Clippard

Precision Control Solutions

Aerospace
Agriculture
Analytical Instruments
Animatronics & Special Effects
Automotive
Biotechnology
Dairy & Milking Equipment
Dental
Electronics & PCB Assembly
Energy & Renewables
Education & University Lab
Environmental Monitoring
Food & Beverage
HVAC & Building Automation
Industrial Automation
Laboratory & Research
Life Sciences
Machinery & Equipment OEMs
Medical Devices
Mining & Heavy Equipment
Mobile & Portable Systems
Oil & Gas
Packaging & Bottling
Pharmaceutical
Printing & Marking
Process Control
Recreation & Amusement
Robotics
Semiconductor Manufacturing
Textiles
Transportation & Rail
Water & Fluid Analysis
Wearable Technology

Company

Clippard's history begins with **an engineer and a workbench.** In the late 1930s, Leonard Clippard began hand-winding coils—first to meet his own **exacting standards**, then to meet the needs of others. In 1941, he founded Clippard with a simple mission: **solve real problems with carefully engineered components.**

That same spirit of **curiosity, precision**, and **hands-on engineering** still defines us today.

As the **original inventor of miniature pneumatics**, Clippard helped shape the industry from the inside out. From medical and analytical to industrial and aerospace, our components are **trusted in critical systems** because they're **backed by decades of expertise** and rigorously validated for performance, reliability, and long-term field durability.

Quality People, Quality Products

Our **credo** for dealing with each other, but also with our customers is: **Putting people first.** That means: We always see people first - then the employee, the customer, the business partner. This sequence of values is the foundation of our actions. This is what our heart beats for. That motivates us in everything we do, and the priorities come naturally: **taking time for everyone**, **making personal interest tangible** and inspiring with a **warm charisma** and an extraordinary and **generous service world.** This is us!

Our hope, as 3rd generation family business, is to contribute the improvement of the **well-being of humanity**. Through our innovative long-term thinking, we want to offer future generations, inside and outside our organization, **the prospect of a better and healthier life**. We contribute to nature by acting **sustainably**.

Clippard continuously develops and improves solutions for **medical, analytical** and specific applications in **niche markets**. **Tailor-made solutions** are often offered by thinking along with our customers and tackling challenges together. This allows our customers not only to stay one step ahead of their competitors, but also to produce more cost-effectively.

Markets

Clippard focuses on a broad range of markets, with a strong emphasis on both life sciences (medical & analytical) and selected industrial sectors. Our products are used globally across various applications.

Medical Equipment

In life-critical devices, every component must perform flawlessly. Our cleanroom-assembled, medical-grade solutions ensure absolute purity and reliability where it matters most.

Key advantages of our solutions include:

- **Prevent cross-contamination**
- Achieve **precise and consistent** flow control
- **Reduce power consumption** in portable devices
- **Compactly integrate** into complex systems

Analytical & Laboratory Applications

Instruments for chemical analysis, diagnostics, and environmental monitoring demand extreme precision. Our low-leak, high-accuracy solutions provide stability and repeatability for sensitive measurements.

Key advantages of our solutions include:

- **Ultra-low leak** rates for maximum system integrity
- **Stable and precise** pressure and flow control
- Proven **repeatability** for consistent analytical results
- **Testing and certification** options for the most demanding applications

Miniature Process Applications

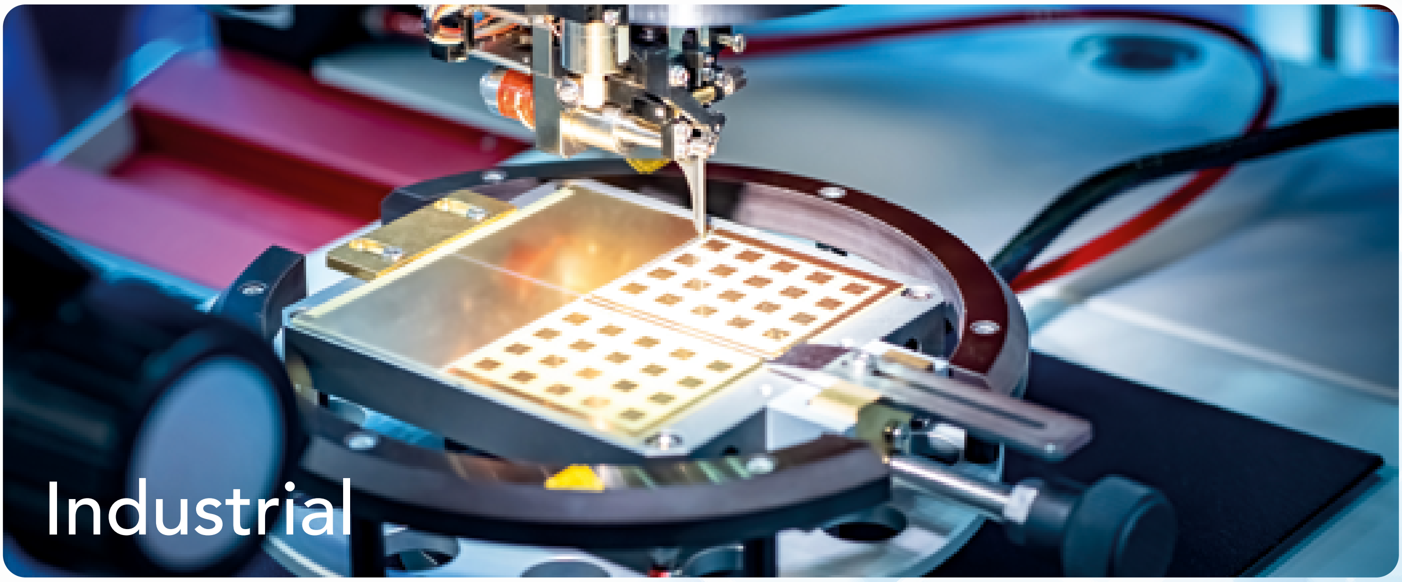
High-speed production lines and compact machinery require components that are fast, durable, and easy to integrate. Our solutions are designed for 24/7 performance under demanding conditions.

Key advantages of our solutions include:

- **Exceptional cycle life** (up to 1+ billion actuations)
- Superior **media compatibility**
- **Leak-tight** performance in sensitive processes
- **Custom-engineered** manifold assemblies


Medical


Analytical


Industrial

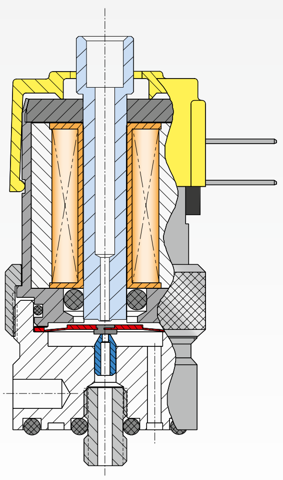
Electronic Valves

Spider Technology

EV Series

Standard

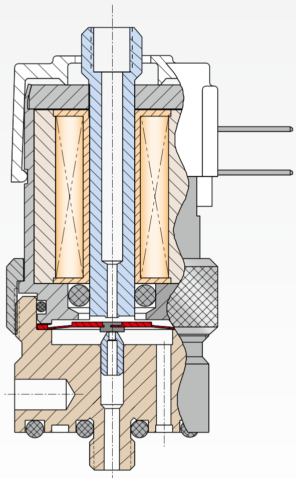
2/2 and 3/2 manifold and in-line mounting. Normally-closed and universally ported versions.



- 2/.2 N.C. & 3/2 N.C./N.O.
- Vacuum to 7 bar
- Up to 17 l/min @ 7 bar
- Electroless nickel-plated steel housing & core
- Nitrile seals standard
- Electroless nickel-plated brass body
- Stainless steel stud & nozzle
- Over 1 billion cycles (under ideal conditions)

High Pressure

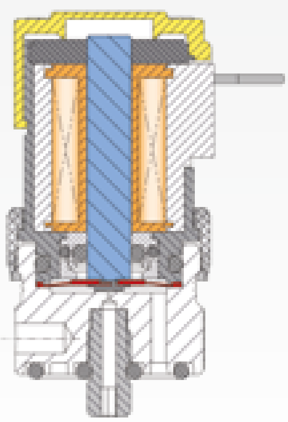
Precision-built 2/2 control valves that accept low voltage, low current signals and convert them to high pressure (35 bar) pneumatic outputs.



- 2/2 N.C.
- Vacuum to 35 bar
- Up to 60 l/min @ 35 bar
- Electroless nickel-plated steel housing & core
- Nitrile seals standard
- Electroless nickel-plated brass body
- Stainless steel stud & nozzle

Oxygen Clean

Manufactured and assembled for use in oxygen-enriched environments for applications that are extremely sensitive to contamination.

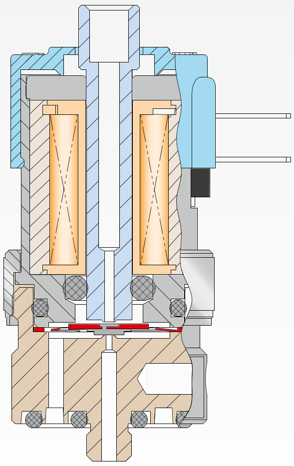


- 2/.2 N.C. & 3/2 N.C./N.O.
- Vacuum to 7 bar
- Up to 17 l/min @ 7 bar
- Integral fitting & stud
- No thread sealant
- All wetted parts cleaned to meet and/or exceed ASTM G93 Level E NVR and Level 500 Particulate and Fibers
- Electroless nickel-plated steel housing & core
- FKM seals; PFPE lubricant
- Stainless steel nozzle

Custom Solutions see p.30

Analytical

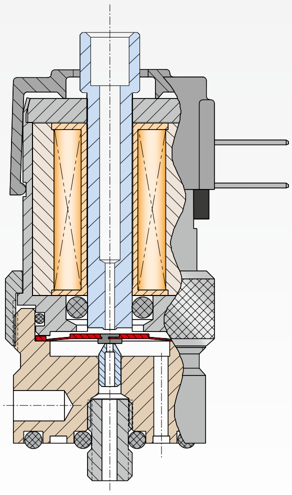
Designed for applications where cleanliness is especially important. Utilizes special materials, processes, and strict quality standards to achieve the highest levels of cleanliness and ultra low leak rates.



- 2/.2 N.C. & 3/2 N.C./N.O.
- Vacuum to 7 bar
- Up to 17 l/min @ 7 bar
- Integral fitting
- No anaerobic sealant
- Larger cross section o-ring improves sealing
- Cleaned to meet and/or exceed ASTM G93 Level E NVR & Level 500 Particulate & Fibers
- One-piece base eliminates many leak points
- Outgassed FKM seals

Corrosion-Resistant

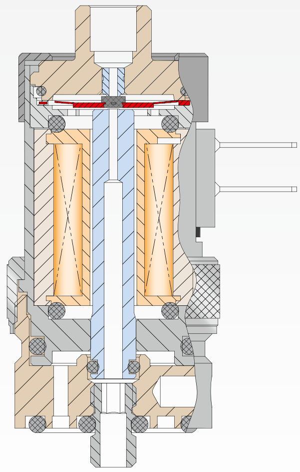
2/2 and 3/2 manifold and in-line mounting. Normally-closed and universally ported versions. Optimized for applications where corrosion resistance is important.



- 2/.2 N.C. & 3/2 N.C./N.O.
- Vacuum to 7 bar
- Up to 17 l/min @ 7 bar
- Stainless steel housing & core
- Nitrile seals standard
- Electroless nickel-plated spider
- Electroless nickel-plated brass body

N.O. Manifold

Normally-open, manifold mount to allow normally-closed and normally-open valves on the same manifold.



- 2/2 & 3/2 N.O.
- Up to 25 l/min @ 7 bar
- Integral fitting
- Spider above coil
- Mounts side-by-side with normally-closed version

For more info, scan the QR code or visit *shop.clippard.eu/link/ev-series*

Electronic Valves

Spider Technology

ES Series

The ES features large cross sectional o-rings, minimal leak points, and proven poppet designs. All mounting hardware is outside of the flow path, and no internal parts are threaded during assembly to reduce the possibility of contamination. The best performance-to-price ratio for low leak valves.

- 2/2 & 3/2 N.C.
- Vacuum to 7 bar
- Up to 17 l/min @ 7 bar
- Over 1 billion cycles (under ideal conditions)
- No threads in flow path
- Fast response (5 to 10 ms)
- Close mounting - 24 mm on center, overall height less than 25 mm
- Ideal for ultra-low leak applications (0.01 sccm leak rate)

DV Series

Designed as the next generation of our trusted EV Series. With a solid, compact design and extremely high flow rates, these valves are well-suited for many applications in a variety of industries including medical, analytical, packaging, manufacturing and more.

- 2/2 N.C. & 3/2 N.C./N.O.
- Vacuum to 7 bar
- Up to 100 l/min @ 7 bar
- Fast response time (10 to 15 ms)
- Low heat rise/low power
- Robust stainless steel spider flat armature spring
- Designed to accommodate large flows with more stroke
- CE Approved

EHS Series

Delivers robust performance in higher pressure (up to 70 bar or 1,000 psig) applications, prioritizing both safe functionality and the reduction of potential leak points.

- 2/2 N.C.
- 0 to 70 bar
- Up to 58 l/min @ 70 bar
- Specially engineered for reliability in demanding high-pressure applications
- Easy installation & maintenance
- Compact, space-saving design with optimized flow path

Poppet Technology

SV & ST Series

Extremely fast response time for accurate dosing of minute volumes. Remarkably quiet and emit very low vibration. Subminiature size and low energy consumption make them ideal for transportable and mobile systems.

SV Series (7 mm)

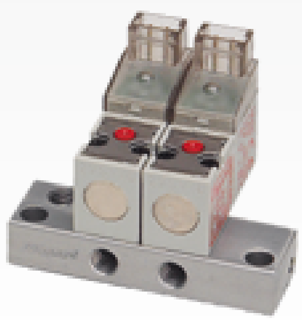
- 2/2 & 3/2 N.C.
- 0 to 10 bar

ST Series (8 mm)

- 3/2 N.C./N.O.
- 0 to 10 bar

10 & 15 mm Series

For applications where compact, electronically-controlled pneumatics are needed. Available in Normally-Open or Normally-Closed versions, these 2/2 and 3/2 valves feature a high strength, lightweight glass-filled nylon body.



- 2/2 & 3/2 N.C./N.O.
- 0 to 10 bar (15 mm)
- Up to 140 l/min (15 mm)
- Reliable plunger valve technology
- Ideal for less demanding applications
- Great performance/value ratio

PHV Booster Valves

Delivers high performance in a compact, pressure-piloted design. Its low power consumption ensures efficient, cool-running operation, ideal for dense assemblies and space-constrained environments.

- 3/2 N.C.
- 2 to 10 bar
- Up to 400 l/min @ 7 bar
- High output flow from a small footprint
- Fast, efficient actuation with low power consumption
- Mounts directly to manifolds for space-saving assemblies

Custom Solutions see p.30

For more info, scan the QR code or visit *shop.clippard.eu/link/electronic-valves*

Media Isolation Valves

Isolation Valves

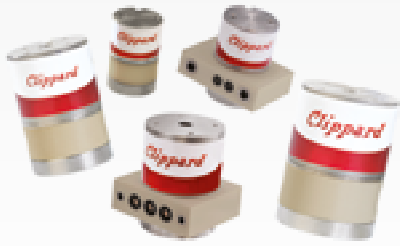
NIV Series

This solenoid-operated device utilizes a flexible diaphragm to isolate the actuation mechanism from the fluid path. This unique, multifunctional valve stem results in a simplified design with fewer parts, longer life and minimal dead volume. In addition, all wetted areas of the NIV series are PTFE, making it ideal for use with corrosive media.

- 2/2 N.C. & N.O., 3/2 (selector/diverter)
- Vacuum to 2 bar
- Up to 60 l/min @ 2 bar (air)
- All wettes areas PTFE
- Ideal for use with corrosive media
- Minimal dead volume
- Low power consumption
- Fully flushable
- High life cycle

PIV Series

The PIV series features the same solenoid-operation and multifunctional valve stem design as the NIV series but with the added benefit of a PEEK body. This enables the PIV series to deliver higher pressures and provide enhanced durability.



- 2/2 N.C. & N.O., 3/2 (selector/diverter)
- Vacuum to 7 bar
- Up to 115 l/min @ 7 bar (air)
- All wetted areas PTFE or PEEK
- Ideal for use with corrosive media
- Minimal dead volume
- Low power consumption
- Fully flushable
- High life cycle

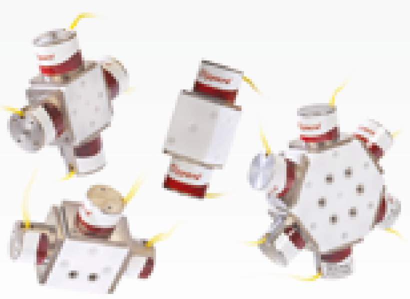
AIV - Air-Operated Valves

Like the NIV and PIV series, the AIV series features Clippard's unique multifunctional valve stem design for longer life and minimal dead volume. The difference with the AIV series is that it also provides the added benefit of air operation, which is, by definition, intrinsically-safe.

- 2/2 N.C. & N.O., 3/2 (selector/diverter)
- Vacuum to 7 bar
- Up to 180 l/min @ 7 bar (air)
- All wetted areas PEEK & PTFE
- Zero power consumption (air-piloted)
- No heat build-up
- Minimal dead volume
- Fully flushable
- High life cycle

NIV Series Gradient Mixing Valves

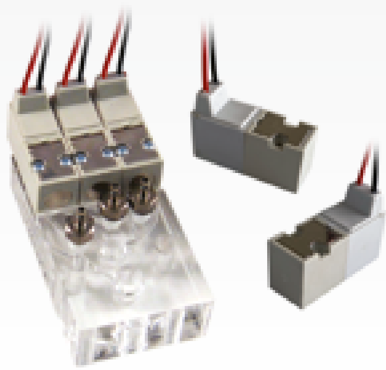
NIV series multi-channel gradient valves feature multiple 2/2, Normally-Closed PTFE media isolation valves connected around a central body. This unique design provides significant reduction in internal volume with enhanced mixing capabilities. Each actuator operates independently, allowing for flow of various media to be mixed or for one media to be split into multiple streams.



- 2/2 N.C. (bidirectional)
- 2, 3, 4 or 6 valves
- Vacuum to 2 bar
- Up to 60 l/min @ 2 bar (air)
- Individually controlled flow paths
- Mix flow from various media
- Split one media into multiple streams

E2S Compact 10 mm Valves

The E2S series valve combines the versatility of Clippard's compact 10 mm valve line with the advantages of media isolation. With a durable, glass-filled nylon body and an EPDM diaphragm that separates the actuation mechanism from the flow path, the E2S series is an excellent choice for dispensing a wide range of aggressive gases and liquids.



- 2/2 N.C. (monodirectional)
- 0 up to 2.5 bar
- Up to 30 l/min (air)
- Compact, 10 mm glass-filled nylon body
- EPDM diaphragm membrane

Option: Hit & Hold Circuit

The general principal behind a hit and hold circuit is that the valve is energized to full power for a short period of time before dropping the voltage and current to a specified level. Applications that are sensitive to heat rise can greatly benefit from hit and hold circuits by maintaining lower temperatures in a variety of applications.

- Lower power consumption
- Less heat generation by the coil
- Increased life cycle
- Ideal for applications sensitive to heat
- Available on NIV & PIV Series valves

Custom Solutions see p.30

For more info, scan the QR code or visit *shop.clippard.eu/link/isolation-valves*

Media Isolation Valves

Pinch Valves

NPV Series Electronic Valves

These solenoid-operated devices are designed to open and close tubes for controlling flow of liquids and gases. Pinch valves have no areas or dead volume where fluid can become trapped. Energizing the solenoid retracts or attracts the plunger, which opens or closes the tube.

- 2/2 N.C. and/or N.O.
- Up to 2 bar
- Solenoid-operated
- Unobstructed flow path
- Hygienic & easy to clean
- Low power consumption
- High life cycle
- Each valve comes with 30 cm (12”) of silicone tubing
- Tubing is easily replaceable
- Zero dead volume

NPP Series Pneumatic Valves

The NPP series pinch valves utilize an air-piloted design to provide the same functionality and benefits as the NPV series but with the added benefit of lower power and greater force. This makes them ideal for applications that are particularly sensitive to heat or those that require larger or firmer tubes.

- 2/2 N.C. or N.O.
- Air-piloted
- Unobstructed flow path
- Ideal for applications that are sensitive to heat
- Low power consumption
- High life cycle
- Each valve comes with 30 cm (12”) of silicone tubing
- Tubing is easily replaceable
- Zero dead volume

Panel Mounted Valves

For applications that require better access or enhanced cleanliness, the NPV and NPP series are also available with a panel mount option, providing the additional benefits of seamless integration and easy accessibility.

- Enhanced cleanliness
- Unobstructed flow path
- Easier access
- Clean appearance
- Reduced contamination risk
- Zero dead volume

NPV7 Long Stroke Valves

The NPV7 provides the same functionality as the standard series but with the added benefits of a longer stroke. This makes it ideal for applications that require greater flow or those that utilize viscous or particulate-laden media. This series incorporates an integrated hit & hold circuit board installed for lower power consumption, less heat and increased cycle life.

- 2/2 N.C.
- 0 to 1.4 bar
- Solenoid-operated
- Unobstructed flow path
- Higher flow capacity
- Extended stroke length
- Hit & Hold Circuitry Standard
- Zero dead volume

Option: Hit & Hold Circuit

The general principal behind a hit and hold circuit is that the valve is energized to full power for a short period of time before dropping the voltage and current to a specified level. Applications that are sensitive to heat rise can greatly benefit from hit and hold circuits by maintaining lower temperatures in a variety of applications.

- Lower power consumption
- Less heat generation by the coil
- Increased life cycle
- Ideal for applications sensitive to heat
- Available on NPV Series valves

Option: State Feedback Circuit

Provides real-time status monitoring of valve position

Enables system diagnostics and closed-loop control

Improves reliability and safety in critical applications

- Available on NPV Series with Hit & Hold Circuit Option

Custom Solutions see p.30

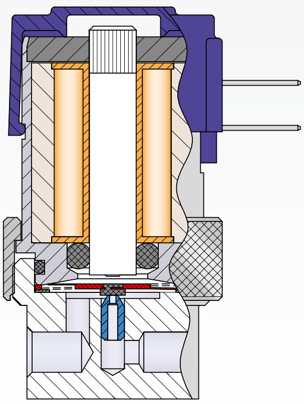
For more info, scan the QR code or visit *shop.clippard.eu/link/pinch-valves*

Proportional Valves

Spider Technology

EVP Series

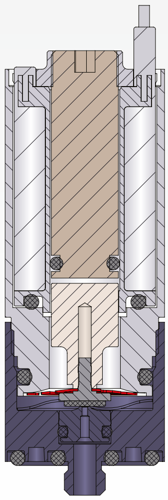
Precision-built utilizing Clippard's renowned Spider Technology with the additional capability for proportional control. The EVP provides air or gas flow control and varies the output flow based on the current input to the solenoid. Controllability and overall value are the main features of this series.



- 0.3 to 7 bar
- Up to 22 l/min
- 3 voltage coils
- ≤10% hysteresis
- ±10% of given flow target accuracy
- Fast response cycle
- Long life

DVP Series

The DVP series offers an extremely high cycle life, fast response, linear flow gain, low power consumption, and flows over 60 l/min. The DVP provides air or gas flow control and varies the output flow based on the current input to the solenoid.



- 0 to 7 bar
- Up to 68 l/min
- Fast response
- Spider Technology for long life

PV Series (8 mm)

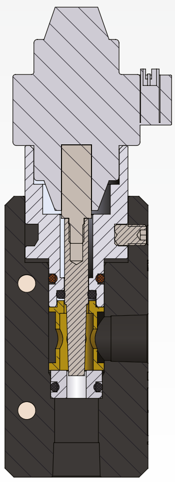
The tiny PV series provides precise, linear control for accurate dosing and flow regulation. With low power consumption, they offer excellent energy efficiency while maintaining quiet operation and minimal vibration. Their versatile design makes them suitable for a wide range of applications.

- 0 to 10 bar
- Up to 7 l/min
- Ideal for compact assemblies
- Fully customizable design
- Very low hysteresis

Stepper Motor

SCPV Series Needle Valves

Utilizing the industry's most robust and powerful linear actuator, the SCPV series stepper-controlled proportional valve is ideal for critical medical, analytical, and industrial automation applications that require high resolution, high flow, low hysteresis, and variable control of inert gases.



- Vacuum to 7 bar
- Up to 300 l/min
- High accuracy stepper-driven needle valve
- Fully customizable design
- Very low hysteresis
- "Set it and forget it" control
- 0.025 mm step resolution

Custom Solutions see p.30

Drivers

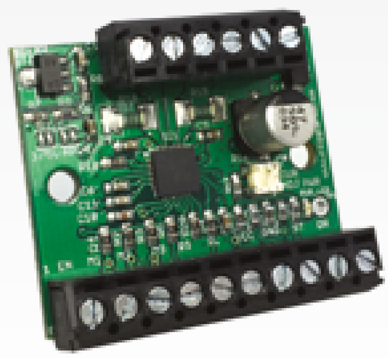
EVP/DVP Drivers

The EVPD Proportional Valve Driver fast-tracks valve-control applications. This product is ideal for laboratories and OEM product development, and can be customized to fit OEM applications including control parameters. The EVPD produces driver current for Clippard's EVP series valves proportional to input control signals.

- Plug-and play interface between Clippard's EVP & DVP series valves and PLCs or other controls
- Linearized valve response right "out of the box"
- Three selectable valve output ranges
- Five signal outputs to choose from
- Two configuration options: stand-alone PCB or enclosed in housing
- Compact size

SCPV Drivers

The SCPVD-1 Valve Driver is a stepper motor driver designed to operate Clippard SCPV Series Stepper-Controlled Proportional Valves in 1/16, 1/8, 1/4, 1/2, and full step modes.



- +7 to +35 VDC supply voltage
- Maximum 2A/phase
- 1/16, 1/8, 1/4, 1/2, & full step modes
- 5V or 3.3V logic inputs (jumper selectable)
- Thermal shutdown circuitry
- Crossover current protection
- LED power supply indicator light

For more info, scan the QR code or visit *shop.clippard.eu/link/prop-valves*

Electronic Pressure & Flow Controllers

Pressure Controllers

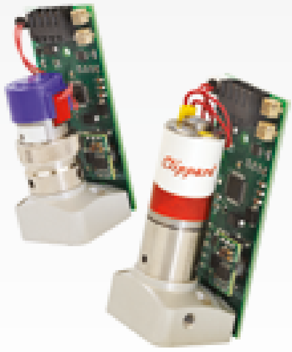
CPC High Resolution Series

Utilizes Clippard's proven EVP and DVP lines of electronic proportional valves to allow for steady, repeatable downstream pressure as demand or processes change. The result is precise, linear pressure control within a closed-loop system with ultra- high resolution and repeatability.

- Calibrated range:
  Vacuum to 10 bar
- Available with IP65 rated housing
- No integral bleed required
- Utilizes Clippard's proven DVP or EVP valves
- Electronic fill & bleed pressure controller
- Static & dynamic applications

CP1 Dynamic Pressure Series

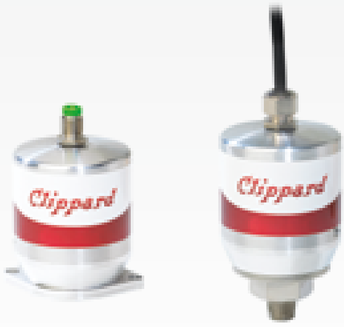
Provides precise and accurate pressure control in a compact and lightweight package. This high-performance pressure regulator is well-suited for a wide range of precision pressure control applications where space is limited.



- Calibrated range:
  0 to 10 bar
- Compact & cost effective
- Non-relieving
- Utilizes Clippard's proven DVP or EVP valves
- Dynamic applications

CPS Pressure Sensors

These sensors are conditioned and offer a customized calibration around your application requirements, allowing for a full scale accuracy of 0.25% over the calibrated range. They can be used in conjunction with Clippard's Cordis pressure controller or as a standalone unit.



- Standalone or used with Cordis pressure controls
- Customized calibration around your requirements
- Static or dynamic applications
- IP65 protection rating

CHV High Volume Booster

Provides the same precise linear pressure control within a closed-loop system with ultra-high resolution and repeatability, but with the added benefit of significantly higher flow capabilities.

- Higher flow (up to 1.200 l/min)
- Calibrated Range: Vacuum to 10 bar
- IP65 rated housing
- Utilizes Clippard's proven EVP valves

CHP High Pressure Series

Utilizes Clippard's EHV line of high pressure electronic valves to allow for steady, repeatable downstream pressure under static conditions. The result is precise, linear pressure control within a closed-loop system.

- Higher pressure (up to 70 bar)
- Calibrated range: Vacuum to 70 bar
- IP65 rated housing
- Utilizes Clippard's high pressure EHV valves

CFC Electronic Flow Series

Utilizes an extremely fast-reacting mems technology sensor upstream from Clippard's proportional valve. Unlike other mass flow controllers, the Cordis requires less than one minute warm-up, features a pressure drop ≤ 36 cm H_2O, and includes flow ranges as low as 0 to 30 sccm.

- Calibrated Range: 0 to 15 l/min
- 50:1 turndown ratio
- ≤ 36 cm H_2O pressure drop
- <1 minute warm-up
- Optional integrated regulator

Custom Solutions see p.30

For more info, scan the QR code or visit *shop.clippard.eu/link/cordis*

Custom Solutions & Technology

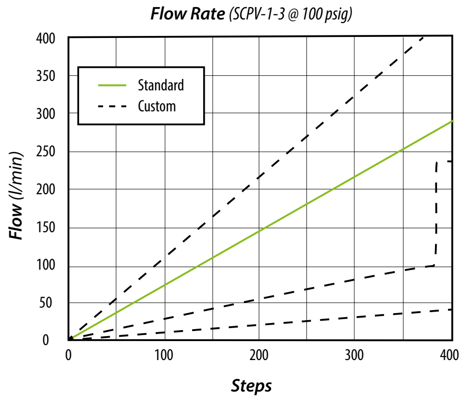
Proportional Valves

Custom Electronic Needle Valves

Tailored valve designs deliver ultra-fine, linear flow control with minimal hysteresis

Options for body materials, sealing, and porting ensure compatibility
with your media and system

Precision calibration and flexible packaging adapt the solution to your exact application needs



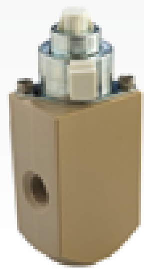
Special SCPV Modifications

Vacuum flow profiles up to 500 l/min; high flow at low pressure

Available in multiple materials, including PEEK, stainless steel, and brass

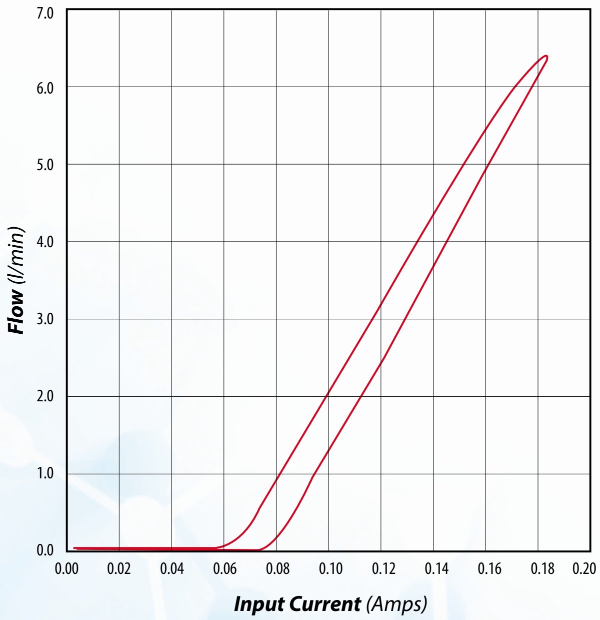
Water and fluid control with zero leak and full shut-off capability

Various motor options to suit different applications

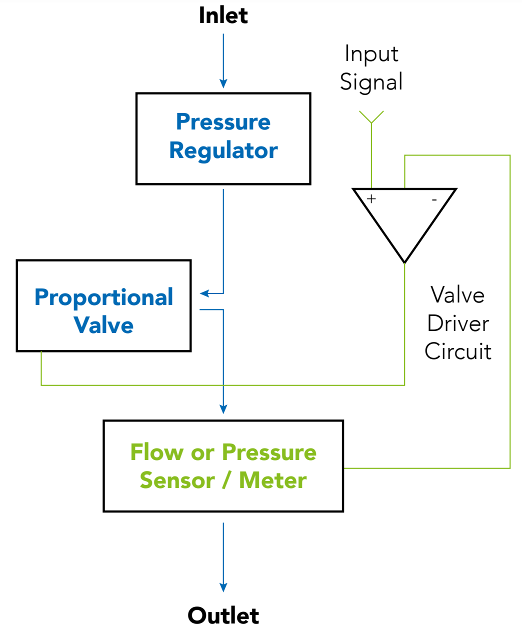


Spider Technology

EVP Series Performance Curve



Proportional Valve Circuit



For more info, scan the QR code or visit
shop.clippard.eu/link/prop-valves

Electronic Pressure & Flow Controllers

CPC Series with External Sensor

Same CPC Cordis pressure controller specifications but with external feedback sensor

External sensor eliminates mechanical hysteresis when piloting externally piloted regulators

Allows for remote sensing and control of pressures where accuracy is most needed

Custom Solutions

Application-specific calibration provides ±0.25% full-scale accuracy with exceptional repeatability

Seamless integration of valves, controllers, and sensors ensures reliable closed-loop performance

Rapid prototyping and flexible packaging options accelerate development and reduce time to market

CLOSED LOOP TECHNOLOGY

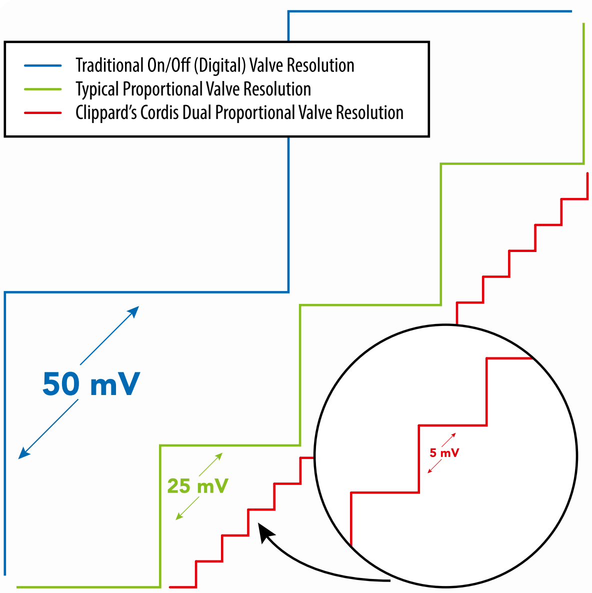
- Precise, real-time feedback control
- Ultra-high resolution and repeatability
- Application-specific calibration for 0.25% accuracy
- Stable performance under changing system demand

Cordis Technology

Exceptional Resolution

Scale: 0.25 volts

⟵ mV Sensitivity ⟶



Pressure vs. Flow Control: Choosing the Right Approach

PRESSURE

Force

The stored energy available to do work

Ideal when the outcome depends on maintaining a precise force, such as regulating chamber pressure, ensuring consistent clamping force, or stabilizing gas delivery.

FLOW

Rate

The speed at which the energy moves

Ideal for critical applications that require governing speed and volume, such as dosing, blending, or controlling the velocity of a carrier gas.

For more info, scan the QR code or visit *shop.clippard.eu/link/cordis*

Directional Control Valves

Manual Valves

Toggle Valves

Manually actuated with a plastic or metal toggle. When the toggle is in the "on" position, air flows from the inlet to the outlet and the exhaust port is blocked. Moving the toggle to the "off" position closes the inlet and opens the outlet to an exhaust port which vents the outlet to atmosphere.

- 2/2, 3/2, & 5/2
- Imperial (#10-32, 1/8" NPT) & metric (M5, G1/8)
- Detented or momentary actuation
- Fill & bleed (3/3) valve

(J)SLV Sleeve Valves

Sleeve valves offer large flow capability with a relatively short stroke, and no cross-over between inlet and exhaust on the 3/2 models. Unlike ball valves, sleeve valves require no space for a handle. They provide flexibility in pipe connections. Available with either male or female threads or both.

- 2/2 & 3/2 N.C.
- #10-32, 1/8" NPT & 1/4" NPT
- Input pressure of 10 bar
- ENP brass body

PB Palm Button Valves

Standard or Low Force 3/2 Normally-Closed poppet valves available in red, green or black. Optional bracket kit provides additional mounting versatility.

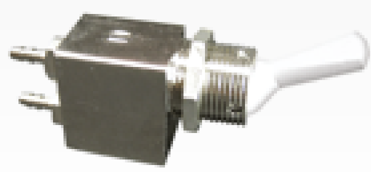
- 3/2 N.C.
- 1/8" NPT Ports
- Red, Green or Black
- Direct Mount

Custom Toggle Valves

Tailored detent, momentary, and sealing options to match your system needs

Compact, reliable designs built for quick actuation and long service life

Flexible mounting and porting configurations for seamless integration



For more info, scan the QR code or visit *shop.clippard.eu/link/directional-valves*

Air Pilot Valves

Low Pressure Air Pilot Valves

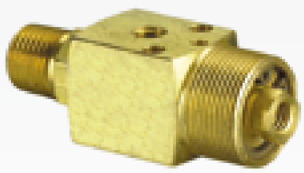
The term low pressure is a relative term. These series of valves can sense pressure down to 40 mm $H_2$0 and actuate amplifier valves that will give out put pressure of 10 bar and over 600 l/min to cover most high flow miniature pneumatic applications.

- 3/2 N.C. & N.O.
- Amplifier valves
- Bleed pressure piloted limit valves
- Electronically piloted valves available

PAV/PAVO Series

Compact poppet and spool valves with integral pilot actuator

Handles high flow in miniature, remote installations



- 2/2 & 3/2 N.C. & N.O.
- #10-32 & 1/8" NPT

Custom Air Piloted Valve Solutions

Tailored configurations balance actuation force, flow capacity, and footprint for your application

Flexible mounting, porting, and seal options ensure seamless system integration

Proven durability with rapid prototyping support to accelerate design and production

Custom Solutions see p.30

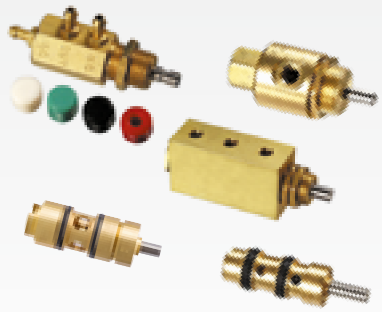
For more info, scan the QR code or visit *shop.clippard.eu/link/air-pilot*

Directional Control Valves

Mechanical Valves

Stem Valves

Stem valves change the flow path when the stem is either depressed or released.

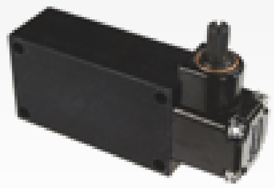


- 2/2 & 3/2 N.C. & N.O.
- 5/2 Mono & bistable
- Imperial & metric
- Miniature size with high flow poppet or spool designs
- Exceptionally low leakage rates
- Durable brass and stainless steel construction
- Threaded or cartridge style for flexible integration in tight spaces

LVA Limit Valves

Heavy duty, different actuator arms available

Ideal for position sensing and control in pneumatic circuits



- 2/2 & 3/2 N.C./N.O. Can be configured as N.O. or N.C.
- Up to 20 bar

MWV Whisker Valves

For use with bleed pressure piloted control circuits.

The valve's coil spring, stainless steel whisker, is easily replaceable and can be formed to different shapes.

- 2/2 N.C.
- Imperial (#10-32 & 1/8" NPT) & Metric (M5)

Actuators

(Ball) Cam Actuators

Actuate valves or switches via mechanical movement from any direction

Roller and double-pivoted cam options for single-direction activation

Compact, durable solutions for mechanical interface applications

MPA Air Pilot

Compact 2/2 and 3/2 poppet and spool valves with integral pilot actuator

Handles high flow in miniature, remote installations

Simple installation; brass construction; ideal for low power applications

For more info, scan the QR code or visit *shop.clippard.eu/link/directional-valves*

Custom Solutions see p.30

Push Buttons

Mounts directly on valve stem for manual operation of valve.

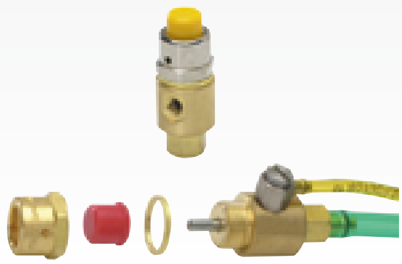
Small size permits attachment to valve before valve is mounted through 12 mm diameter hole.

Prevents over-travel of valve stem by providing a positive stop.

Captivated Push Buttons

Captivated push buttons are sold as kits, adaptable to either 1/8" or 3/16" diameter stems.

Each kit includes a colored acetyl push button, brass housing nut, 1/16" brass spacer, and lockwasher for assembly.



Heavy-Duty Push Buttons

Use on individual stem-operated valves or in panel mounting applications.

Available in a variety of colors for easy color-coding of control system valves.

Features a built-in spring for automatic button return, which places no additional valve load.

Minimatic® Actuators

Clippard's line of 22 mm and 30 mm actuators may be coupled with a variety of Clippard control valves with a simple adapter system providing a single assembly of a panel-mounted actuator and air valve.

	Description	Function
	**Flush Push Button**	Manual push in, spring return
	**Extended Push Button**	Manual push in, spring return
	**Automatic Push/Turn Mushroom**	Manual push in, latches in, turn clockwise to unlock, spring return
	**Maintained Twist 90°**	Turn clockwise to latch in, turn counter-clockwise to release

	Description	Function
	**Spring Return Twist 45°**	Turn clockwise and hold for in, release for spring return
	**Manual Push Mushroom**	Manual push in, spring return
	**Key Twist 90° Maintained** *(with keys)*	Turn clockwise to latch in, counter-clockwise to release, key with drawable
	**Push Key Mushroom** *(with keys)*	Manual push in, auto latch in, clockwise to release, key with drawable

For more info, scan the QR code or visit shop.clippard.eu/link/actuators

Control Valves

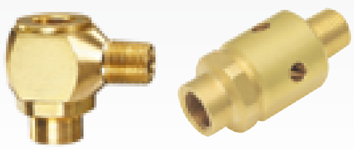
Check Valves

Check Valves allow flow in one direction and prevent it in the opposite direction. The pilot-operated series adds the ability to remotely signal a free flow through the valve.

- Imperial (#10-32, 1/8"NPT) & metric (M5, G 1/8)
- Direct or in-line mount
- Brass or ENP brass
- Pilot-operated

Exhaust Valves

Provides fast response times and high flow with multiple porting options. These valves also enable the use of smaller directional control valves and longer control lines, and can be used as a shuttle valve.



- Imperial (#10-32, 1/8" & 1/4" NPT) & metric (G 1/8 & G1/4)
- Direct mount
- Brass body with molded Nitrile seal

Flow Control Valves

Combines needle and check valve that controls flow in one direction and allows free flow in the opposite direction.

- Imperial (#10-32 & 1/8" NPT) & metric (M5 & G1/8)
- Threaded or push-quick
- Meter in & meter out versions
- Aluminum, anodized aluminum or brass body

Needle Valves

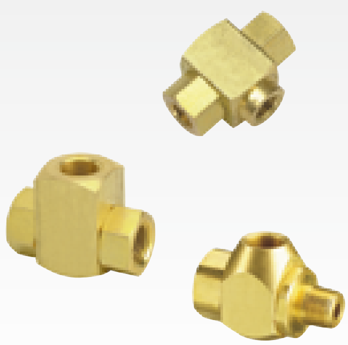
Precisely controls flow in both directions with adjustable orifice

Compact design with coarse or fine adjustment options

- Imperial (#10-32, 1/8"to 3/8" NPT) & metric (M5, G1/8 to G3/8)
- In-line or manifold mounting

Shuttle Valves

Allows flow from one of two inlets while blocking the other

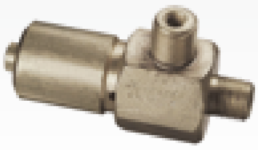


- Imperial (#10-32, 1/8" NPT) & metric (M5 & G1/8)
- Direct or in-line mounting

Pulse Valves

Converts a continuous air signal into a single, timed pneumatic pulse

Essential for timing and sequencing in pneumatic control circuits



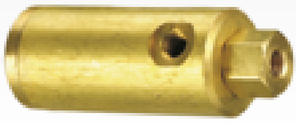
- 3/2 N.O. (after pressurization until reset)
- Imperial (#10/32 & 1/8” NPT) & metric (M5 & G1/8)

WDV Water Drawback Valves

Prevents drips by pulling back liquid when valve closes

Normally-closed design with spring-biased piston

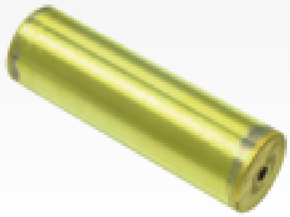
Ideal for quenching and water spray applications



- 2/2 N.C.
- Imperial (#10-32, 1/8” NPT) & metric (M5, R1/8)
- In-line mount

MAT Volume Tanks

Used for providing a time delay in pneumatic circuits.

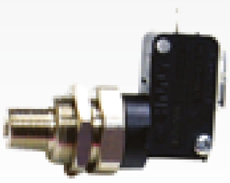


- 1.6 to 65 cm^3
- Input pressure max. 10 bar
- Direct or in-line mount

Air Switches

Converts pneumatic signals into electrical output using SPDT switches

Mechanically operated or air piloted; manual override options available



- 0.4 to 4.5 bar
- UL / CSA / VDE certification

IND Pressure Indicators

Plunger style air indicators.

Multiple color options

- Imperial (#10-32, 1/8” NPT) & metric (M5 & G1/8)
- 1 to 10 bar

Custom Solutions see p.30

For more info, scan the QR code or visit shop.clippard.eu/link/control-valves

Control Valves

Pressure Regulators

Regulators are offered in either relieving or non-relieving versions. The relieving design maintains a constant pressure output even when downstream conditions change, while non-relieving regulators do not automatically compensate for changes in downstream flow or pressure.

There is no vent to atmosphere, as in a relieving type regulator, and the output pressure can increase due to a downstream event. Non-relieving versions can accommodate compatible liquid applications.

A variety of adjustment options and mounting styles are available.

MAR-1 Series

- Up to 20 bar
- Brass body
- Multiple adjustment options
- Various mounting styles

DR-2 Series

- Up to 20 bar
- Screwdriver or knob adjustment
- ENP brass bodies
- Highly accurate & repeatable
- Designed for applications where zero air consumption is required (non-bleed)
- Industrial & medical applications

Custom Regulator Solutions

- Engineered spring & diaphragm selections to deliver the control your process requires
- Configurable body materials, port sizes, & mounting styles for any environment
- Proven designs with customization options to balance performance & footprint

For more info, scan the QR code or visit *shop.clippard.eu/link/press-reg*

Custom Solutions see p.30

Hoses & Tubing

Sanitary Food Grade Silicon

Platinum-cured for purity; preserves taste, aroma, and color

Ideal for food and beverage applications requiring cleanliness

Supplied in rolls or pre-installed on select pinch valves

Medical/Laboratory Grade Silicon

Platinum-cured for high-purity medical and lab use

Designed for critical applications in medical devices and analytical equipment

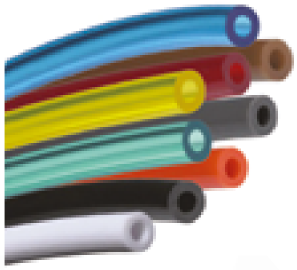
Available in rolls or pre-installed on Clippard pinch valves

Polyurethane Tubing

Superior chemical resistance and higher temperature tolerance than vinyl

Naturally flexible and secure with barb fittings - no clamps required

A durable solution for pneumatic and fluid transfer systems

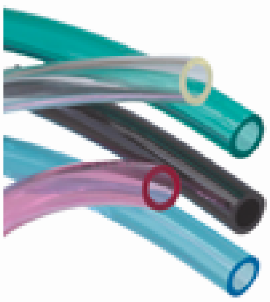


Urethane Tubing

Combines flexibility with abrasion and tear resistance

Excellent tensile strength and elongation for demanding environments

Available in a variety of colors and sizes for easy system design

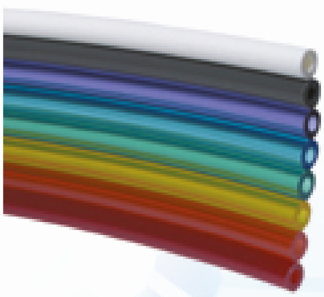


Vinyl Tubing

Cost-effective, versatile, and highly flexible with excellent clarity

Suitable for lab, food, beverage, medical, and pharmaceutical applications

Available in single or ribbon styles for neat, efficient assembly



Every tubing available in different roll lengths.

For more info, scan the QR code or visit *shop.clippard.eu/link/tubing*

Fittings

Barb Connectors

Minimatic® barb fittings provide a flexible, easy alternative to ferrule and push-to-connect design fittings. Electroless nickel plating provides corrision resistance in applications involving high moisture. Nitrile gasket included with #10-32 threads except when ordered in bulk.

- Imperial & metric
- Miniature size provides low profile
- Electroless nickel-plated brass / Stainless steel 304 & 316
- Holds to the burst pressure of polyurethane hose
- Low leak potential
- Available with many hose barb sizes

Push-Quick

These fittings provide a simple method of connecting pneumatic components to each other and system piping. They generally provide higher flows than barbed fittings because they allow full flow through the hose/tubing I.D. with no smaller orifice required.

- Imperial & metric
- Easy tube insertion for quick assembly
- Compatible with nylon, urethance, polyethylene, and polypropylene tubing
- Allow full flow through the hose/tubing I.D.
- Available in a wide range of tube sizes

Zero Dead Volume

These fittings eliminate trapped media, ensuring cleaner and more efficient fluid systems. Designed for critical applications where no residual volume can be tolerated, they simplify system flushing and greatly reduce the risk of contamination.

- 1/4-28″, #10-32, or 1/8″ NPS
- 1/16″ or 3/16″ barb

Quick Connects

Quick connect assemblies feature one-way check valve and barb hose connector. Complete assembllies or body and connectors sold separately.

- Brass body and stem
- 0 to 20 bar working pressure
- Nitrile seals
- Single & triple barb

Precision Orifices

Perfect for medical, analytical, aerospace, and industrial applications

Supports exact dosing, timing, and microflow adjustments for liquids or gases

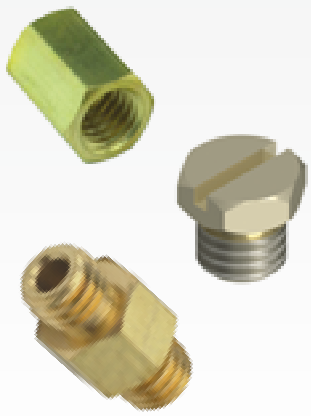
- Imperial & metric
- 0.03 to 0.25 mm
- Tolerances to ±0.0025 mm enable ultra-precise flow control
- Up to 35 bar

Accessories

Male and female connectors in durable brass or stainless steel

Compact #10-32 nipples and couplings simplify connections

Designed for reliable performance in high-pressure and critical systems

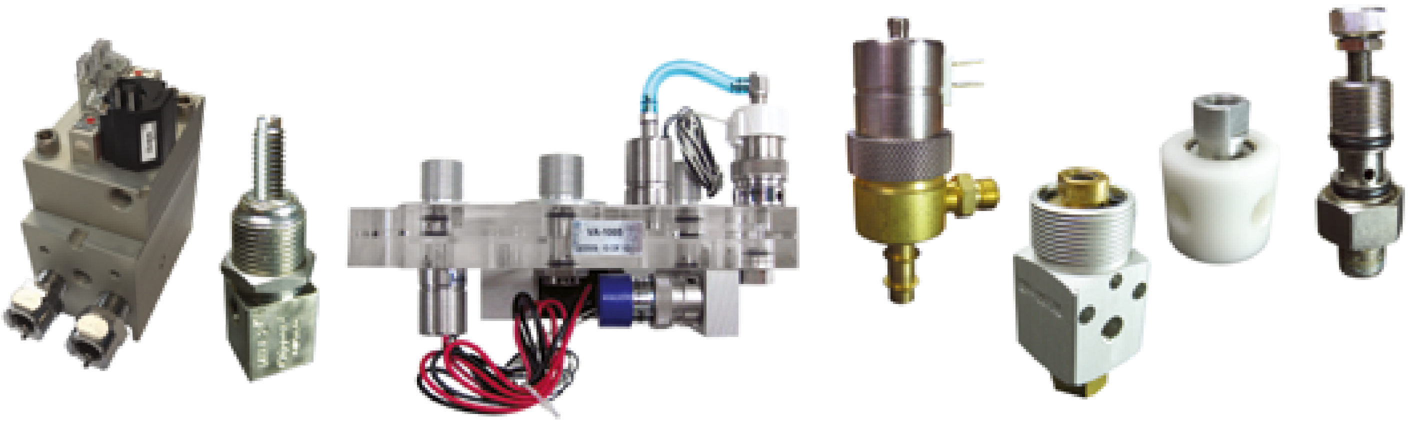


- Imperial & metric
- Nipples
- Hex couplings
- Reducers
- Threaded L, T, X
- Adapters
- Plugs

For more info, scan the QR code or visit *shop.clippard.eu/link/fittings*

Custom Solutions see p.30

Vertical Integration Delivers **Superior Solutions**



Challenges We Love

OEM faced a complex, time-consuming assembly process using multiple manifold blocks, valves, and hardware

System suffered from misalignment, leakage, servicing difficulties, and inconsistent appearance

OEM needed to improve accuracy and precision

Systems had strict requirements for size, weight, power, and durability

Equipment had to withstand rough handling in critical field environments

OEM faced costly downtime from high-flow valves failing prematurely

Frequent on-site maintenance was required due to equipment size and complexity

Replacement process was time-consuming and expensive

Solutions We Deliver

Engineered and machined a one-piece manifold using proprietary methods

Direct engineer-to-engineer collaboration uncovered additional inefficiencies

Recommended process improvements beyond the original request

Simplified the assembly, improved quality and appearance, and reduced scrap rates

Replaced select components with more precise Clippard valves

Designed a compact, all-in-one manifold to integrate components and reduce leak points

Delivered a solution that improved accuracy, reliability, and durability

Enabled the OEM to launch a smaller, lighter, next-generation product

Replaced failing valves with long-life Clippard valves

Delivered added benefits of lower power consumption and higher flow rates

Designed a compact, all-in-one manifold to mount all valves in one block for quick servicing

Reduced maintenance time and costs while improving overall system performance

Call today and let's connect **your engineers** with **our engineers**

OEM's system was leaking and had to meet strict requirements for size, heat, flow, and pressure

Design had to maintain an existing footprint, minimize internal volume, and ensure precise flow control

Multiple leak points in the existing manifold further complicated reliability

OEM needed a solution for handling difficult media under demanding conditions

Standard valves and controllers caused inconsistencies, leakage, and wasted resources

System required compatibility, efficiency, and long-term reliability

Replaced select components with Clippard valves for precise, low-heat flow control

Identified gaskets as additional leak sources and eliminated them with a custom acrylic diffusion-bonded manifold

Delivered a compact, ultra-low leak solution with tighter tolerances and a smaller footprint

Improved reliability, accuracy, and overall system performance

Applied special valves and manifolds to minimize leak points and reduce wasted media

Replaced inefficient components with a low-bleed design

Delivered a solution that was more accurate, more durable, and more cost-effective

+32 10 45 21 34 or **tech@clippard.eu**

Built Around Your Specs

1 Project Initiation

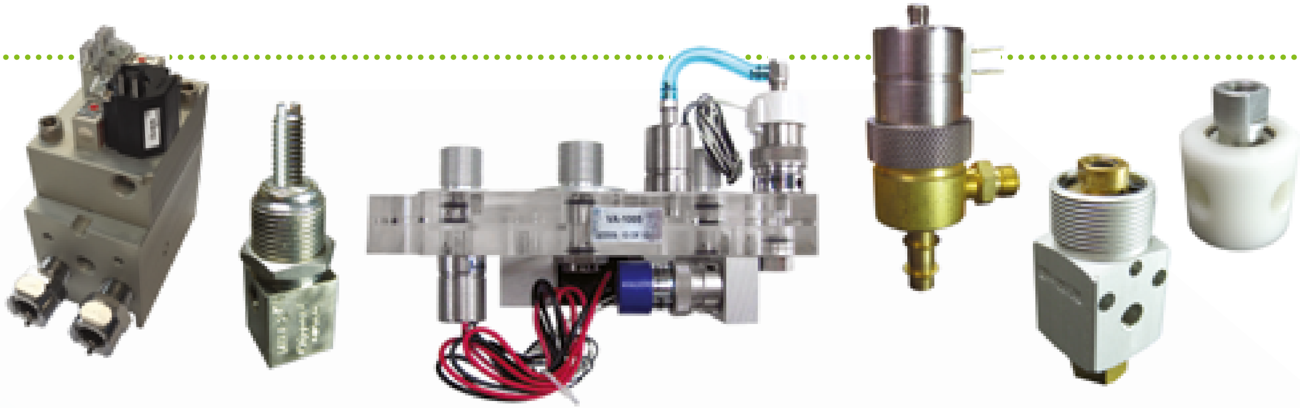
Setting the Foundation

We start by aligning on technical and commercial goals. Our team ensures we have the right people at the table and a clear understanding of our application before moving forward.

2 Project Proposal

Transparent Expectations Up Front

You'll receive a detailed outline—including estimated pricing, engineering fees, deliverables, timelines, and key Clippard contacts—so you know exactly what to expect.



4 Design & SCD Sign-Off

Engineering Alignment

Our engineers collaborate with your team to finalize the design. The SCD is then reviewed and approved to ensure full technical clarity before prototyping begins.

5 Prototyping Process

From Digital to Physical

Once a prototype is ordered, we manufacture, test, and internally validate the design. You receive physical parts for your own evaluation and feedback.

For more info, scan the QR code or visit *shop.clippard.eu/link/custom-solutions*

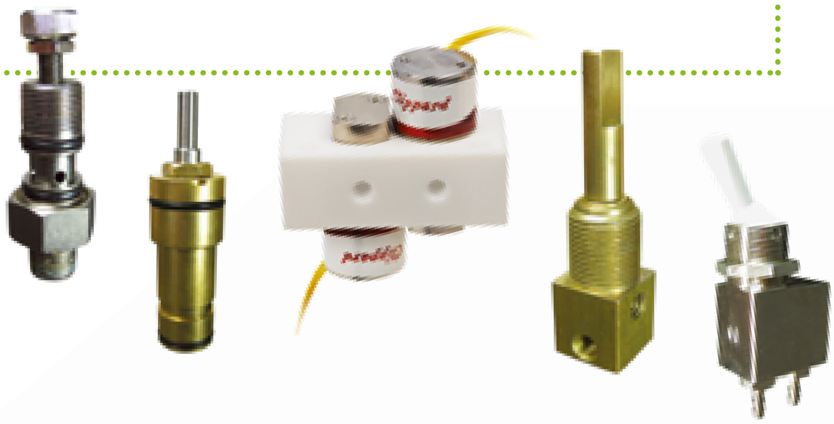
Every great solution starts with a specific challenge. Our Special Projects Process connects your engineers with our engineers to ensure your application requirements are understood, your risks are minimized, and your solution is precision-engineered to spec.

With a proven six-step framework, custom doesn't have to mean complicated.

3 Initial Order Placed

Securing the Scope

A kickoff order locks in your project's scope. This may include a Specification Control Document (SCD), NRE fees, and/or prototypes to support development.



6 Production Release

Ready for Scale

With an approved prototype and signed-off SCD, we issue a final production quote. Orders are scheduled, tooling is finalized, and production begins—with first article inspections to ensure everything meets spec.

Custom Solutions

Customization Options

- Manifold materials
- Seal materials
- Flow & pressure ranges
- Voltage/power requirements
- Electrical connections & wire harness PCBs
- Ports/connectors
- Mounting configurations
- Oxygen clean services
- Pressure decay & helium leak testing
- Easy-to-install compact assemblies
- Assembly of other components—including customer-specified products, fittings, connectors, labeling, etc.

Capabilities

- Expert in-house machining
- Vast network of outside vendors
- High capacity production & assembly
- Oxygen & analytical cleaning
- Pneumatic assemblies & sub systems
- Custom manifold designs
- Manifold manufacturing & assemblies
- Pneumatic circuit design
- IPC-A-620 certified ISO quality systems
- Fitting & tubing harness assemblies
- Component kitting
- Specialized testing
- KanBan services
- Private labeling

Capabilities & Testing

Advanced Capabilities

Advanced Manufacturing Capabilities

- 2 ISO 9001:2015 certified facilities in Ohio.
- Equipped with state-of-the-art machines:
  - 12-axis CNC Swiss machines
  - CNC milling & turning centers
  - Multi-spindle machines
  - CNC wire EDM technology
  - Thermal deburring & post-finishing processes
- Ensures tight tolerances and highest quality.

In-House Tool & Die Department

- All tooling & dies created in-house.
- Eliminates outsourcing: shorter production timelines & reduced costs.

Thermal Deburring

- Special thermal deburring process removes burrs, flashings, and contaminants.
- Controlled combustion dissolves small burrs and improves component performance.

Custom Laser Marking

- Laser etching & engraving on various materials.
- Ideal for branding or component labeling.

Anodizing & Electroless Nickel Plating

- Aluminum: anodized for corrosion & abrasion resistance.
- Brass: electroless nickel plated to improve friction & corrosion resistance.

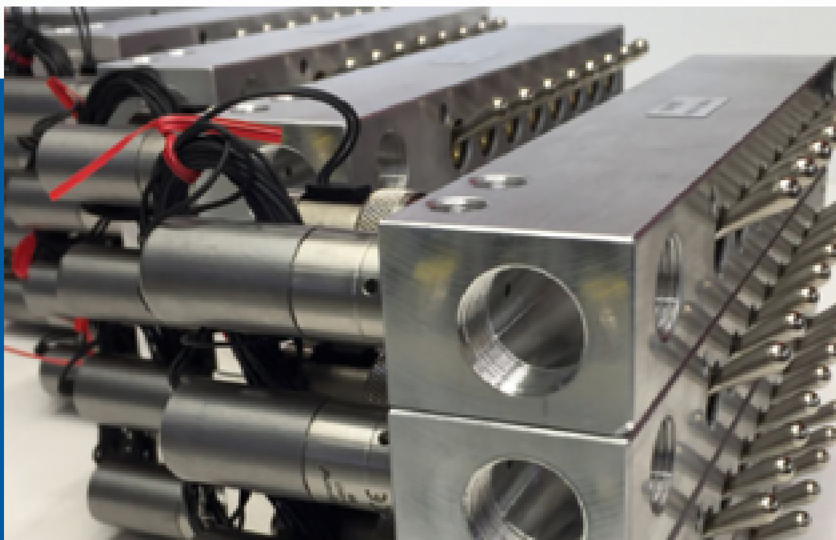
Application Engineering

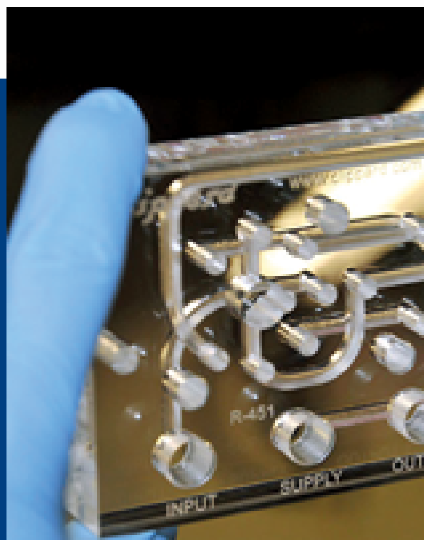
- Engineers work closely with manufacturing to optimize design for manufacturability.
- Ensures efficient production and lower costs.

Variety of Materials

Experienced with a wide range of materials:

- Acrylic
- Aluminum
- Brass
- Delrin®
- PEEK
- PTFE
- Stainless Steel
- Ultem®





Advanced Testing

100% Tested

- Every Clippard valve and sub-assembly is 100% tested before shipment.
- We perform standard and custom testing tailored to your application's specific needs.

Advanced Leak Testing Capabilities

- Low-leak valves are essential for precision applications such as:
  - Leak decay testing equipment
  - Chemical analysis systems
  - Flammable gas control
  - Vacuum environments
- Clippard uses pressure decay and helium leak detection to guarantee tightness and reliability.

Production Engineering

- Focused on continuous improvement through new technologies.
- In-house design of custom fixtures and automation tools.
- Results: lower costs, faster production, and optimized lead times—especially for custom solutions.

State-of-the-Art Clean Room Facilities

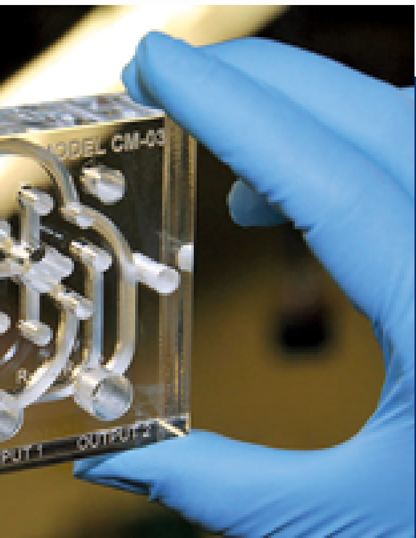
- Dedicated clean rooms for assembly, inspection, and testing.
- Designed for pharma and biotech requirements:
  - Positive-pressure HEPA filtration
  - Airlock isolation enclosures
  - Vacuum cleaning systems
  - Strict cleaning & gowning protocols
- Meets ISO 8 (14644-1) / Class 100,000 (FS 209) standards.

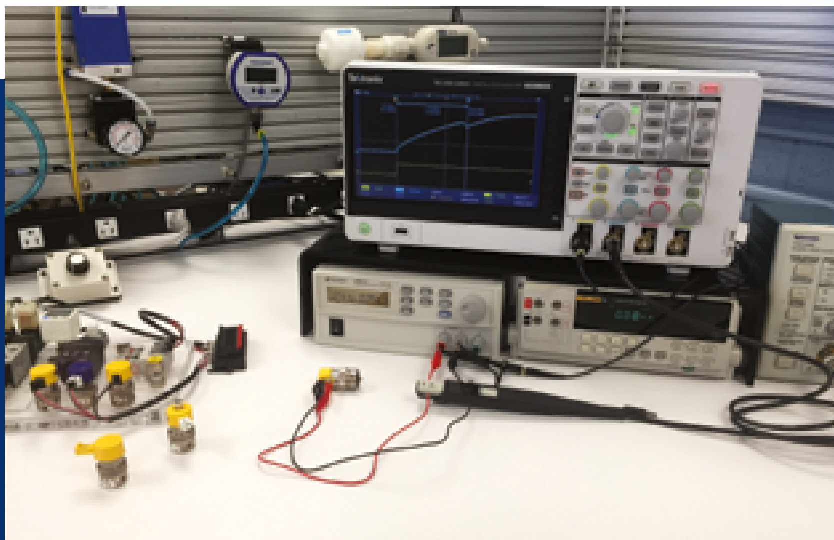
High Tech Gauge Labs

- Equipped with ScienScope VisionWare & Oasis computerized comparators.
- Provides precise, rapid inspections and immediate feedback.
- Ensures every component meets critical specifications.

Rigorous Quality Control

- Family-owned, with a deep commitment to excellence.
- Industry benchmark returns of: 3.4% PPM (Parts Per Million) = world-class
- Clippard performance: 0.465% PPM—a fraction of that standard.
- Consistent focus on zero-defect manufacturing and customer satisfaction.





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