

# Clippard

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## Pinch & Isolation Valves



# Isolation Valves



## NIV SERIES PTFE MEDIA ISOLATION VALVES

- *Ideal for use with corrosive media*
- *Low power consumption and fast response time*
- *Compact, lightweight design*
- *Minimal dead volume*
- *All wetted areas PTFE*

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## NIV SERIES PTFE MEDIA ISOLATION MIXING VALVES

- *2/2 Normally-Closed*
- *Ideal for gradient, mixing, and diverting applications*
- *Compatible with corrosive fluids*
- *Variety of multi-valve configurations*

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## NPV SERIES ELECTRONIC PINCH VALVES

- *Small, compact design*
- *Hygienic and easy to clean (replace tubes)*
- *Low power consumption*
- *High cycle life*
- *Able to handle whole blood and particulate matter*

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## NPP SERIES PNEUMATIC PINCH VALVES

- *Small, compact design*
- *Hygienic and easy to clean (replace tubes)*
- *Low power consumption*
- *High cycle life*
- *Able to handle whole blood and particulate matter*

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### PROBLEM

Many applications require the use of media that is not well suited for standard product materials. This application utilized a special media that was not only corrosive, but also exceptionally expensive. The customer sought a valve which could tolerate the media, but an emphasis was placed on minimizing volume as well in order to reduce the overall cost incurred with running the system.

### SOLUTION

One of the primary benefits of Clippard's NIV series media isolation valves is that all wetted areas of the valve are constructed of PTFE, making the valve ideal for use with corrosive media. The valve also features minimal dead volume, which was especially important to this customer who was interested in conserving as much media as possible.

Considering the customer's underlying goal, Clippard proposed an alternative solution which involved the design of a special integrated manifold. The unique new design reduced potential leak points by eliminating the need for extra fittings and reduced the overall volume of media. Off the shelf, Clippard's isolation valve met the needs of this application. However, the extra effort proved more than worthwhile.

### WHAT CAN CLIPPARD DO FOR YOU?

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# NIV SERIES MEDIA ISOLATION VALVES

## 2/2 & 3/2 N.O. & N.C. PTFE VALVES



<b>Valve Type</b>	2/2 Normally-Closed, 2/2 Normally-Open, 3/2 Selector/Diverter
<b>Medium</b>	Air, water, gas, or compatible fluids
<b>Max. Coil Temp. Rating</b>	70°C
<b>Operating Pressure</b>	Vacuum to 2 bar
<b>Flow</b>	10 to 60 l/min
<b>Max. Pressure Range</b>	710 mm Hg to 2 bar
<b>Power Consumption</b>	1.0 to 7.2 watts
<b>Response Time</b>	5 to 20 ms
<b>Electrical Connections</b>	450 mm wire leads
<b>Voltage</b>	12 or 24 VDC
<b>Ports</b>	#10-32, 1/4-28 UNF or 1/8 NPS
<b>Mounting</b>	#2-56, #4-40, or manifold mount
<b>Wetted Materials</b>	PTFE
<b>More Details</b>	<a href="http://clippard.com/link/niv">clippard.com/link/niv</a>

The Clippard NIV series media isolation valve is a solenoid-operated device that uses a flexible diaphragm to isolate the actuation mechanism from the fluid path. Media isolation valves are commonly used for a wide variety of applications, including those that require precise, repeatable dispensing of media for analytical instrumentation. All wetted areas of the valve are PTFE, making this series ideal for use with corrosive media.

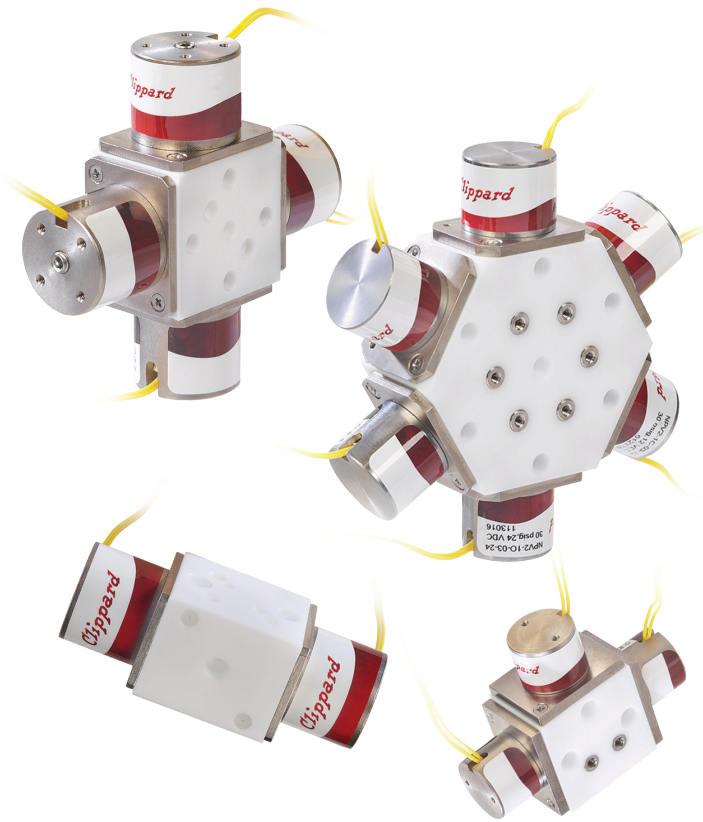
A unique feature of the NIV series is the one-piece valve stem that functions as a sealing membrane while also supporting and centralizing the poppet in the seating area. This multi-functional poppet/diaphragm/stem results in a simplified design with fewer parts, longer life, and minimal dead volume. Choose from four orifice sizes available as 2/2 Normally-Closed, 2/2 Normally-Open, or 3/2 Selector/Diverter. Special configurations available by request.

- Low power consumption
- Compact, lightweight design
- Bidirectional
- Minimal dead volume
- All wetted areas PTFE
- Ideal for use with corrosive media
- High cycle life
- Fast response time

Valve Type	Orifice Size	Ports	STANDARD STYLE		INTEGRATED MANIFOLD	
			12 VDC	24 VDC	12 VDC	24 VDC
2/2 Normally-Closed	1 mm	#10-32	NR1-2-12	NR1-2-24	NR1-2M-12	NR1-2M-24
	1,6 mm	1/4-28 UNF	NR2-2-12	NR2-2-24	NR2-2M-12	NR2-2M-24
	2,4 mm	1/4-28 UNF	NR3-2-12	NR3-2-24	NR3-2M-12	NR3-2M-24
	4 mm	1/8 NPS	NR4-2-12	NR4-2-24	NR4-2M-12	NR4-2M-24
2/2 Normally-Open	1 mm	#10-32	NR10-2-12	NR10-2-24	NR10-2M-12	NR10-2M-24
	1,6 mm	1/4-28 UNF	NR20-2-12	NR20-2-24	NR20-2M-12	NR20-2M-24
	2,4 mm	1/4-28 UNF	NR30-2-12	NR30-2-24	NR30-2M-12	NR30-2M-24
	4 mm	1/8 NPS	NR40-2-12	NR40-2-24	NR40-2M-12	NR40-2M-24
3/2 Selector/Diverter	1 mm	#10-32	NR1-3-12	NR1-3-24	NR1-3M-12	NR1-3M-24
	1,6 mm	1/4-28 UNF	NR2-3-12	NR2-3-24	NR2-3M-12	NR2-3M-24
	2,4 mm	1/4-28 UNF	NR3-3-12	NR3-3-24	NR3-3M-12	NR3-3M-24
	4 mm	1/8 NPS	NR4-3-12	NR4-3-24	NR4-3M-12	NR4-3M-24

# NIV SERIES GRADIENT MIXING VALVES

## 2/2 N.C. PTFE MIXING VALVES



NIV series mixing valves feature multiple solenoids 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.

These valves utilize a standard 2/2, Normally-Closed configuration. Standard options include four different orifice sizes, available in 12 or 24 VDC.

- Ideal for gradient, mixing, and diverting applications
- Compatible with corrosive fluids
- Variety of multi-valve configurations

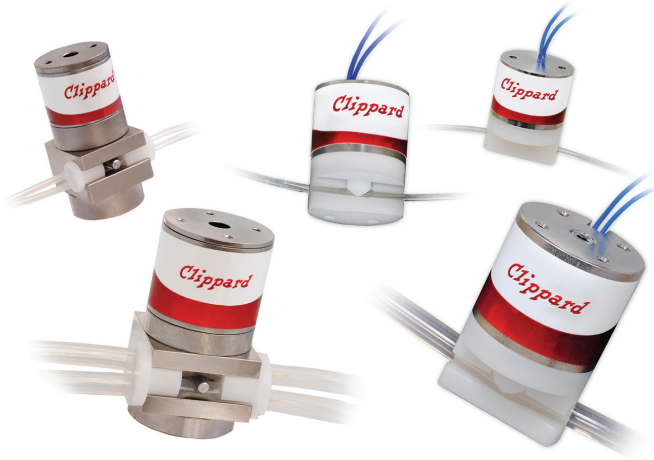
Valves	Orifice Size	Ports	12 VDC	24 VDC
2	1 mm	1/4-28 UNF	NR1-2-12-G2	NR1-2-24-G2
	1,6 mm	1/4-28 UNF	NR2-2-12-G2	NR2-2-24-G2
	2,4 mm	1/4-28 UNF	NR3-2-12-G2	NR3-2-24-G2
	4 mm	1/8 NPS	NR4-2-12-G2	NR4-2-24-G2
3	1 mm	1/4-28 UNF	NR1-2-12-G3	NR1-2-24-G3
	1,6 mm	1/4-28 UNF	NR2-2-12-G3	NR2-2-24-G3
	2,4 mm	1/4-28 UNF	NR3-2-12-G3	NR3-2-24-G3
	4 mm	1/8 NPS	NR4-2-12-G3	NR4-2-24-G3
4	1 mm	1/4-28 UNF	NR1-2-12-G4	NR1-2-24-G4
	1,6 mm	1/4-28 UNF	NR2-2-12-G4	NR2-2-24-G4
	2,4 mm	1/4-28 UNF	NR3-2-12-G4	NR3-2-24-G4
	4 mm	1/8 NPS	NR4-2-12-G4	NR4-2-24-G4
6	1 mm	1/4-28 UNF	NR1-2-12-G6	NR1-2-24-G6
	1,6 mm	1/4-28 UNF	NR2-2-12-G6	NR2-2-24-G6
	2,4 mm	1/4-28 UNF	NR3-2-12-G6	NR3-2-24-G6
	4 mm	1/8 NPS	NR4-2-12-G6	NR4-2-24-G6

<b>Valve Type</b>	2/2 Normally-Closed
<b>Medium</b>	Air, water, gas, or compatible fluids
<b>Max. Coil Temp. Rating</b>	70°C
<b>Operating Pressure</b>	Vacuum to 2 bar
<b>Flow</b>	10 to 60 l/min
<b>Max. Pressure Range</b>	710 mm Hg to 2 bar
<b>Power Consumption</b>	1.0 to 7.2 watts
<b>Response Time</b>	5 to 20 ms
<b>Electrical Connections</b>	450 mm wire leads
<b>Voltage</b>	12 or 24 VDC
<b>Ports</b>	1/4-28 UNF or 1/8 NPS
<b>Mounting</b>	#4-40, or through holes
<b>Wetted Materials</b>	PTFE
<b>More Details</b>	<a href="http://clippard.com/link/niv">clippard.com/link/niv</a>

Available with two, three, four, and six valves, these units provide a compact solution for applications requiring an inert wetted path for corrosive or aggressive liquids. Special configurations available by request.

# ELECTRONIC NPV SERIES PINCH VALVES

## 2/2 & 3/2 VALVES WITH DISPOSABLE TUBING



- Small, compact design
- Hygienic and easy to clean (replace tubes)
- Low power consumption
- High cycle life
- Can handle whole blood and particulate matter
- Unobstructed flow path
- Each valve comes with 300 mm of silicone tubing, pre-installed
- Choose from a large variety of easily replaceable tubing

All NPV Series pinch valves ship with 300 mm of high quality silicone tubing pre-installed. Standard options include medical/laboratory grade or FDA approved food grade silicone tubing. Custom valve configurations and additional tubing options are available (consult factory).

<b>Valve Type</b>	2/2 Normally-Open or Normally-Closed 3/2 (one tube N.O., one tube N.C.)
<b>Medium</b>	Air, water, gas, or compatible fluids
<b>Max. Pressure Range</b>	1,4 to 2 bar*
<b>Power Consumption</b>	1.0 to 7.2 watts
<b>Electrical Connections</b>	450 mm wire leads
<b>Voltage</b>	12 or 24 VDC
<b>Mounting</b>	#2-56, #4-40
<b>Wetted Materials</b>	Silicone tubing
<b>More Details</b>	<a href="http://clippard.com/link/npv">clippard.com/link/npv</a>

\*With standard medical/laboratory grade silicone tubing

The Clippard NPV series pinch valve is a solenoid-operated device that is designed to open and close tubes for controlling flow of liquids and gases. Other valve types have internal passages that may cause small amounts of fluid to remain in the valve. Pinch valves have no areas or dead volume where fluid can become trapped. Only the inside of the tubing contacts the fluid. Energizing the solenoid retracts or extends the plunger, which opens or closes the tube. De-energizing the solenoid will allow the plunger to return to its original state.

NPV Series pinch valves are available with one tube or two tubes. The single tube versions function as standard “on/off” 2/2 valves and are available in Normally-Open or Normally-Closed. The two tube versions feature one Normally-Open tube and one Normally-Closed tube, allowing them to function as 3/2 valves.

Tubing Type	Max. Pressure	Power	Model	1 Tube N.C.	1 Tube N.O.	2 Tubes	I.D.	O.D.	Wall
<b>Medical/ Laboratory Grade Silicone Tubing</b>	2 bar	1 W	NPV1	NPV1-1C-01-□	NPV1-1O-01-□	NPV1-2D-01-□	0.030"	0.065"	0.0175"
		1.5 W	NPV2	NPV2-1C-02-□	NPV2-1O-02-□	NPV2-2D-02-□	1/32"	3/32"	0.0313"
				NPV2-1C-03-□	NPV2-1O-03-□	NPV2-2D-03-□	1/16"	1/8"	0.0313"
	1,4 bar	4.2 W	NPV3	NPV3-1C-04-□	NPV3-1O-04-□	NPV3-2D-04-□	1/16"	3/16"	0.0625"
				NPV3-1C-05-□	NPV3-1O-05-□	NPV3-2D-05-□	1/8"	1/4"	0.0625"
		7.2 W	NPV4	NPV4-1C-06-□	NPV4-1O-06-□	NPV4-2D-06-□	3/16"	5/16"	0.0625"
NPV4-1C-07-□	NPV4-1O-07-□			—	1/4"	3/8"	0.0625"		
<b>Sanitary Food Grade Silicone Tubing</b>	1 bar	1.5 W	NPV2	NPV2-1C-23-□	NPV2-1O-23-□	NPV2-2D-23-□	1/16"	1/8"	0.0313"
		4.2 W	NPV3	NPV3-1C-25-□	NPV3-1O-25-□	NPV3-2D-25-□	1/8"	1/4"	0.0625"
	0,6 bar	7.2 W	NPV4	NPV4-1C-27-□	NPV4-1O-27-□	—	1/4"	3/8"	0.0625"

# PNEUMATIC NPP SERIES PINCH VALVES

## 2/2 MINIATURE VALVES WITH DISPOSABLE TUBING



Clippard’s NPP series miniature pneumatic pinch valves are air-piloted devices designed to open or close tubes for controlling flow of liquids and gases. Other valve types have internal passages that may cause small amounts of fluid to remain in the valve. Pinch valves have no areas of dead volume where fluid can become trapped. Only the inside of the tubing has contact with the fluid. The NPP series functions as a standard "on/off" 2/2 valve and is available in Normally-Open or Normally-Closed versions.

Pinch valves are especially well-suited for applications which benefit from a disposable flow path. Common industries that utilize pinch valves for isolating fluid from a mechanical valve include: drug dispensing, laboratory equipment, wastewater, medical devices, chemical, food and beverage equipment, ceramic/glass/plastic, and solids handling.

<b>Valve Type</b>	2/2, Normally-Open & Normally-Closed
<b>Medium</b>	Air, water, gas, or compatible fluids
<b>Max. Pilot Pressure</b>	17 bar
<b>Tubing Pressure</b>	See chart below
<b>Mounting</b>	#4-40
<b>Temperature Range</b>	0 to 110°C
<b>Wetted Materials</b>	Medical or food grade silicone, or polyurethane
<b>More Details</b>	<a href="http://clippard.com/link/npp">clippard.com/link/npp</a>

- Small, compact design
- Hygienic and easy to clean (replace tubes)
- Low power consumption
- High cycle life
- Can handle whole blood and particulate matter
- Unobstructed flow path
- Each valve comes with 300 mm of silicone tubing, pre-installed
- Choose from a large variety of easily replaceable tubing

All NPP Series pinch valves ship with 300 mm of high quality tubing pre-installed. Standard options include medical/laboratory grade or FDA approved food grade silicone tubing, or polyurethane tubing. Custom valve configurations and additional tubing options are available (consult factory).

Tubing Type	Tubing Max. Pressure	1 Tube N.C.	Min. to Open*	1 Tube N.O.	Min. to Close*	I.D.	O.D.	Wall
<b>Medical/ Laboratory Grade Silicone Tubing</b>	2 bar	NPP2-1C-03	2 bar	NPP2-1O-01	1 bar	1/16"	1/8"	0.0313"
		NPP2-1C-04		NPP2-1O-02	2,8 bar	1/16"	3/16"	0.0625"
	1,4 bar	NPP4-1C-05	1,4 bar	NPP3-1O-05	0,7 bar	1/8"	1/4"	0.0625"
		NPP4-1C-06		NPP4-1O-06		3/16"	5/16"	0.0625"
		NPP4-1C-07		NPP4-1O-07		1/4"	3/8"	0.0625"
<b>Polyurethane Tubing</b>	7 bar	NPP2-1C-13	4,5 bar	NPP2-1O-13	3,5 bar	1/16"	1/8"	0.0313"
		NPP2-1C-15		NPP4-1O-15	3 bar	1/32"	3/32"	0.0313"
<b>Sanitary Food Grade Silicone Tubing</b>	1 bar	NPP2-1C-23	2 bar	NPP2-1O-23	1 bar	1/16"	1/8"	0.0313"
		NPP3-1C-25	1,4 bar	NPP4-1O-25		1/8"	1/4"	0.0625"
	0,6 bar	NPP4-1C-27			NPP4-1O-27	0,7 bar	1/4"	3/8"

\*With max. pressure in tubing.

# *Clippard*

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