Air Pilot Valves

LOW PRESSURE AIR PILOT VALVES
- N.O. or N.C. air pilot valves
- Amplifier valves
- Bleed pressure piloted limit valves
- Electronically piloted valves

pp. 96-97

BRASS AIR PILOT VALVES
- PAV/PAVO Series
- Normally-Open or Normally-Closed
- 2-Way and 3-Way configurations

p. 98

MAXIMATIC® AIR PILOT VALVES
- Spool type valves with single or double air pilots
- Maximum flow, maximum value
- 3-Way and 4-Way configurations

pp. 99-101
PROBLEM

Sometimes, it’s all about the timing. In this case, a retrofit to an old machine was needed—fast! The OEM sought a partner who could help modify an existing design and meet a tight deadline.

SOLUTION

In these types of situations, the Clippard modular valve works wonders. These valves mount and link together with a special piping system which eases assembly and plumbing, provides reduced labor costs, minimizes errors in installation, and eliminates potential leak points. Clippard modular valves have been uniquely designed to enable multiple valve elements to be contained within a single valve body. This provides incredible flexibility and variety, allowing Clippard modular valves to accomplish a myriad of control challenges.

In this case, Clippard modular valves were specially configured to meet the requirements of this particular application and mounted on a special acrylic subplate, thereby greatly simplifying redundant circuitry. The OEM’s new circuit improved the performance and maintenance of their system and shipped in time to meet their deadline.

WHAT CAN CLIPPARD DO FOR YOU?

877-245-6247

MODULAR VALVES

- Available in an unlimited variety of directional, low pressure, and special control valves
- The supreme “plug-and-play” devices for pneumatic applications

pp. 102-113
LOW PRESSURE AIR PILOT VALVES

3-WAY N.C. AMPLIFIER VALVES

Amplifies very low pressure air-jet sensing signals to working power levels

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Normally-Closed Interface, 1/8&quot; NPT</td>
</tr>
<tr>
<td>2010-050</td>
<td>Flat Mounting Bracket</td>
</tr>
</tbody>
</table>

Medium: Air  
Material: Anodized aluminum body, nitrile diaphragms  
Input Pressure: 30 to 100 psig  
Air Flow: 620 l/min @ 100 psig  
Pilot Pressure: 4" H_2O @ 100 psig  
Max. Pilot Pressure: 5 psig  
Filtration: 10 micron  
Response Time: 10 ms dead headed  
Operating Speed: 50 Hz  
Bleed: 2.8 l/min @ 100 psig  
Ports: Load, Supply & Exhaust: 1/8" NPT female  
Control: #10-32 female

3-WAY BLEED PRESSURE PILOTED LIMIT VALVES

Blocking of the sensing port causes rapid valve opening

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Piloted Limit Valve, 1/8&quot; NPT</td>
</tr>
<tr>
<td>2011-012</td>
<td>Replacement #10-32 rubber nozzles</td>
</tr>
<tr>
<td>2010-050</td>
<td>Flat Mounting Bracket</td>
</tr>
</tbody>
</table>

Medium: Air  
Material: Anodized aluminum body, nitrile diaphragms  
Input Pressure: 30 to 100 psig max.  
Air Flow: 620 l/min @ 100 psig  
Pilot Pressure: 20 psig min. or N.O. 90% of Supply, N.C. 60% of Supply (whichever is greater)  
Bleed: 2.8 l/min @ 100 psig  
Response Time: 15 ms  
Ports: 1/8" NPT

3-WAY N.O. OR N.C. AIR PILOT VALVES

Blocking of the sensing port causes rapid valve opening

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Piloted Valve, 1/8&quot; NPT</td>
</tr>
</tbody>
</table>
| 2012-VAC | Valve for Vacuum Operation  
Requires positive pressure pilot signal |
| 2012-G   | Valve for Liquid Adhesives  
Silicone diaphragm and seals, 1/8" NPT |
| 2010-050 | Flat Mounting Bracket                      |

Medium: Air  
Material: Anodized aluminum body, nitrile diaphragms  
Input Pressure: 1 to 100 psig max.  
Air Flow: 620 l/min @ 100 psig  
Pilot Pressure: 20 psig min. or N.O. 90% of Supply, N.C. 60% of Supply (whichever is greater)  
Response Time: 15 ms after pilot pressure reaches switch point  
Operating Speed: 1,100 CPM
LOW PRESSURE AIR PILOT VALVES

3-WAY N.O. OR N.C. ELECTRONICALLY PILOTED VALVES

Low-power DC solenoid can be directly converted to high pressure pneumatic power without electronic amplification.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>2013-6</td>
<td>Valve, 6 VDC, 1/8&quot; NPT</td>
</tr>
<tr>
<td>2013-12</td>
<td>Valve, 12 VDC, 1/8&quot; NPT</td>
</tr>
<tr>
<td>2013-24</td>
<td>Valve, 24 VDC, 1/8&quot; NPT</td>
</tr>
<tr>
<td>2010-050</td>
<td>Flat Mounting Bracket</td>
</tr>
</tbody>
</table>

Medium: Air
Material: Anodized aluminum body, nitrile diaphragms
Input Pressure: 30 to 100 psig max.
Air Flow: 620 l/min @ 100 psig
Bleed: 2.8 l/min @ 100 psig
Filtration: 10 micron
Frequency Response: 50 Hz @ 100 psig; 70 Hz @ 30 psig
Switching Speed: 10 ms
Leads: 28 gauge stranded PVC insulated
Continuous Overload: 350% @ 25°C; 250% @ 50°C (ambient)
Power Consumption: < 0.50 W at rated voltage
80 ma. @ 6V, 40 ma. @ 12V, 20 ma. @ 24V

PRESSURE PILOTED SNAP ACTION AMPLIFYING VALVE

Provides a sharp, clean output signal, even with slow-changing pressure input signals; output is stabilized without chatter or oscillation.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3200-A</td>
<td>Amplifying Valve, #10-32</td>
</tr>
<tr>
<td>3200-006</td>
<td>Mounting Bracket</td>
</tr>
</tbody>
</table>

Medium: Air
Input Pressure: 3 to 100 psig max.
Min. Pilot Pressure: 1.5" H2O
Max. Pilot Pressure: 1 psig (28" H2O)
Air Flow: 5.1 l/min @ 100 psig
Bleed Orifice: 0.010" diameter

3-WAY N.C. PRESSURE PILOTED VALVES

Designed to be piloted by a Clippard EV or ET manifold mount electronic valve. Output from the EV/ET actuates the valve to produce outputs up to 620 l/min at 100 psig. Combines low wattage, long life and cool running of the EV/ET valves with quick response and high flow of Clippard booster type valves.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>Piloted Valve, External Port</td>
</tr>
<tr>
<td>2021</td>
<td>Piloted Valve, Internal Port</td>
</tr>
<tr>
<td>2010-050</td>
<td>Flat Mounting Bracket</td>
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</tbody>
</table>

Medium: Air
Input Pressure: 30 to 100 psig max.
Air Flow: 620 l/min @ 100 psig
Pilot Pressure: 60% of supply pressure, minimum
Response Time: Approx. 20 milliseconds
Mounting: Mounting holes provided
Materials: Anodized aluminum, stainless steel

The 2020 has an external #10-32 port for the pressure supply to the EV/ET electronic pilot valve. The 2021 has an internal pressure supply to the EV/ET.
2-WAY & 3-WAY AIR PILOT VALVES
PAV/PAVO SERIES

These Normally-Open or Normally-Closed 2-Way and 3-Way valves incorporate an integral pilot actuator that provides a compact assembly and simple installation. The internal valving is identical to the MAV-2/3 or MAVO-2/3.

<table>
<thead>
<tr>
<th>Medium</th>
<th>Air, water, or oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Pressure</td>
<td>PAV-2/3: 300 psig</td>
</tr>
<tr>
<td></td>
<td>PAVO-2/3: 150 psig max.</td>
</tr>
<tr>
<td>Air Pilot Pressure</td>
<td>15 psig min.</td>
</tr>
<tr>
<td>Air Flow</td>
<td>PAV-2/3: 113 l/min @ 50 psig; 190 l/min @ 100 psig</td>
</tr>
<tr>
<td></td>
<td>PAVO-2/3: 190 l/min @ 50 psig; 330 l/min @ 100 psig</td>
</tr>
<tr>
<td>Mounting</td>
<td>5/8-32 thread or #4 screw</td>
</tr>
<tr>
<td>Materials</td>
<td>Brass body, nitrile seals, stainless steel stem and spring</td>
</tr>
<tr>
<td>Accessories</td>
<td>Foot Bracket: FB-1791</td>
</tr>
<tr>
<td></td>
<td>Nut and Lockwasher: PAV-MH</td>
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</tbody>
</table>

Air pilot valves are ideal for remote and miniature applications which require higher air flow and/or lower power.

NORMALLY-CLOSED POPPET VALVES

<table>
<thead>
<tr>
<th>Port(s)</th>
<th>2-Way</th>
<th>3-Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>#10-32</td>
<td>PAV-2</td>
<td>PAV-3</td>
</tr>
<tr>
<td>1/8” NPT</td>
<td>PAV-2P</td>
<td>PAV-3P</td>
</tr>
</tbody>
</table>

NORMALLY-OPEN SPOOL VALVES

<table>
<thead>
<tr>
<th>Port(s)</th>
<th>2-Way</th>
<th>3-Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>#10-32</td>
<td>PAVO-2</td>
<td>PAVO-3</td>
</tr>
<tr>
<td>1/8” NPT</td>
<td>PAVO-2P</td>
<td>PAVO-3P</td>
</tr>
</tbody>
</table>

PAV-2 shown

PAV-2P shown

mounting holes for #4 screw

exhaust

(3-way only)

5/8-32 thd.

#10-32 (outlet 2)

#10-32 (inlet 1)

1.406

0.437

0.594

0.375

1.656

0.125

5/8” sq.

Pilot

1/8” NPT

PAV-2P shown

exhaust

(3-way only)

5/8-32 thd.

#10-32 (outlet 2)

#10-32 (inlet 1)

1.406

0.437

0.594

0.375

1.812

0.125

5/8 sq.
## MAXIMATIC® SERIES AIR PILOT VALVES

### ORDERING GUIDE

#### 3-WAY VALVES

<table>
<thead>
<tr>
<th>Series No.</th>
<th>Inlet</th>
<th>Outlet</th>
<th>Exhaust</th>
<th>Ports/Position</th>
<th>Cv</th>
<th>Flow @ 100 psig</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMA-31NAS</td>
<td>#10-32</td>
<td>#10-32</td>
<td>#10-32</td>
<td>3/2</td>
<td>0.58</td>
<td>760 l/min</td>
<td>100</td>
</tr>
<tr>
<td>MMA-31PAS</td>
<td>1/8&quot; NPT</td>
<td>1/8&quot; NPT</td>
<td>1/8&quot; NPT</td>
<td>3/2</td>
<td>0.67</td>
<td>880 l/min</td>
<td>100</td>
</tr>
<tr>
<td>MMA-32QAS</td>
<td>1/4&quot; NPT</td>
<td>1/4&quot; NPT</td>
<td>1/4&quot; NPT</td>
<td>3/2</td>
<td>0.89</td>
<td>1,400 l/min</td>
<td>100</td>
</tr>
<tr>
<td>MMA-33WAS</td>
<td>3/8&quot; NPT</td>
<td>3/8&quot; NPT</td>
<td>1/4&quot; NPT</td>
<td>3/2</td>
<td>1.68</td>
<td>2,600 l/min</td>
<td>100</td>
</tr>
<tr>
<td>MMA-34ZAS</td>
<td>1/2&quot; NPT</td>
<td>1/2&quot; NPT</td>
<td>1/2&quot; NPT</td>
<td>3/2</td>
<td>2.79</td>
<td>4,800 l/min</td>
<td>100</td>
</tr>
<tr>
<td>MMA-31NAA</td>
<td>#10-32</td>
<td>#10-32</td>
<td>#10-32</td>
<td>3/2</td>
<td>0.58</td>
<td>760 l/min</td>
<td>100</td>
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<td>MMA-31PAA</td>
<td>1/8&quot; NPT</td>
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<td>0.67</td>
<td>880 l/min</td>
<td>100</td>
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<tr>
<td>MMA-32QAA</td>
<td>1/4&quot; NPT</td>
<td>1/4&quot; NPT</td>
<td>1/8&quot; NPT</td>
<td>3/2</td>
<td>0.89</td>
<td>1,400 l/min</td>
<td>100</td>
</tr>
<tr>
<td>MMA-33WAA</td>
<td>3/8&quot; NPT</td>
<td>3/8&quot; NPT</td>
<td>1/4&quot; NPT</td>
<td>3/2</td>
<td>1.68</td>
<td>2,600 l/min</td>
<td>100</td>
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<tr>
<td>MMA-34ZAA</td>
<td>1/2&quot; NPT</td>
<td>1/2&quot; NPT</td>
<td>1/2&quot; NPT</td>
<td>3/2</td>
<td>2.79</td>
<td>4,800 l/min</td>
<td>100</td>
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</tbody>
</table>

#### 4-WAY VALVES

<table>
<thead>
<tr>
<th>Series No.</th>
<th>Inlet</th>
<th>Outlet</th>
<th>Exhaust</th>
<th>Ports/Position</th>
<th>Cv</th>
<th>Flow @ 100 psig</th>
<th>Spool Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMA-41NAS</td>
<td>#10-32</td>
<td>#10-32</td>
<td>#10-32</td>
<td>5/2</td>
<td>0.58</td>
<td>760 l/min</td>
<td>Closed Center</td>
</tr>
<tr>
<td>MMA-41PAS</td>
<td>1/8&quot; NPT</td>
<td>1/8&quot; NPT</td>
<td>1/8&quot; NPT</td>
<td>5/2</td>
<td>0.67</td>
<td>880 l/min</td>
<td>Exhaust Center</td>
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<tr>
<td>MMA-42QAS</td>
<td>1/4&quot; NPT</td>
<td>1/4&quot; NPT</td>
<td>1/8&quot; NPT</td>
<td>5/2</td>
<td>0.89</td>
<td>1,400 l/min</td>
<td>Pressure Center</td>
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<td>1/4&quot; NPT</td>
<td>5/2</td>
<td>1.68</td>
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<td>#10-32</td>
<td>#10-32</td>
<td>5/2</td>
<td>0.58</td>
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<tr>
<td>MMA-41PAA</td>
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<td>1/4&quot; NPT</td>
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<td>5/2</td>
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<td>1/4&quot; NPT</td>
<td>5/2</td>
<td>1.68</td>
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<td>#10-32</td>
<td>#10-32</td>
<td>5/3</td>
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<td>1/8&quot; NPT</td>
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<td>1/8&quot; NPT</td>
<td>5/3</td>
<td>0.89</td>
<td>1,400 l/min</td>
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<td>1/4&quot; NPT</td>
<td>5/3</td>
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<td>1/8&quot; NPT</td>
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<td>5/3</td>
<td>0.89</td>
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<td>5/3</td>
<td>1.00</td>
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<td>1/2&quot; NPT</td>
<td>1/2&quot; NPT</td>
<td>5/3</td>
<td>1.68</td>
<td>2,600 l/min</td>
<td>•</td>
</tr>
</tbody>
</table>

Maximatic® is a registered trademark of Clippard Instrument Laboratory, Inc.
MAXIMATIC® SERIES AIR PILOT VALVES

3-WAY & 4-WAY VALVES

Maximatic 3-Way and 4-Way air pilot valves are either double pilot or single pilot, spring return in #10-32 thread to 1/2” NPT port sizes. These air pilot valves have 1/8” NPT pilot ports.

**30 on MMA-41 Series

MINIMUM PILOT PRESSURE

<table>
<thead>
<tr>
<th>Operating Pressure (psig)</th>
<th>Single Pilot</th>
<th>Double Pilot</th>
<th>3-Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Pressure (psig)</td>
<td>20</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>20**</td>
<td>20**</td>
<td></td>
</tr>
</tbody>
</table>

2-POSITION 3-WAY SPRING RETURN & AIR PILOT VALVES

<table>
<thead>
<tr>
<th>Spring Return Valves</th>
<th>Double Air Pilot Valves</th>
<th>Inlet</th>
<th>Outlet</th>
<th>Exhaust</th>
<th>l/min*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMA-31NAS</td>
<td>MMA-31NAA</td>
<td>#10-32</td>
<td>#10-32</td>
<td>#10-32</td>
<td>760</td>
</tr>
<tr>
<td>MMA-31PAS</td>
<td>MMA-31PAA</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>880</td>
</tr>
<tr>
<td>MMA-32QAS</td>
<td>MMA-32QAA</td>
<td>1/4” NPT</td>
<td>1/4” NPT</td>
<td>1/4” NPT</td>
<td>1,400</td>
</tr>
<tr>
<td>MMA-33WAS</td>
<td>MMA-33WAA</td>
<td>3/8” NPT</td>
<td>3/8” NPT</td>
<td>3/8” NPT</td>
<td>2,600</td>
</tr>
<tr>
<td>MMA-34ZAS</td>
<td>MMA-34ZAA</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>4,800</td>
</tr>
</tbody>
</table>

2-POSITION 4-WAY SPRING RETURN & AIR PILOT VALVES

<table>
<thead>
<tr>
<th>Spring Return Valves</th>
<th>Double Air Pilot Valves</th>
<th>Inlet</th>
<th>Outlet</th>
<th>Exhaust</th>
<th>l/min*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMA-41NAS</td>
<td>MMA-41NAA</td>
<td>#10-32</td>
<td>#10-32</td>
<td>#10-32</td>
<td>760</td>
</tr>
<tr>
<td>MMA-41PAS</td>
<td>MMA-41PAA</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>880</td>
</tr>
<tr>
<td>MMA-42QAS</td>
<td>MMA-42QAA</td>
<td>1/4” NPT</td>
<td>1/4” NPT</td>
<td>1/4” NPT</td>
<td>1,400</td>
</tr>
<tr>
<td>MMA-43WAS</td>
<td>MMA-43WAA</td>
<td>3/8” NPT</td>
<td>3/8” NPT</td>
<td>3/8” NPT</td>
<td>2,600</td>
</tr>
<tr>
<td>MMA-44ZAS</td>
<td>MMA-44ZAA</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>4,800</td>
</tr>
</tbody>
</table>

3-POSITION 4-WAY SPRING CENTERED DOUBLE AIR PILOT VALVES

Closed Center, Pressure Center & Exhaust Center

<table>
<thead>
<tr>
<th>Closed Center</th>
<th>Pressure Center</th>
<th>Exhaust Center</th>
<th>Inlet</th>
<th>Outlet</th>
<th>Exhaust</th>
<th>l/min*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMA-41NAAC</td>
<td>MMA-41NAAP</td>
<td>MMA-41NAAE</td>
<td>#10-32</td>
<td>#10-32</td>
<td>#10-32</td>
<td>650</td>
</tr>
<tr>
<td>MMA-41PAAC</td>
<td>MMA-41PAAP</td>
<td>MMA-41PAAE</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>650</td>
</tr>
<tr>
<td>MMA-42QAC</td>
<td>MMA-42QAAP</td>
<td>MMA-42QAAE</td>
<td>1/4” NPT</td>
<td>1/4” NPT</td>
<td>1/4” NPT</td>
<td>1,400</td>
</tr>
<tr>
<td>MMA-43WAC</td>
<td>MMA-43WAAAP</td>
<td>MMA-43WAAE</td>
<td>3/8” NPT</td>
<td>3/8” NPT</td>
<td>3/8” NPT</td>
<td>2,000</td>
</tr>
<tr>
<td>MMA-44ZAC</td>
<td>MMA-44ZAAP</td>
<td>MMA-44ZAAE</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>2,600</td>
</tr>
</tbody>
</table>

Conforms to ISO 19973-2 test standards

*Based on flow @ 100 psig

Air Pilot Valves
Parallel circuit manifold bars are available for all sizes of MMA 3- and 4-Way valves. Manifolds are made in increments of two stations from two to 16, and are supplied with mounting screws and gaskets. Spare kits are also available which include two screws and a gasket. Blank plate supplied with one gasket, two screws and metal plate.

### 3-Way Valve Manifolds

<table>
<thead>
<tr>
<th>Valve Series</th>
<th>Manifold Inlet/Exhaust</th>
<th>Blank Plate</th>
<th>2-Station</th>
<th>4-Station</th>
<th>6-Station</th>
<th>8-Station</th>
<th>16-Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMA-31</td>
<td>1/8&quot;</td>
<td>MMM-31-B</td>
<td>MMM-31-02</td>
<td>MMM-31-04</td>
<td>MMM-31-06</td>
<td>MMM-31-08</td>
<td>MMM-31-16</td>
</tr>
<tr>
<td>MMA-33</td>
<td>3/8&quot;</td>
<td>MMM-33-B</td>
<td>MMM-33-02</td>
<td>MMM-33-04</td>
<td>MMM-33-06</td>
<td>MMM-33-08</td>
<td>MMM-33-16</td>
</tr>
<tr>
<td>MMA-34</td>
<td>1/2&quot;</td>
<td>MMM-34-B</td>
<td>MMM-34-02</td>
<td>MMM-34-04</td>
<td>MMM-34-06</td>
<td>MMM-34-08</td>
<td>MMM-34-16</td>
</tr>
</tbody>
</table>

### 3-Way Spare Mounting Kit Hardware

- 27041-31: Hardware Kit for MMA-31 Series Valves
- 27041-32: Hardware Kit for MMA-32 Series Valves
- 27041-33: Hardware Kit for MMA-33 Series Valves
- 27041-34: Hardware Kit for MMA-34 Series Valves

### 4-Way Valve Manifolds

<table>
<thead>
<tr>
<th>Valve Series</th>
<th>Manifold Inlet/Exhaust</th>
<th>Blank Plate</th>
<th>2-Station</th>
<th>4-Station</th>
<th>6-Station</th>
<th>8-Station</th>
<th>16-Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMA-41</td>
<td>1/8&quot;</td>
<td>MMM-41-B</td>
<td>MMM-41-02</td>
<td>MMM-41-04</td>
<td>MMM-41-06</td>
<td>MMM-41-08</td>
<td>MMM-41-16</td>
</tr>
<tr>
<td>MMA-43</td>
<td>3/8&quot;</td>
<td>MMM-43-B</td>
<td>MMM-43-02</td>
<td>MMM-43-04</td>
<td>MMM-43-06</td>
<td>MMM-43-08</td>
<td>MMM-43-16</td>
</tr>
<tr>
<td>MMA-44</td>
<td>1/2&quot;</td>
<td>MMM-44-B</td>
<td>MMM-44-02</td>
<td>MMM-44-04</td>
<td>MMM-44-06</td>
<td>MMM-44-08</td>
<td>MMM-44-16</td>
</tr>
</tbody>
</table>

### 4-Way Spare Mounting Kit Hardware

- 27041-41: Hardware Kit for MMA-41 Series Valves
- 27041-42: Hardware Kit for MMA-42 Series Valves
- 27041-43: Hardware Kit for MMA-43 Series Valves
- 27041-44: Hardware Kit for MMA-44 Series Valves
MODULAR VALVES

OVERVIEW

Modular valves provide a great deal of versatility with just a few simple components. They consist of essentially three base valve types combined with 18 different options for actuation. As you will see in the proceeding pages, this results in a huge variety of valve options.

BASE VALVE TYPES

1. Can be used as:
   - 2-Way N.C. or N.O.
   - 3-Way N.C. or N.O.
   - 3-Way Diverter or Selector

2. Can be used as:
   - 4-Way fully ported
   - Dual 2-Way (N.O. and N.C.)
   - Dual 3-Way with common exhaust (N.O. and N.C.)

3. Can be used as:
   - 6-Way fully ported
   - Dual 2-Way N.C. or N.O.
   - Dual 3-Way N.C. or N.O.
   - Dual Selector

ACTUATION OPTIONS

- Spring Return
- Air Pilot
- Spring and Auxiliary Pilot
- Removable Spring and Auxiliary Pilot
- 2 Air Pilots "Or"
- Differential Air Pilots

- Solenoid Piloted
- Delay Out from Air Pilot
- Delay In from Air Pilot
- Low Pressure Air Pilot
- 3 Air Pilots "Or"
- 4 Air Pilots "Or"

- Independent Shuttle Valve and Air Pilot
- Shuttle Valve to Air Pilot
- Shuttle Valve to Low Pressure
- Delay to Air Pilot
- Bleed Pressure Pilot
- Fluidic Interface Pilot

Air Pilot Valves
Modular Valves

Versatility is the key when it comes to these supreme "plug-and-play" pneumatic valves. Available in an unlimited variety of directional, low pressure, and special control valves, each is encased in a body designed to mount and link together with a simple piping system.

Valves are constructed of brass, nickel plated brass, stainless steel, and acetal copolymer
Exclusive micro-gap construction for full air flow, no blow by, long life and fast response
Eight air passages extend longitudinally through the body surrounding the valve cavity
Milled slots in valve cavity connect the valve through longitudinal passages to octoport outlets
Manifold body is molded of high density acetal copolymer which provides high dimensional stability and outstanding impact resistance as well as excellent moisture, ultraviolet, and temperature characteristics
Nickel plated internal parts reduce breakaway friction
Visual indicator shows valve position
All valves are fully-ported for maximum versatility

Clippard modular valves can easily be configured to perfectly meet the needs of a wide variety of applications. Call 1-877-245-6247 today to discuss your requirements.

OCTOPORT CODING

The coding method shown here is frequently used to identify port usage for different variations of Clippard modular valves. Letters are used to identify the supply or signal (S), the output (O), the exhaust (E), and the pilot input (P).

Many modular valves have multiple ported supplies, outputs, or exhausts. If duplicate ports are indicated, one may be marked with an X to indicate that it needs to be plugged. Both/either of the duplicate ports may be used, but unused duplicate ports must be plugged.

- Air pilot pneumatic valves for air, oil, or water
- Fast response and long life
- Balanced spool design
- Keyed manifold mounting
- Over 70 configurations available
- 0 to 150 psig working pressure
- 250 l/min @ 100 psig flow

For more information, visit clippard.com/link/modular
**MODULAR VALVES**

**PNEUMATIC CIRCUIT MODULES**

Clippard modular valves are available in an unlimited variety of directional, flow, pressure and special control valves, each in a valve body designed to mount and link together with a simple piping system. This system eases assembly and plumbing, resulting in reduced labor costs, fewer errors in installation, and less potential for plumbing leakage. Multiple valve elements can be contained in a single body, providing incredible flexibility and variety to accomplish a myriad of control challenges. Minimatic® modular valves are the supreme “plug-and-play” devices for pneumatic applications.

**Versatility** is the key when it comes to Clippard modular valves

---

**MOST POPULAR STANDARD CIRCUIT MODELS**

- **VA-03** Binary Redirect Module (“Flip-Flop Circuit”)
- **VA-011** Oscillator Module or Auto-Cycling of a Single-Acting Cylinder
- **VA-08** Module for Single Input Clamp Control
- **VA-023** Two-Hand, No-Tie-Down (THNTD) Circuit
- **VA-034** Add-On Module Provides Back Pressure Latch Control
- **VA-038** Two-Hand, No-Tie-Down Circuit with Latching Control
- **VA-028** Auto-Cycling of Double-Acting Cylinder, 2 Valves
- **VA-06** Auto-Cycling of Double-Acting Cylinder, 3 Valves
- **VA-031** Back Pressure Sensing for Double-Acting Cylinder
- **VA-033** Back Pressure Sensing with a Double-Acting Cylinder Using External Power Valve

For more information, schematics and drawings, visit clippard.com/link/modular

---

**SPEEDY CIRCUIT ASSEMBLY**

*You can have a faster, more dependable way to produce multiples of the same pneumatic circuit!*

Clippard’s modular valve system enables speedy assembly while assuring accurate connections. By utilizing Clippard’s unique manufacturing process, these clear acrylic subplates provide sealed passageways between valves without the need for gaskets, clamps, or piping. **It’s the fastest, most efficient circuit system available!**
MODULAR VALVES

MOUNTING SUBPLATES & STRIPS

Acrylic subplates provide for up to three modular valves with various port options. Metallic plates mount to standard mounting strips.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Valves</th>
<th>Port(s)</th>
<th>Material</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-101</td>
<td>1</td>
<td>-</td>
<td>Metallic</td>
<td>1.625&quot;</td>
<td>2.500&quot;</td>
<td>0.375&quot;</td>
<td>#10-32</td>
</tr>
<tr>
<td>R-111</td>
<td>1</td>
<td>-</td>
<td>Metallic</td>
<td>1.734&quot;</td>
<td>1.734&quot;</td>
<td>0.437&quot;</td>
<td>#10-32</td>
</tr>
<tr>
<td>CM-04</td>
<td>1</td>
<td>#10-32</td>
<td>Acrylic</td>
<td>3.000&quot;</td>
<td>3.000&quot;</td>
<td>0.625&quot;</td>
<td>(2) 0.196&quot; dia.</td>
</tr>
<tr>
<td>CM-02</td>
<td>1</td>
<td>1/8&quot; NPT</td>
<td>Acrylic</td>
<td>3.500&quot;</td>
<td>3.000&quot;</td>
<td>0.625&quot;</td>
<td>(2) 0.196&quot; dia.</td>
</tr>
<tr>
<td>CM-036</td>
<td>2</td>
<td>1/8&quot; NPT</td>
<td>Acrylic</td>
<td>7.000&quot;</td>
<td>3.000&quot;</td>
<td>0.625&quot;</td>
<td>(4) 0.196&quot; dia.</td>
</tr>
<tr>
<td>CM-037</td>
<td>3</td>
<td>1/8&quot; NPT</td>
<td>Acrylic</td>
<td>10.75&quot;</td>
<td>3.000&quot;</td>
<td>0.625&quot;</td>
<td>(4) 0.196&quot; dia.</td>
</tr>
</tbody>
</table>

When metallic subplates are mounted to mounting strips, the components build into a strong, rigid assembly. Because of extra tolerance in the holes, note that strips may be adjusted before screws are fully tightened. This permits accurate alignment of subplates. The identifying number following the second dash in the part number indicates the number of modules the strip will accommodate while still proving a short extension with one hole at both ends for using in mounting the assembly to stand-offs or other structures. The strip will accommodate one additional module if no extensions for mounting are needed. (Every two holes will accept a subplate.)

MOUNTING STRIPS & STANDOFF DIMENSIONS

For providing space beneath assembled group of modules, use R-106 (order R-107-20, packet of four with hardware). Provides 2" clearance from enclosure wall for piping with Clippard fittings and tubing. Keeps piping and installation neat.

R-107-20

Adding Value is Our Business

Clippard’s Integrated Solutions team designed a simple, straight-forward approach for piloting process valves. This assembly greatly simplifies installation and ease-of-use for the OEM design engineer.

Clippard has a unique advantage by providing custom products and value-added assemblies based on the most successful miniature pneumatic line in the world.

877-245-6247 | clippard.com
MODULAR VALVES
STANDARD CIRCUIT MODELS

BINARY REDIRECT MODULE ("Flip-Flop" Circuit)

Input signal alternates outputs A and B, sometimes referred to as a push-on/push-off circuit. The circuit manifold combines the R-451 and R-412 in a binary redirect or flip-flop circuit. Use of the R-412 provides a “memory” function to return the output to known position (port 8 whenever air is first turned on to the circuit. This output pilots port 4 of the R-451, positioning it for the next signal. A signal input passes through the R-451, ports 1 to 2, and pilots port 4 of the R-412. The output of the R-412 shifts to port 2 and also pilots port 6 of the R-451. When the next signal input is received, it passes through the R-451, ports 1 to 8, and pilots port 6 of the R-412, shifting its output back to port 8.

OSCILLATOR / AUTO-CYCLING MODULE

The VA-011 module is designed to use an “on-off” toggle valve (or alternative input) for an oscillating output that can be used to actuate a single-acting cylinder. With no start input, the cylinder will remain in a retracted position. Turning on the start input signal causes each valve to shift upon the others output signal. The output “on time” can be adjusted for longer or shorter times, and the “off time” is also adjustable.
**MODULAR VALVES**

**STANDARD CIRCUIT MODELS**

**MODULE FOR SINGLE INPUT CLAMP CONTROL**

Uses a single input (from pneumatic foot pedal or button) to provide a simple and clean “open/close” clamp control with adjustable pressure and speed controls. “Auto-reset” feature ensures when supply is turned on, clamp will always go to the open position.

- Saves time and reduces cost and labor of piping
- Automates product tasks with easy-to-apply unit
- Provides binary push-button operation and built-in speed control
- Pressure regulation included
- May be operated remotely

Circuit includes one R-402 valve, one R-412 valve, one R-451 valve, one R-701 valve, one CM-08-PQ circuit manifold, one MNV-1KP valve, one pressure gauge, one noise muffler, fittings, and tubing.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA-08</td>
<td>Module Only</td>
</tr>
<tr>
<td>VA-08-FP</td>
<td>Module with Foot Pedal Actuator</td>
</tr>
<tr>
<td>VA-08-GN</td>
<td>Module with Green Palm Button</td>
</tr>
</tbody>
</table>

**Pressure Range**

40 to 150 psig

---

**AUTO-CYCLING OF A DOUBLE-ACTING CYLINDER**

Similar to the VA-06, this is a more compact version designed for automatic cycling of double-acting cylinders without the use of limit valves or a magnetic sensor. This circuit enables a double-acting cylinder to reciprocate without the use of limit valves and to control its speed in each direction. The two R-333 and R-453 valves also incorporate adjustable delay features that will control the time between retract and extend cycles.

Circuit includes one R-333 valve, one R-453 valve, one TV-3S valve, one CM-028-PQ circuit manifold, fitting adapter, fittings and tubing.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA-028</td>
<td>Auto-Cycling Module</td>
</tr>
</tbody>
</table>

**Pressure Range**

40 to 150 psig

---

**BACK-PRESSURE SENSING FOR DOUBLE-ACTING CYLINDER**

Very versatile for controlling a double-acting cylinder without limits. The circuit uses back pressure to send a signal when the cylinder finishes moving. This module is ideal for integrating into a larger circuit with electronic valves or all pneumatic components.

Circuit includes one R-333 valve, one R-453 valve, one TV-3S valve, one CM-028-PQ circuit manifold, fitting adapter, fittings, and tubing.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA-031</td>
<td>Back Pressure Sensing Module</td>
</tr>
</tbody>
</table>

**Pressure Range**

40 to 150 psig
MODULAR VALVES
STANDARD CIRCUIT MODELS

TWO-HAND, NO-TIE-DOWN (THNTD) CIRCUIT

This module is a self-contained circuit board with all interconnections required to provide a Two-Hand, No-Tie-Down (THNTD) pneumatic circuit. The main function of this control is to require a machine operator to use both hands at the same time to actuate the equipment, helping to ensure that the operator’s hands are not in a position to be injured by the machine as it is in motion.

LIMITED WARRANTY

When properly used, this equipment meets ANSI B11.1-1971 and OSHA 1910.217 safety standards for Two-Hand, No-Tie-Down controls. It is the buyer’s sole responsibility to determine proper application, location installation, use and maintenance of this equipment. This equipment performs the function of a Two-Hand, No-Tie-Down control only. All other prescribed safety devices must be used with this equipment. Seller shall not be responsible for any failure to so comply which results from the application, installation, location, operation, use or maintenance of this equipment or from alteration of the equipment by persons other than the seller, or from design or instruction furnished by the buyer or his agents.

Sellers liability shall be limited to replacement or modification of the equipment to comply with OSHA standards or to refund the purchase price. Seller will be responsible for any fines, penalties or consequential damage. Clippard makes no other warranty of any kind, expressed or implied.

Enables simple, rapid installation of a pneumatic Two-Hand, No-Tie-Down pneumatic circuit

For more information, visit clippard.com/link/thntd

Pressure Range
50 to 120 psig

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA-023</td>
<td>THNTD Circuit, No Palm Buttons</td>
</tr>
<tr>
<td>VA-023-GN</td>
<td>THNTD Circuit with 2 Green Palm Buttons</td>
</tr>
<tr>
<td>VA-023-RD</td>
<td>THNTD Circuit with 2 Red Palm Buttons</td>
</tr>
</tbody>
</table>

Circuit includes one R-315 valve, two R-401 valves, one CM-023-PQ circuit manifold, fittings, and tubing

RV-3 is held open by supply air that passes through RV-1, RV-2 and N-1. When RV-1 is actuated alone, the pilot air for RV-3 flows back through the N-1 and RV-2 to atmosphere at RV-1, and RV-3 is closed by the spring. When RV-2 is actuated alone, the same sequence occurs except the pilot air from RV-3 exhausts to atmosphere via RV-2.

Restriction N-1 determines the time span during which both signals must be received in order to obtain the output. When RV-1 and RV-2 are actuated together, supply air is directed through RV-1, RV-2 and RV-3 to the output, providing a momentary output signal that is determined by N-1. If a maintained signal is required, a jumper between E and F maintains an output as long as the operator is depressing both palm buttons.

The indicator on RV-3 (R-315) must be down for an output to be obtained. If either RV-1 or RV-2 is actuated separately, their respective indicator will go up, but after approximately one second, the indicator on RV-3 (R-315) will go down showing that the valve has shifted and an output cannot be obtained. Circuit performance and sequence should be periodically observed to verify proper function.
MODULAR VALVES
STANDARD CIRCUIT MODELS

BACK PRESSURE LATCH CONTROL

The VA-034 module is for operation of a clamp or collet system where Two-Hand, No-Tie-Down (THNTD) input is required to be held continuously until the position desired (limit valve) is fully engaged. THNTD circuit is re-engaged to release the clamp mechanism.

Output of the CM-023 or VA-023 goes to the VA-034 module and begins to extend cylinder. The two palm buttons on the THNTD must remain actuated until the limit valve is actuated or unit will retract the cylinder. When the cylinder has depressed the limit valve, the unit locks the valve, and the cylinder continues to see pressure on the extend port. The unit is latched and buttons can now be released. A second input from the CM-023 or VA-023 (depressing both buttons) will now release the latch and retract the cylinder to the starting position as shown, and the circuit is ready for another operation.

TWO-HAND, NO-TIE-DOWN CIRCUIT WITH LATCHING CONTROL

The VA-038 module is for operation of a clamp or cylinder operation where Two-Hand, No-Tie-Down (THNTD) input is required to be held continuously until the position desired (limit valve) is fully engaged. The THNTD circuit releases the latch and returns the cylinder to the retracted position.

The two palm buttons on the THNTD must remain actuated until the limit valve is actuated, or the unit will retract the cylinder. When the cylinder has depressed the limit valve, the unit locks the valve, and the cylinder continues to see pressure on the extend port. The unit is latched, and buttons can now be released. A second input from depressing both buttons will now release the latch and retract the cylinder to the starting position as shown, and the circuit is ready for another operation.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
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<td>VA-034</td>
<td>Back Pressure Latch Control for VA-023</td>
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Circuit includes two R-431 valves, one CM-034-PQ circuit manifold, fittings, and tubing

Pressure Range 40 to 150 psig
MODULAR VALVES
STANDARD CIRCUIT MODELS

AUTO-CYCLING OF A DOUBLE-ACTING CYLINDER

The VA-06 module is designed to use an “on-off” toggle valve (or alternative input) for the cycling of a double-acting cylinder without the use of limit valves.

This circuit enables a double-acting cylinder to reciprocate without the use of limit valves and to control its speed in each direction. The two R-343 valves also incorporate adjustable delay features that will control the time between retract and extend cycles. With the miniature needle valves, the speed of the cylinder is also adjustable for your application.

BACK PRESSURE SENSING WITH A DOUBLE-ACTING CYLINDER USING EXTERNAL POWER VALVE

The VA-033 module is very similar to the VA-031 for controlling a double-acting cylinder without limits. The circuit uses back pressure to send a signal when the cylinder finishes moving. This module is designed to be used in conjunction with an external power valve.

This circuit enables feedback from the external valve outputs to signal back to the module ports (CYL+ and -) when back pressure is building. Utilizing ports TS and FS allows you to loop them back to the module’s inputs, and create an auto-cycling circuit using back pressure, as opposed to a timing signal (such as the VA-06 module). You can also choose to use the output to go to a manual button, pneumatic delay valve, electronic valve and PLC, or pneumatic sequencer (such as a R-932 circuit) and allow those options to signal back to the module to begin the next cycle.

For assistance with selecting or configuring Clippard pneumatic circuit modules for your application, call 877-245-6247.
MODULAR VALVES

3-WAY PILOT VALVES
Normally-Closed, Normally-Open, Selector, Diverter

- Normally-Closed shown
  - R-301
    3-Way spring return, fully-ported

- Normally-Closed shown
  - R-302
    3-Way double pilot, fully-ported

- Normally-Closed shown
  - R-305
    3-Way, spring return, fully-ported with low pressure pilot

- Normally-Closed shown
  - R-310
    3-Way, fully-ported with special spring reset to return to preset position when pressure is lost

3-WAY PILOT VALVES
Normally-Closed, Normally-Open, Selector, Diverter

- Normally-Closed shown
  - R-311
    3-Way spring return, fully-ported with 4 pilots; any will actuate valve

- Normally-Closed shown
  - R-312
    3-Way fully-ported with 1 pilot on side and 4 pilots on opposite side; any will actuate valve

- Normally-Closed shown
  - R-314
    3-Way, fully-ported with 2 pilots on side and 3 pilots on opposite side; any will actuate valve

- Normally-Closed shown
  - R-315
    3-Way, spring return, fully-ported with 2 pilots, either will actuate valve, and aux. pilot on spring side

3-WAY COMBINATION VALVES
Normally-Closed, Normally-Open, Selector, Diverter

- Normally-Closed shown
  - R-321
    3-Way spring return, fully-ported with shuttle valve on the pilot

- Normally-Closed shown
  - R-322
    3-Way fully-ported with shuttle valve on 1 sides pilot

- Normally-Closed shown
  - R-323
    3-Way, spring return, fully-ported with independent shuttle valve in the same body

- Normally-Closed shown
  - R-324
    3-Way fully-ported with independent shuttle valve in body

3-WAY 2-POSITION AIR PILOT DELAY VALVES
Normally-Closed, Normally-Open, Selector, Diverter

- R-331/333
  Delay “In” function will allow a signal at port 4 to delay through an adjustable flow control and delay the actuation of the valve

- R-332/334
  Delay “In” function will allow a signal at port 4 to delay through an adjustable flow control and delay the actuation of the valve. Pressure at port 6 will shift the valve back

- R-341/343
  Delay out function will allow a signal at port 4 to shift the valve immediately. Loss of air at port 4 will delay the valve to shift to its original position
MODULAR VALVES

3-WAY SPECIALTY VALVES

**Normally-Closed Double**

R-351
Combination of two independent 3-Way, Normally-Closed, 2-position spring return valves

**Normally-Closed Double with Common Supply**

R-352
Combination of two independent 3-Way, Normally-Closed, 2-position spring return valves with a common supply port for convenience

**Normally-Closed Double “AND” Valve**

R-353
Combination of two 3-Way, Normally-Closed, 2-position spring return valves that make up a 3-input “AND” subcircuit

**Normally-Open Double**

R-355
Combination of two independent 3-Way, Normally-Open, 2-position spring return valves

4-WAY SINGLE PILOT VALVES

**R-401/R-402**
4-Way, fully-ported, 2-position. R-401 is a spring return valve

**R-405**
4-Way, spring return, fully-ported with low pressure pilot

**Reset**

R-412
4-Way fully-ported, 2-position double air-pilot valve with a return to home when supply air is exhausted

**3-Position**

R-421
4-Way fully-ported 3-position spring to center valve

4-WAY MULTI-PILOT VALVES

**R-431**
5-port, 4-Way spring return, dual pilot. Indicator shows valve in shaded position.

**R-432**
5-port, 4-Way dual pilot. Indicator shows valve in shaded position.

**R-433**
5-port, 4-Way spring return, dual pilot. Indicator shows valve in shaded position.

**R-434**
5-port, 4-Way dual pilot. Indicator shows valve in shaded position.

4-WAY DELAY PILOT VALVES

**R-443**
4-Way spring return, fully-ported with adjustable flow control. Metered “Out” on pilot

**R-445**
4-Way spring return, fully-ported with adjustable needle valve connected to pilot

**R-453**
4-Way spring return, fully-ported with adjustable flow control. Metered “In” on pilot

**R-454**
4-Way fully-ported with adjustable flow control. Metered “In” on pilot
MODULAR VALVES

4-WAY SPECIALTY VALVES

R-410
4-Way, fully-ported with special spring reset to return to preset position when pressure is lost

R-411
4-Way for use with R-402/R-412 in "Flip-Flop" circuit

R-461
4-Way spring return, 6-ported

R-462
4-Way, 6-ported

R-465
4-Way spring return, 6-ported with low pressure pilot

R-471
4-Way spring return, fully-ported with amplified pilot

R-472
4-Way fully-ported with amplified pilot

R-481
4-Way spring return, fully-ported, piloted by Clippard ET-3 valve

SPECIALTY VALVES

R-482
4-Way, fully ported, piloted by Clippard ET-3 electronic valve

R-501 (shown)/502
Flow control valves. R-501, Delay in, R-502, Delay out

R-602 (shown)/603
Dual shuttle valves. R-603, 3 input "OR"

R-711
Pulse valve, Normally-Open

SEQUENCE VALVE

R-932
Sequence valve

R-441
4-Way spring return, fully-ported with bleed pilot for low force sensors

R-442
4-Way, fully-ported with bleed pilots for low force sensors

R-811
Connector to subplate R-101, R-111 and manifolds

FILTER MODULE

R-801
Filter Module, 25 micron

VOLUME CHAMBER

R-821
Volume Chamber, 1.2 cubic inch

FILTER MODULE

R-801
Filter Module, 25 micron

VOLUME CHAMBER

R-821
Volume Chamber, 1.2 cubic inch

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CA PROPOSITION 65

All products shipped to or sold to consumers in California include Proposition 65 documentation with the shipment and reference our website. There are over nine hundred (900) chemicals on the Proposition 65 list, some of which are used in Clippard materials and/or processes. Although not all products contain chemicals within the list, Clippard is being cautious and diligent in complying with the California Law.

As of August 30, 2018, chemicals we are aware of that are listed within Proposition 65 are detailed online at clippard.com/link/prop65, or for additional information please contact tech@clippard.com.