The V² miniature pneumatic solenoid valve is a proven product with a reputation for reliable and consistent performance. Designed for medical device and system manufacturers, the V² miniature pneumatic solenoid valve is made from lightweight PBT plastic and provides flexible mounting and termination options. The V² miniature pneumatic solenoid valve also offers pneumatic and electrical design flexibility. It is available in manifold mount or 1/8" (3 mm) barbed tube configurations and is also available with either wire lead, quick connect spade or 4 pin printed circuit board electrical termination.

### Performance Characteristics

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leak Rate (Air)</td>
<td>≤0.2 sccm</td>
</tr>
<tr>
<td>Response</td>
<td>&lt;30 ms cycling</td>
</tr>
<tr>
<td>Pressure</td>
<td>0 to 100 psig (6.89 bar)</td>
</tr>
<tr>
<td>Vacuum</td>
<td>0-27 in Hg (686 mm Hg)</td>
</tr>
<tr>
<td>Orifice Sizes</td>
<td>0.030&quot; (0.76 mm)</td>
</tr>
<tr>
<td></td>
<td>0.050&quot; (1.27 mm)</td>
</tr>
<tr>
<td>Reliability</td>
<td>Life cycle rating of 25 million (worst case tested, no performance degradation)</td>
</tr>
</tbody>
</table>

### Typical Applications

- Oxygen Conservers
- Flow control/shut-off valve
- Portable Medical Devices

### Wetted Materials

- **Body:** PBT
- **Stem Base:** 36000 HO2 Brass
- **All Others:**
  - FKM
  - 430 FR Series Stainless Steel
  - 302 Series Stainless Steel

### Electrical

- **Power Options:**
  - 0.5, 1.0, or 2.0 Watts
- **Voltage Options:**
  - 5, 12 or 24 VDC
  - Further power reduction may be achieved through the use of spike and hold or PWM electrical control.

### Mechanical

- **Valve Type:** 2/3 Port, Direct-acting poppet style
  - Normally Closed (NC)
  - Normally Open (NO)
  - Distributor (Dist)
- **Media:**
  - Air, Oxygen, Helium, Nitrogen, Carbon Dioxide/Monoxide, & other non-reactive gases.
- **Operating Environment:**
  - 32 to 158°F (0 to 70°C )
- **Storage Temperature:**
  - -40 to 158°F (-40 to 70°C)
- **Dimensions:**
  - Length: 1.73 in (43.9 mm)
  - Width: 0.63 in (15.9 mm)
  - Height: 0.67 in (17.0 mm)
- **Weight:** 1.2 oz (34.3 g)
- **Internal Volume:** 0.0009 in³ (0.016 cm³)
- **Filtration:** 40 micron (recommended)
**V² Valve  Miniature Pneumatic Solenoid Valve**

**Typical Flow Curve**

![Flow Curve Graph]

All models reflect typical flow output capability based on rated pressure.

### Pressure and Flow Capabilities

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Orifice Size</th>
<th>Nominal Cv</th>
<th>Maximum Supply Pressure</th>
<th>Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0.030 in (0.76 mm)</td>
<td>0.017</td>
<td>100 psig (6.89 bar)</td>
<td>2 Watts</td>
</tr>
<tr>
<td>13</td>
<td>0.030 in (0.76 mm)</td>
<td>0.017</td>
<td>50 psig (3.45 bar)</td>
<td>1 Watt</td>
</tr>
<tr>
<td>14</td>
<td>0.050 in (1.27 mm)</td>
<td>0.034</td>
<td>30 psig (2.07 bar)</td>
<td>2 Watts</td>
</tr>
<tr>
<td>16</td>
<td>0.030 in (0.76 mm)</td>
<td>0.017</td>
<td>25 psig (1.72 bar)</td>
<td>0.5 Watt</td>
</tr>
<tr>
<td>17</td>
<td>0.050 in (1.27 mm)</td>
<td>0.032</td>
<td>15 psig (1.03 bar)</td>
<td>1 Watt</td>
</tr>
<tr>
<td>20</td>
<td>0.050 in (1.27 mm)</td>
<td>0.030</td>
<td>6 psig (0.41 bar)</td>
<td>0.5 Watt</td>
</tr>
</tbody>
</table>
**V² Valve**  Miniature Pneumatic Solenoid Valve

**Mechanical Integration**

**Dimensions**

### V² Basic Dimensions, Barbed Configuration

**Barbed**

- **Port 1:** (2-WAY, INLET) (3-WAY, NORMALLY CLOSED)
- **Port 2:** (2-WAY, OUTLET) (3-WAY, COMMON)
- **Port 3:** (2-WAY, NONE) (3-WAY, NORMALLY OPEN)

### V² Basic Dimensions, Manifold Mount Configuration

**Manifold Mount**

- **Port 1:** (2-WAY, INLET) (3-WAY, NORMALLY CLOSED)
- **Port 2:** (2-WAY, OUTLET) (3-WAY, COMMON)
- **Port 3:** (2-WAY, NONE) (3-WAY, NORMALLY OPEN)
**Miniature Solenoid Valves**

### Electrical Interface

**Coil Type: Solder Tab**  
(See Order Info "S")

**Coil Type: Quick Connect Spade**  
(See Order Info "Q")

**Coil Type: Wire Leads**  
(See Order Info "F")

**Coil Type: 4 PC Pins*  
(See Order Info "P")

*PCB Pin Layout (Coil Type 4 PC Pin)

**Units**

- **In.** [**mm.**]

**Electrical Interface**

- **V² Valve** Miniature Pneumatic Solenoid Valve

---

**Electrical Interface Details**

- **Coil Type: Solder Tab**
  - 1.25 [3.18] In. [mm.]
  - 1.95 [4.95] In. [mm.]
  - 2.64 ± 0.15 In. [6.71 ± 0.38 mm.]

- **Coil Type: Quick Connect Spade**
  - 1.10 [2.79] In. [mm.]
  - 1.95 [4.95] In. [mm.]
  - 0.39 [9.9] In. [mm.]

- **Coil Type: Wire Leads**
  - 0.18 [0.46] In. [mm.]
  - 0.264 ± 0.015 In. [6.71 ± 0.38 mm.]
  - 0.86 [21.8] In. [mm.]

- **Coil Type: 4 PC Pins**
  - 0.18 [0.46] In. [mm.]
  - 0.43 [10.9] In. [mm.]

---

**Body Mounting Hole**

- 2X Ø.125 [Ø3.18] In. [mm.]

**PCB Soldering Hole**

- 4X Ø.052 [Ø1.32] In. [mm.]

---

**Parker**
**Miniature Pneumatic Solenoid Valve**

**ANSI Symbols**

**Pneumatic Schematics by Valve Types**

**TYPE 1**
2-WAY NORMALLY CLOSED

**TYPE 3**
3-WAY NORMALLY CLOSED

**TYPE 3**
3-WAY DISTRIBUTOR

**TYPE 4**
3-WAY NORMALLY OPEN

---

**Legend:**

- **SUPPLY:** Pneumatic Source or Supply Pressure
- **EXHAUST:** Exhaust to Atmospheric Pressure
- **REQMT:** Customer Requirement or Application
- **ATM:** Atmospheric Pressure

**V2 Valve**

Miniature Pneumatic Solenoid Valve

**MANIFOLD BODY OPTION**

**BARB BODY OPTION**

**LEGEND:**

- **ANSI Symbols**
- **Pneumatic Schematics by Valve Types**

---

**SUPPLY**

Pneumatic Source or Supply Pressure

**EXHAUST**

Exhaust to Atmospheric Pressure

**REQMT**

Customer Requirement or Application

**ATM**

Atmospheric Pressure

---

**Port Locations**

- (1) SUPPLY
- (2) REQMT
- (3) EXHAUST
- (1) EXHAUST
- (2) SUPPLY
- (3) ATM

---

**Port Connections**

- (1) DE-ENERGIZED
- (2) ENERGIZED
**V² Valve**  Miniature Pneumatic Solenoid Valve

**Accessories**

**O-Ring (Manifold Seal) Dimensions**  
190-007024-002  
(2 required for each valve)  
I.D. = Ø114 ±0.005 [Ø2.90 ±0.13]  
W = .070 ±.003 [1.78 ±0.08]  
O.D. = Ø250 [6.35] REFERENCE

**Body Standoff**  
890-00027-001  
(2 required for each valve)

**Screw 4-40 x 5/8” Pan Head**  
191-000115-010  
(2 required for each valve)

---

**Ordering Information**

<table>
<thead>
<tr>
<th>Sample Part ID</th>
<th>V2</th>
<th>14</th>
<th>3</th>
<th>PV</th>
<th>12</th>
<th>P</th>
<th>8</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Series</td>
<td>Model Number</td>
<td>Pressure / Orifice / Power</td>
<td>Type</td>
<td>Material XX</td>
<td>Body / Poppet / Seal</td>
<td>Voltage</td>
<td>Coil Type</td>
</tr>
<tr>
<td>Options</td>
<td>V2</td>
<td>10: 0-100 psi / 0.030” orifice / 2 Watts</td>
<td>1: 2-Way NC</td>
<td>PVC</td>
<td>Plastic / FKM</td>
<td>6: 5 VDC</td>
<td>Y: wire Leads, 10”</td>
<td>D: manifold Mount</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13: 0-50 psi / 0.030” orifice / 1 Watt</td>
<td>5: 3-Way NC or Distributor</td>
<td></td>
<td></td>
<td>12: 12 VDC</td>
<td>P: PC Mount, 4 PC Pins</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>14: 0-25 psi / 0.050” orifice / 2 Watts</td>
<td>6: 3-Way NO</td>
<td></td>
<td></td>
<td>24: 24 VDC</td>
<td>S: PC Mount, 2 Solder Tabs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>16: 0-15 psi / 0.050” orifice / 1 Watt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D: Quick Connect Spade</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>17: 0-50 psi / 0.050” orifice / 1 Watt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>18: 0-30 psi / 0.050” orifice / 0.5 Watt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>19: 0-15 psi / 0.050” orifice / 0.5 Watt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Accessories**

- **191-000115-010**: Screw 4-40 x 5/8” Pan Head, Phillips  
- **890-00027-001**: Body Standoff  
- **190-007024-002**: O-ring, FKM

**NOTE:** In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

- Media, Inlet & Outlet Pressures
- Minimum Required Flow Rate
- System Supply Voltage
- Media
- Ambient Temperature Range

Please click on the Order On-line button (or go to www.parker.com/precisionfluidics/v2) to configure your V² Miniature Pneumatic Solenoid Valve. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002156-001 and Drawing #890-003080-001.