoid Operated Pinch Valves

Bio-Chem Valve™ Pinch Valves are solenoid operated valves that provide a full bore flow passage through a flexible tube which is “pinched” off to produce a tight seal. Only the easily replaceable tubing comes into contact with the fluid making this style of valve ideal for applications requiring frequent changes of the flow path.

Features and specifications

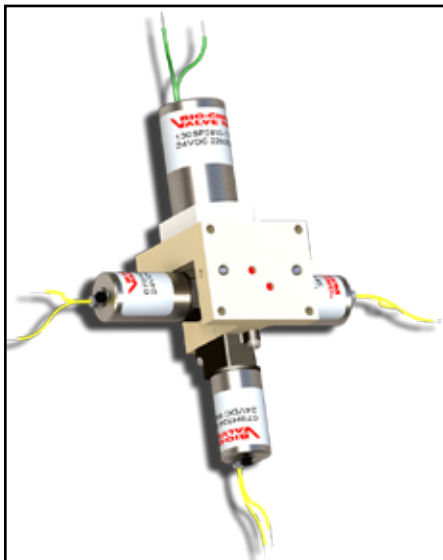
- **Long service life.** The valve actuation mechanisms are designed for up to 20 million actuations. Tubing will experience some wear and should be replaced after 500,000 actuations or sooner, if needed.
- **Tubing.** Our pinch valves, as standard, are supplied with either Silicone Select™ or Bio-Chem (C-Flex) tubing. Both comply with USP XXII, Class VI, FDA and USDA standards (Other, customer supplied tubing may also be used).
- **Multiple body styles.** 2-way normally closed, 2-way normally open and 3-way (one tube normally open and the other normally closed). Single and dual tubing paths.
- **Voltages.** Standard: 12 VDC & 24 VDC. Other voltages available on request.
- **Tubing sizes.** Range of tubing internal diameters available from 1/32" (0.79mm) to 1/4" (6.35mm).

Stepper Motor Operated Rotary Valves

Bio-Chem Valve™ Rotary Valves are stepper motor operated devices used for sample collection, loop injection or flow path selection. The stepper motor turns a rotor inside the valve body, thereby aligning the desired flow paths. The valve body and rotor are the only parts that come into contact with the fluid.

Features and specifications

- **Long service life.** Valves are designed for up to two million port-to-port moves.
- **Low and high pressure options.** Versions are available for low pressure (up to 200 psi/14 bar) and high pressure (up to 3500 psi/240 bar) systems.
- **Choice of fluid flow configurations.** 4, 6, 8, and 10 port models available. Configurations include simple port switching, flow selection/distribution and loop injection.
- **Voltages.** Low pressure: 12 VDC & 24 VDC. High pressure: 24 VDC.
- **Connections.** Low pressure standard: 1/4"-28. High pressure standard: 10-32. Other connections available on request.



Manifold Assemblies

Bio-Chem Fluidics offers a range of valves and pumps that are designed to be manifold mounted. To compliment these devices we also offer a full manifold design service whereby custom-built manifolds can be manufactured to meet your specific flow needs. Manifolds can range from simple blocks for two devices to complex shapes with intricate flow paths for many devices. Bio-Chem Fluidics has produced complex manifolds for as many as 84 Micro-Pumps on a single block.

Features

- Reduction of internal equipment space requirements.
- Allows for the combining of valves, tubing, pumps and connectors into a single, pre-assembled component.
- Elimination of unsightly and unmanageable wiring and tubing.
- Helps to reduce inventory
- Reduces production time and costs associated with testing, handling and assembling multiple components

Accessories

Bio-Chem Fluidics provides a complete range of accessories allowing our clients to construct their fluid circuit from one source. Our accessories are specifically designed to operate with the Bio-Chem Valve™ range of valves.

Accessories include:

- **CoolCube (shown here).** "Hit and hold" circuit for use with any Bio-Chem Valve™ solenoid valve.
- **Tubing.** Inert rigid and soft tubing in a wide variety of sizes.
- **Fitting systems (shown here).** ¼"-28, 5/16"-24 and M6 fittings for pressurized systems up to 1000 psi/69 bar.
- **Bottle Caps.** Inert bottle caps prevent harmful solvents escapes and liquids spill. Designed specifically to be used with our fitting systems.
- **Adaptors.** Our adaptors help our customers transition from their Bio-Chem Valve™ products to other parts of their system. Includes barbed adaptors (shown here), threaded adaptors and couplings.
- **Flow control accessories.** Check valves, bubble traps, and relief valves.



Customization Services

Offering customized solutions is a very big part of what we do - over 90% of all the products we sell are customized for our OEM clients.

- **Custom materials.** Bio-Chem Fluidics has over 35 years of experience in machining high performance plastics and polymers. Over that time we've gathered unmatched knowledge of the properties and applications of these high performance materials.
- **Prototyping.** We offer a full prototyping service to help our customers prove the concept with a real piece of equipment.
- **Manifolds.** Custom built manifolds are used to organize multiple Fluid Control Devices (FCD) such as Isolation Valves and Micro-Pumps into an efficient, pre-assembled, space saving module.
- **Connections.** Customer specified connections can be provided instead of our standard.
- **Dimensional requirements.** Valves can be redesigned to fit specific dimensional envelopes by use of miniature components and stacking.
- **Voltages and electrical connections.** Valves can be modified for use with customer specified voltages, with connectors and special lead wire lengths to suit.



Applications and markets served:

- Chromatography
- Auto-Sampling
- Blood Diagnostics
- Medical Instrumentation
- Biotechnology
- Pharmaceutical
- Life Sciences
- Environmental
- Semiconductor
- Printing
- Agriculture
- Laboratory
- Hematology

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