Miniature Solenoid Valves
Precision Fluidics

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

ENGINEERING YOUR SUCCESS.
When you partner with the global leader in motion and control technologies, expect to move your business and the world forward. From miniature solenoid valves to highly integrated automation systems, our innovations are critical to life-saving medical devices and scientific instruments used for drug discovery and pathogen detection. Not to mention, critical to decreasing time to market and lowering your overall cost of ownership. So partner with Parker, and get ready to move, well, anything.
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X-Valve® is a 2 or 3-way universal solenoid valve measuring just 8mm in width. The X-Valve’s unitized body incorporates its functional features in a single glass-reinforced PBT [Polybutylene Terephthalate] molded body.

**Features**
- Provides compact size; only 8mm in width.
- Meets a range of pressure requirements including 6, 30 & 100 psi.
- Offers optional capabilities to meet a 0.016 sccm leakage specification (0.2 sccm for 100 psi) for over 25 million cycles. (worst case tested, no performance degradation)
- Ensures high reliability with its single piece body design.
- Allows for direct tubing connection or a radial seal for manifold assemblies through its universal barb design.
- ROHS compliant

**Physical Properties**
- **Valve Type:**
  - 2/3-Way Normally Closed 6, 30, 100 psi
  - 2/3-Way Normally Open 6, 30 psi
  - 3-Way Distributor 6, 30 psi
- **Media:**
  - Non-Reactive Gases
- **Operating Environment:**
  - 32 to 122°F (0 to 50°C)
  - 59 to 122°F for 100 psi (15 to 50°C)
- **Storage Temperature:**
  - -40 to 158°F (-40 to 70°C)
- **Length:**
  - 0.92 in (24 mm)
- **Width:**
  - 0.31 in (7.9 mm)
- **Height:**
  - 0.35 in (9 mm)
- **Spacing:**
  - 0.135 in (8 mm) centers
- **Porting:**
  - Universal barbs for 1/16" I.D. tubing (1/32" Wall Max.);
  - Manifold mount with X-seal
- **Weight:**
  - 0.16 oz (4.5 grams)
- **Internal Volume:**
  - .0045 in³ (0.074 cm³)

**Wetted Materials**
- PBT (Polybutylene Terephthalate);
- 430 Series Stainless Steel;
- 302 Series Stainless Steel
- FKM (Fluoroelastomer) or EPDM (Ethylene Propylene Diene Monomer) or Silicone

**Electrical**
- **Power:**
  - 0.5 Watt (6 psi model)
  - 1.0 Watt (30, 100 psi model)
- **Voltage:**
  - 3, 5, 12, 24 VDC
  - Not all voltage options are available in all models.
  - See Ordering Info.
- **Electrical Connections:**
  - PC Pins, 4 mm centers (all models)
  - Optional lead wires

**Performance Characteristics**
- **Leak Rate:**
  - <0.016 sccm (6 psi Silicone)
  - <0.016 sccm (30 psi FKM)
  - <0.16 sccm (6 psi EPDM & FKM)
  - <0.2 sccm (100 psi only)
- **Response:**
  - <20 msec cycling (Silicone, FKM)
  - <50 msec cycling (EPDM)
- **Pressure:**
  - 0 to 6 psig (0.04 MPa)
  - 0 to 30 psig (0.20 MPa)
  - 0 to 100 psig (0.69 MPa)
- **Minimum Flow:**
  - 4 lpm @ 6 psi (0.04 MPa)
  - 6 lpm @ 30 psi (0.20 MPa)
  - 9 lpm @ 100 psi (0.69 MPa)
- **Orifice Sizes/Equivalent Cv:**
  - 0.020”/0.005 Cv
  - 0.030”/0.010 Cv
  - 0.045”/0.018 Cv

**Typical Flow Curve (Tested w/ air 24° C)**

X-Valve is a registered trademark of Parker Hannifin Corporation.
X-Valve® Universal Style Solenoid Valve

Connection Diagram

Dimensions

Ordering Information

<table>
<thead>
<tr>
<th>Series</th>
<th>Model</th>
<th>Voltage</th>
<th>Electrical Connection</th>
<th>Elastomer</th>
<th>Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Pressure/Orifice/Coil Wattage/Type</td>
<td></td>
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<tr>
<td>1: 6 psi/0.045&quot;/0.9 Watt/Universal</td>
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<tr>
<td>2: 30 psi/0.030&quot;/1 Watt/Universal</td>
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<tr>
<td>5: 100 psi/0.020&quot;/2 Watt/NC</td>
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<td></td>
<td>03</td>
<td>3 VDC</td>
<td></td>
<td>F: FKM</td>
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<tr>
<td></td>
<td>05</td>
<td>05 VDC</td>
<td>E: EPDM</td>
<td></td>
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<tr>
<td></td>
<td>12</td>
<td>12 VDC</td>
<td>S: Silicone</td>
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<td></td>
<td>24</td>
<td>24VDC</td>
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NOTE: Not all versions available for online purchase. Please consult Parker Precision Fluidics for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002166-001 (6, 30 psi) and Drawing #790-002241-001 (100 psi) and drawing #890-003090-002.

For more information call 1.800.525.2857 or email ppfinfo@parker.com

Visit www.parker.com/precisionfluidics
NEX-Valve
Non Elastomeric

Universal Style Solenoid Valve

NEX-Valve is a 3 Way 2 position, bidirectional flow, non elastomeric valve that incorporates many of the proven features of the X-valve. NEX is designed to eliminate elastomer swelling commonly encountered in aggressive liquid applications.

Features
- Unique non elastomeric design eliminates compatibility issues typically found with Alcohols, Solvents, Water and Solvent based inks
- Power consumption as low as 0.5 Watts; PWM and pulse hold circuit compatible
- Ensures high reliability with its single piece body design.
- Allows for direct tubing connection or a radial seal for manifold assemblies through its universal barb design.
- ROHS Compliant

Common Applications
- Inkjet printing, print heads
- Reservoir fill/drain.
- Liquid cooling systems

Physical Properties

<table>
<thead>
<tr>
<th>Valve Type:</th>
<th>2/3-Way Normally Closed</th>
<th>2/3-Way Normally Open</th>
<th>3-Way Universal 2 Way NC (30 psig only)</th>
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<tbody>
<tr>
<td>Media:</td>
<td>Water, Alcohols (Methanol, Ethanol) Solvents (MEK, Toulene)</td>
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<tr>
<td>Operating Environment:</td>
<td>32 to 122°F (0 to 50°C)</td>
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</tr>
<tr>
<td>Storage Temperature:</td>
<td>-40 to 158°F (-40 to 70°C)</td>
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<tr>
<td>Length:</td>
<td>0.92 in (24 mm)</td>
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<td></td>
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<tr>
<td>Width:</td>
<td>0.31 in (7.9 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height:</td>
<td>0.35 in (9 mm)</td>
<td></td>
<td></td>
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<tr>
<td>Spacing:</td>
<td>0.135 in (8 mm) centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porting:</td>
<td>Universal barbs for 1/16&quot; I.D. tubing (1/32&quot; Wall Max.); Manifold mount with X-seal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight:</td>
<td>0.16 oz (4.5 grams)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Volume:</td>
<td>.0045 in³ (0.074 cm³)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Electrical

<table>
<thead>
<tr>
<th>Power:</th>
<th>0.5 Watt (6 psi model)</th>
<th>1.0 Watt (30 psi model)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage:</td>
<td>3, 5, 12, 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Not all voltage options are available in all models. See Ordering Info.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Connections:</td>
<td>PC Pins, 4 mm centers (all models)</td>
<td></td>
</tr>
<tr>
<td>Optional lead wires</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wetted Materials

- PBT (Polybutylene Terephthalate); 430 Series Stainless Steel; 302 Series Stainless Steel

Technical Specifications

- Leakage Rate: .02 cc/min, water (water tight)
- Response: <20 msec cycling
- Pressure: 0 to 6 psig (0.04 MPa), 0 to 30 psig (0.20 MPa)
- Minimum Flow: Water 160 ml/min @ 6 psi, 225 ml/min @ 30 psi
- Orifice Sizes/Equivalent Cv: 0.030"/0.010 Cv, 0.045"/0.018 Cv

Water Flow vs Pressure Graph

- 4 psi/0.045 orifice
- 30 psi/0.030 orifice

Parker
NEX-Valve  Universal Style Solenoid Valve

Connection Diagram

Dimensions

Ordering Information

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<th>NEX</th>
<th>05</th>
<th>L</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
<td>No. Pressure/Orifice/Coil Wattage/Type</td>
<td>Series</td>
</tr>
<tr>
<td>Sample Part ID</td>
<td>1: 6 ps/0.045”/0.5 Watt/Universal</td>
<td>03</td>
</tr>
<tr>
<td></td>
<td>2: 30 ps/0.030”/1 Watt/NC</td>
<td>05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

NOTE: Please consult Parker Precision Fluidics for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002240-001 and drawing #890-003090-001 [Standard pin length] # 890-003090-002 [Long pin length].

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics
Ten-X® is a 10mm solenoid valve with a 2- or 3-way NO/NC and distributor design. Ten-X delivers repeatable “energized” and “de-energized” response times, low power, and flow capability to meet the specific performance requirements of medical devices.

**Features**
- Small 10mm footprint, with up to 8 lpm of flow
- Highly reliable single piece body design
- Universal barb or manifold connections and PCB mount
- 20 million cycles (worst case tested, no performance degradation)
- ROHS compliant

**Common Applications**
- Portable medical equipment
- Patient monitors
- Wound therapy
- Non-invasive blood pressure

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### Physical Properties

**Valve Type:**
- 2/3-Way Normally Closed
- 2 and 3-Way Normally Open
- 3-Way Distributor

**Media:**
Non-Reactive Gases

**Operating Environment:**
- 32 to 122°F (0 to 50°C)
- Continuous Duty

**Storage Temperature:**
- -40 to 158°F (-40 to 70°C)

**Length:**
- 1.26 in. (32 mm)

**Width:**
- 0.39 in. (10 mm)

**Height:**
- 0.63 in. (16 mm)

**Porting:**
- Barbs for 0.078 in. ID tubing;
- Manifold mount with gasket

**Weight:**
- 0.39 oz. (10.7 grams)

**Internal Volume:**
- 0.0080 in.³ (0.131 cm³)

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### Electrical

**Power:**
- 0.5 Watt (Continuous Duty)

**Voltage:**
- 5, 12, 24 VDC

**Electrical Connections:**
- PC Pins, 6 mm centers

### Performance Characteristics

**Leak Rate:**
- 0.016 sccm of air (Silicone)
- 0.2 sccm of air (Viton & EPDM)

**Response Time:**
- <5 msec cycling (Silicone)
- <20 msec cycling (Viton & EPDM)

**Pressure:**
- Up to 6 psi (0.04 MPa)

**Minimum Flow:**
- 8 lpm @ 6 psi (0.04 MPa)

**Orifice Sizes/Equivalent Cv:**
- 0.060"/0.042 Cv

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### Wetted Materials

Polybutylene Terephthalate (PBT)
Glass Filled, 430FR Series Stainless Steel, 302 Series Stainless Steel, Silicone, EPDM or FKM elastomer
Consult factory for details.

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**Typical Flow Curve (Tested w/ air 24°C)**

Minimum 8 lpm at 6 psi

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Ten-X is a registered trademark of Parker Hannifin Corporation.
Ten-X® Digital Solenoid Valve

Connection Diagram

Dimensions

- Normaly Closed
- Normally Open
- Distributor

Manifold Mount Diagram

Ordering Information

<table>
<thead>
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<th>Sample Part ID</th>
<th>Valve Type</th>
<th>Series</th>
<th>Elastomer</th>
<th>Model</th>
<th>Voltage</th>
<th>Electrical</th>
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<td>05</td>
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<td>000</td>
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<td>1</td>
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<td>2</td>
<td>Silicone</td>
<td>2-Way ND 6 PSI Silicone/EPDM Elastomer</td>
<td>Standard</td>
<td>5 VDC</td>
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<td>2</td>
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<td>2</td>
<td>Viton (FKM)</td>
<td>2/3-Way NC 6 PSI FKM Elastomer Only</td>
<td>12 VDC</td>
<td>2 PC Mount</td>
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<tr>
<td>3</td>
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<td>3</td>
<td>EPDM</td>
<td>3-Way ND 6 PSI Silicone/EPDM Elastomer</td>
<td>24 VDC</td>
<td></td>
</tr>
</tbody>
</table>

Accessories

- Mounting Screw 190-00012-010 *
- Manifold Gasket (FKM) 195-00-0211-001 *
- Manifold Gasket (EPDM) 195-00-0211-001 *
- 1/8" Leads w/ Connector 490-000073-001 *

* Order as separate line items

NOTE: Not all versions available for online purchase. Please consult Parker Precision Fluidics for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002213-001 and Drawing #890-003150-001.

For more information call 1.800.525.2857 or email ppinfo@parker.com
Visit www.parker.com/precisionfluidics
Ten-X® Le Low Energy Digital Solenoid Valve
10mm Normally Open/Closed Solenoid Valve

The Ten-X® Le is an electro-magnetic poppet valve designed to provide the highest performance available for the package size. The quiet, lightweight 10-mm wide valve can be used stand alone with tube connections, PC or multi-station manifold mount set-ups. Integrated drive electronics featuring efficient pulse width modulation (PWM) circuit technology consume minimal power.

Features
- Low power, small 10mm footprint with up to 22 lpm of flow
- Minimal heat generation provides stable performance for valve and surrounding environment
- 20 million cycles (worst case tested, no performance degradation)
- ROHS compliant

Common Applications
- Portable medical equipment
- Wound therapy
- Non-invasive blood pressure

Physical Properties

<table>
<thead>
<tr>
<th>Valve Type:</th>
<th>2/3-way Normally Closed 30 psi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2/3-way Normally Open 30 psi</td>
</tr>
<tr>
<td></td>
<td>3-way Distributor 20 psi</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Media:</th>
<th>Non-Reactive Gases</th>
</tr>
</thead>
</table>

| Operating Environment:  | 32 to 122°F (0 to 50°C)       |
|                         | Continuous Duty               |

| Storage Temperature:    | -40 to 158°F (-40 to 70°C)    |

<table>
<thead>
<tr>
<th>Length:</th>
<th>1.3 in. (33.1 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width:</td>
<td>0.39 in. (10 mm)</td>
</tr>
<tr>
<td>Height:</td>
<td>0.61 in. (15.5 mm)</td>
</tr>
<tr>
<td>Porting:</td>
<td>Barbs for 0.078 in. ID tubing;</td>
</tr>
<tr>
<td></td>
<td>Manifold mount with gasket</td>
</tr>
</tbody>
</table>

| Weight:                 | 0.42 oz. (12 grams)           |
| Internal Volume:        | 0.0080 in.³ (0.131 cm³)       |

Electrical

<table>
<thead>
<tr>
<th>Power:</th>
<th>0.5 Watt (with PWM circuit)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Voltage:</th>
<th>5, 12, 24 VDC</th>
</tr>
</thead>
</table>

| Electrical Connections: | PC Pins, 2.5 mm centers       |
|                        | (Model 2 only)                |

Wetted Materials

Polybutylene Terephthalate (PBT) glass filled, 430FR Series Stainless Steel, 302 Series Stainless Steel, FKM or EPDM Consult factory for details.

Performance Characteristics

<table>
<thead>
<tr>
<th>Leak Rate:</th>
<th>0.2 sccm of air max.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Response Time:</th>
<th>&lt;20 msec cycling</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Pressure:</th>
<th>Up to 30 psi (0.20 MPa)</th>
</tr>
</thead>
</table>

| Minimum Flow:           | 22 lpm at 30 psi (0.20 MPa)   |
| Orifice Sizes/Equivalent Cv: | 0.060”/0.042 Cv             |

Pulse Width Modulation

Typical Flow Curve (Tested w/ air 24°C)

Minimum 22 lpm at 30 psi

Ten-X is a registered trademark of Parker Hannifin Corporation.
Ten-X® L_e Low Energy Digital Solenoid Valve

Connection Diagram

Dimensions

Ordering Information

<table>
<thead>
<tr>
<th>Sample Part ID Description</th>
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<th>3</th>
<th>2</th>
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<th>Accessories</th>
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</tbody>
</table>

* Order as separate line item

NOTE: Not all versions available for online purchase. Please consult Parker Precision Fluidics for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002213-002 and Drawing #890-003150-002.

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics
SRS Valve  Universal Style Solenoid Valve
10 mm Manifold Mount Solenoid Valve

The 10mm SRS Series plastic solenoid valve converts a digital electrical signal into a digital pneumatic output. The SRS Series is constructed of engineering thermoplastics and non-corrosive metals to exceed the specifications demanded by critical applications in the life sciences.

Features
- Design incorporates thermoplastics and non-corrosive metals.
- Offers high-density manifold mounting with convenient manifold to PC board interface.
- Weighs only 0.23 ounces; perfect where low weight is critical to overall system.
- ROHS compliant.

Features
- Valve Type: 2/3-way Normally Closed
- Media: Gases
- Operating Environment: 32 to 131°F (0 to 55°C)
- Storage Temperature: -40 to 158°F (-40 to 70°C)
- Length: 1.5 in (38.1 mm)
- Width: 0.394 in (10 mm)
- Height: 0.61 in (15.49 mm)
- Porting: Manifold mount; Gasket supplied
- Weight: .23 oz (6.57 grams)
- Internal Volume: 0.0016 in³ (0.0267 cm³)
- Filtration: 40 micron (recommended)

Internal Volume:
0.0016 in³ (0.0267 cm³)

Wetted Materials
- Crystalline Plastics: PBT; LNP Thermocomp®
- Elastomers: FKM
- Non-Corrosive Metals: 302 Series Stainless Steel; 430 FR Series Stainless Steel; CMI-B Core Iron; Electroless Nickel Plating

Physical Properties
- Valve Type: 2/3-way Normally Closed
- Media: Gases
- Operating Environment: 32 to 131°F (0 to 55°C)
- Storage Temperature: -40 to 158°F (-40 to 70°C)
- Length: 1.5 in (38.1 mm)
- Width: 0.394 in (10 mm)
- Height: 0.61 in (15.49 mm)
- Porting: Manifold mount; Gasket supplied
- Weight: .23 oz (6.57 grams)
- Internal Volume: 0.0016 in³ (0.0267 cm³)
- Filtration: 40 micron (recommended)

Electrical
- Power: 0.5 or 1.0 Watt
- Voltage: 5, 12, 24 VDC + 10%

Performance Characteristics
- Leak Rate: <0.016 sccm (bubble tight)
- Response: <30 msec cycling
- Pressure: 0 to 20 psi (0.13 MPa)
- Vacuum: 0-27 in Hg (0.09 MPa)
- Orifice Sizes/Equivalent Cv:
  - 0.020"/.0075 Cv
  - 0.030"/.017 Cv
  - 0.045"/.027 Cv

Typical Flow Curve (Tested w/ air 24°C)
SRS Valve  Universal Style Solenoid Valve

Dimensions

Electric Interface Options

Typical Valve Selection Considerations:

Ordering Information

<table>
<thead>
<tr>
<th>Sample Part ID</th>
<th>SRS Series</th>
<th>P Type</th>
<th>V Material</th>
<th>12 Voltage</th>
<th>M Electrical Connection</th>
</tr>
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<tbody>
<tr>
<td>Description</td>
<td>Model Number</td>
<td>Material</td>
<td>Seal Material</td>
<td>Connection</td>
<td></td>
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<tr>
<td>Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 VDC</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24 VDC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.025&quot; Square Pins, Front</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Insulated Wire Leads, 18&quot;</td>
</tr>
</tbody>
</table>

NOTE: Not all versions available for online purchase. Please consult Parker for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002090-001 and Drawing #890-003061-001.

For more information call 1.800.525.2857 or email ppinfo@parker.com
Visit www.parker.com/precisionfluidics
Series 11, 25, 26 Classic Style Solenoid Valve
15mm Digital Solenoid Valve

Series 11, 25, and 26 PC mountable solenoid valves convert a digital electrical signal into a digital pneumatic output. The patented miniature design is preferred by medical and analytical OEMs worldwide and allows valves to be soldered directly onto a printed circuit board, providing both electrical termination and mechanical attachment. These valves power small cylinders directly or can be used to pilot larger valves that require high flow.

Features
- Offers discrete valve design with up to 200 million life cycle rating.
- Available in manifold mounting.
- Provides a range of electrical coil options, including PC mountable, spade lugs, or wire leads to simplify integration.
- Powerful enough for a range of uses that require high flow.
- ROHS compliant.

Physical Properties

Valve Type:
2/3-way Normally Closed
2/3-way Normally Open
3-Way Distributor

Media:
Gases and select liquids

Operating Environment:
-32 to 158°F (0 to 70°C)

Storage Temperature:
-40 to 158°F (-40 to 70°C)

Length:
1.73 in (43.94 mm)

Width:
0.625 in (15.88 mm)

Height:
0.67 in (17.02 mm)

Porting:
10-32 tapped ports, 1/16", 5/64", or 1/8" Stem Barbs, Manifold

Weight:
2.1 oz. (60 grams)

Internal Volume:
0.026 in³ (0.426 cm³)

Filtration:
40 micron (recommended)

Electrical

Power:
0.5, 1.0, or 2.0 Watts

Voltage:
5, 12, 24 VDC + 10%

Wetted Materials

Body:
360 HO2 Brass;
303 Series Stainless Steel

Stem Base:
385 HO2 Brass; 303 Series Stainless Steel

All Others:
FKM; EPDM; 430 FR Series Stainless Steel
302 Series Stainless Steel

Performance Characteristics

Leak Rate:
<0.016 sccm (bubble tight)

Response:
<30 msec cycling (2 Watts)

Pressure:
0 to 100 psi (0.69 MPa)
0 to 70 psi (0.48 MPa)
0 to 50 psi (0.34 MPa)
0 to 25 psi (0.17 MPa)
0 to 10 psi (0.07 MPa)

Vacuum:
0-27 in Hg (0.09 MPa)

Orifice Sizes/Equivalent Cv:
0.030*/0.017 Cv
0.050*/0.035 Cv

Typical Flow Curve (Tested w/ air 24°C)
Series 11, 25, 26  Classic Style Solenoid Valves

Dimensions

<table>
<thead>
<tr>
<th>TYPE 1</th>
<th>TYPE 2</th>
<th>TYPE 3</th>
<th>TYPE 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-WAY N.C. PRESSURE</td>
<td>3-WAY N.C. PRESSURE</td>
<td>DISTRIBUTOR PRESSURE</td>
<td>3-WAY N.C. PRESSURE</td>
</tr>
<tr>
<td>REQMT</td>
<td>REQMT</td>
<td>PRESSURE</td>
<td>REQMT</td>
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<td>SUPPLY</td>
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<td>DEENERGIZED</td>
<td>DEENERGIZED</td>
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<td>DEENERGIZED</td>
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<tr>
<td>ANSI SYMBOL</td>
<td>ANSI SYMBOL</td>
<td>ANSI SYMBOL</td>
<td>ANSI SYMBOL</td>
</tr>
</tbody>
</table>

Body Styles

- O 0 Barbs (Face Seal to Manifold)
- 0 Barbs (1/16 ID Tubing)
- 0 Barbs (5/64 ID Tubing)
- 10 Barbs (1/4 OD Max)

Stem Styles

- 0 Type 1 Top Seal (Plug Type)
- 0 Type 2 Top Seat (Plugged)
- 0 Type 3 Top Seat (Plugged)
- 0 Type 4 Top Seat (Plugged)

Ordering Information

<table>
<thead>
<tr>
<th>Sample Part ID</th>
<th>11</th>
<th>10</th>
<th>3</th>
<th>BV</th>
<th>12</th>
<th>P</th>
<th>7</th>
<th>7</th>
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<tbody>
<tr>
<td>Description</td>
<td>Series</td>
<td>Model Number</td>
<td>Type</td>
<td>Material</td>
<td>Voltage</td>
<td>Coil Type</td>
<td>Pneumatic Connection Body</td>
<td>Pneumatic Connection Stem</td>
</tr>
<tr>
<td>Options</td>
<td>11</td>
<td>2-Way N.C. Pressure</td>
<td>CF Body/Plunger &amp; Seal</td>
<td>5 VDC</td>
<td>PC Mount, 4 PC Pins</td>
<td>No Barbs</td>
<td>Type 1/None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>2-Way N.O.</td>
<td>Brass/FKM</td>
<td>12 VDC</td>
<td>Wire Leads, 18” No Term</td>
<td>No Barbs</td>
<td>1/16” Barbs*</td>
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<tr>
<td></td>
<td>12</td>
<td>3-Way N.C. or Distributor</td>
<td>Stainless Steel/FKM</td>
<td>24 VDC</td>
<td>PC Mount, 2 Solder Tabs</td>
<td>No Barbs</td>
<td>5/64” Barbs</td>
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<tr>
<td></td>
<td>13</td>
<td>3-Way N.O.</td>
<td>Brass/EPDM</td>
<td>24 VDC</td>
<td>Quick Connect Spade</td>
<td>No Barbs</td>
<td>1/8” Barbs</td>
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<td></td>
<td>14</td>
<td>3-Way N.O.</td>
<td>Selection of Stainless Steel Body may extend lead time</td>
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<td></td>
<td>1/8” Barbs</td>
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<tr>
<td></td>
<td>15</td>
<td>3-Way N.O.</td>
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<td></td>
<td></td>
<td></td>
<td>1/8” Barbs</td>
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</tbody>
</table>

* 1/8” Barbs not available for 0.050” orifice valves

NOTE: Series 25 and Series 26 valves are no longer standard product. Not all versions available for online purchase. Consult factory for qualified opportunities. Please consult Parker for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002075-001 and Drawing #890-003016-001.

ORDER ONLINE

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics

PPF-M8W-002/US  Sept 2009
Miniature Solenoid Valves

The V2 valve offers a unique plastic body, which provides an economical solution without compromising on quality or reliability. Parker offers the versatile V2 in either a manifold mount design or with molded barbed fittings. This PC and manifold mountable solenoid valve converts a digital electrical signal into a digital pneumatic output.

Features
- Cost-effective, unique Polybutylene Terephthalate (PBT) body.
- Manifold mount design or molded barbed fittings to fit a range of needs.
- ROHS compliant.

Performance Characteristics

**Electrical**
- **Power:** 0.5, 1.0, or 2.0 Watts
- **Voltage:** 5, 12, 24 VDC + 10%

**Wetted Materials**
- **Body:** PBT
- **Stem Base:** 360 HO2 Brass
- **All Others:** FKM; 430 FR Series Stainless Steel, 302 Series Stainless Steel; Loctite® 290

**Physical Properties**

| Valve Type: | 2/3-way Normally Closed 2/3-way Normally Open 3-Way Distributor |
| Media: | Non-Corrosive Gases |
| Operating Environment: | 32 to 158°F (0 to 70°C) |
| Storage Temperature: | -40 to 158°F (-40 to 70°C) |
| Length: | 1.73 in (43.94 mm) |
| Width: | 0.625 in (15.88 mm) |
| Height: | 0.67 in (17.02 mm) |
| Porting: | Barb fittings for 1/8” I.D. tubing or manifold mount |
| Weight: | 1.2 oz (34.29 grams) |
| Internal Volume: | 0.0009 in³ (0.016 cm³) |
| Filtration: | 40 micron (recommended) |

Typical Flow Curve (Tested w/ air 24°C)

Loctite® is a registered trademark of Henkel Consumer Adhesives, Inc.
V² Valve  Classic Style Solenoid Valves

Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>2-Way N.C. Pressure</th>
<th>3-Way N.C. Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
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<td>DEENERGIZED</td>
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<td>Type 3</td>
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</tr>
<tr>
<td></td>
<td>DEENERGIZED</td>
<td>DEENERGIZED</td>
</tr>
</tbody>
</table>

COIL STYLES

- P - PC MOUNT
- F - WIRE LEADS

BODY STYLES

- -8- PORT 2
- -8- PORT 1

STEM BARB STYLES

- -8- TYPE 1 TOP SEAT (PLUGGED)
- -8- 125 TOP SEAT (1/8 I.D. TUBING)

Ordering Information

<table>
<thead>
<tr>
<th>Sample Part ID Description</th>
<th>V²</th>
<th>14</th>
<th>3</th>
<th>PV</th>
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<th>8</th>
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<tbody>
<tr>
<td>Series</td>
<td>Model Number</td>
<td>Type</td>
<td>Material</td>
<td>Voltage</td>
<td>Coil Type</td>
<td>Body Styles</td>
<td>Topseat Barbs</td>
<td></td>
</tr>
<tr>
<td>No: Pressure/Orifice</td>
<td>10: 0-100 psig/0.650&quot;</td>
<td>1-B: 2-Way NC</td>
<td>Plastic/PKM</td>
<td>5 VDC</td>
<td>P: PC Mount, 4 PC Pins</td>
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<tr>
<td>11: 0-50 psig/0.300&quot;</td>
<td>12-B: 2-Way NC or Distributor</td>
<td>2-B: 2-Way NC</td>
<td>Plastic/PKM</td>
<td>12 VDC</td>
<td>F: Wire Leads, 18&quot;</td>
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<tr>
<td>13: 0-30 psig/0.050&quot;</td>
<td>14-B: 5-Way NO</td>
<td>3-A: Body/Plunger &amp; Seal</td>
<td>Plastic/PKM</td>
<td>24 VDC</td>
<td>19: 18&quot; Barbs</td>
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<tr>
<td>15: 0-15 psig/0.008&quot;</td>
<td>16-B: 5-Way NO</td>
<td>4-A: Body/Plunger &amp; Seal</td>
<td>Plastic/PKM</td>
<td>24 VDC</td>
<td>20: 18&quot; Barbs</td>
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<tr>
<td>17: 0-6 psig/0.008&quot;</td>
<td>18-B: 5-Way NO</td>
<td>5-A: Body/Plunger &amp; Seal</td>
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<td>24 VDC</td>
<td>21: 18&quot; Barbs</td>
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</table>

NOTE: Not all versions available for on-line purchase. Please consult Parker for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002156-001 and Drawing #890-003080-001.

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics
**PND Series Classic Style Solenoid Valve**

Normally Open Dump Valve

The PND Series is a miniature, low cost, application-specific, 2-way Normally Open exhaust or "dump" valve. Perfect for safety-oriented applications that require pressure relief to atmosphere upon power loss.

**Features**
- Normally Open exhaust valve in a small package size.
- Works well in miniature applications such as in Non-Invasive Blood Pressure (NIBP) devices.
- Provides small size and low cost.
- Offers low holding voltage.
- ROHS compliant.
- 250,000 cycles (worst case tested, no performance degradation)
- .050 Orifice comes standard with 2 M2 mounting holes.

**Physical Properties**

| **Valve Type:** | 2-Way Normally Open |
| **Media:** | Non-corrosive gases |
| **Operating Environment:** | -32 to 131°F (0 to 55°C) |
| **Storage Temperature:** | -13 to 158°F (-25 to 70°C) |
| **Length:** | 1.01 in (25.6 mm) |
| **Width:** | 0.394 in (10 mm) |
| **Height:** | 0.472 in (12 mm) |
| **Porting:** | 1 port, 0.118" (3 mm) O.D.; suitable for 0.078 I.D.; Urethane tubing |
| **Weight:** | .27 oz (7.71 grams) |
| **Internal Volume:** | 0.0016 in³ (0.026 cm³) |
| **Filtration:** | None required |
| **Lubrication:** | None required |

**Electrical**

- **Power:** 0.5 or less
- **Voltage:** 3, 6, 12 VDC

**Wetted Materials**

- **Elastomers:** Silicon; Nickel-Plated Steel
- **Frame:** SPCC (Treatment: MFZn2-c)
- **All Other:** Polybutylene Terephthalate (PBT); 303 Series Stainless Steel

**Performance Characteristics**

- **Leak Rate:** <0.016 sccm (bubble tight)
- **Response:** <100 msec cycling
- **Pressure:** 0 to 6 psi (0.04 MPa) holding
- **Vacuum:** 0-27 in Hg (0.09 MPa)
- **Orifice Sizes/Equivalent Cv:**
  - 0.030":/0.017 Cv
  - 0.050":/0.035 Cv
  - Larger sizes available in 15 mm frame
### Ordering Information

<table>
<thead>
<tr>
<th>Sample Part ID Description</th>
<th>PND Series 05A</th>
<th>PND Series 05D</th>
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<tr>
<td>Options</td>
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</table>

<table>
<thead>
<tr>
<th>Watts (Rated Power at 20°C)</th>
<th>Orifice Size</th>
<th>Voltage</th>
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</thead>
<tbody>
<tr>
<td>05: 0.5 Watt</td>
<td>D: 0.030&quot;</td>
<td>03: 3 VDC</td>
</tr>
<tr>
<td>A: 0.050&quot;</td>
<td></td>
<td>06: 6 VDC</td>
</tr>
<tr>
<td>Note: With Orifice Size of 0.050&quot;, the frame width and height increases 0.118&quot; (3mm)</td>
<td>Note:</td>
<td>12: 12 VDC</td>
</tr>
</tbody>
</table>

NOTE: Please consult Parker Precision Fluidics for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002198-001 and Drawing #s: PND-05A-DWG and PND-05D-DWG.
### Value Added Application-Specific Solutions

#### Gassing Control System
- Mixed gassing logic design includes VSO® proportional valves, X-Valve®, pressure switch, pressure sensors, and PCB interface

#### 7 Position X-Valve® Pneumatic Manifold
- Integrated pressure/vacuum sensors
- Mixed pneumatic logic design
- Ultem® manifold pressure/vacuum sensors

#### Vacuum Gas Control Module
- Tested to $1 \times 10^{-7}$ cc/sec/atm Helium
- Assembly tested on mass spectrometer

#### 6 Position VSO® Proportional Valve Pneumatic Manifold Assembly
- Quick connect fittings
- Circuit board with mass electrical termination

#### 5 Position SRS Model Pneumatic Manifold
- Mixed pneumatic logic assembly
- Integrated pressure sensors
- Mass termination of sensors & valves
- Pressed in barbed fittings

#### 8 Position SRS Model Pneumatic Manifold
- Integrated circuit board mounting
- Mass electrical termination

#### 10 Position X-Valve® Pneumatic Manifold
- Mixed pneumatic logic design
- Ultra-miniature design with PCB for mass termination

#### 10 Position SRS Model Pneumatic Manifold
- Circuit board with transducers
- Pressed in barbed fittings

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics
1. APPLICABLE LAW: This order shall be only subject to the terms and conditions set forth herein, notwithstanding any terms and conditions that may be contained in any order acknowledgement or other form of purchase. Such other terms and conditions of Buyer shall not bind the Seller unless accepted by it in writing whether or not they materially alter this order. This order shall be governed in all respects by the laws of the State of New Hampshire.

2. TAXES: Prices do not include Federal, State or local taxes, including without limitation, taxes which may at Seller’s discretion be added to sales price or may be billed separately and which taxes will, in any event, be paid by Buyer unless Buyer provides Seller with a proper tax exemption certificate.

3. TERMS OF PAYMENT: Unless otherwise stated on Seller’s invoices, terms of payment shall be Net 30 days from date of shipment. At any time if Seller in its sole discretion determines an alternative payment arrangement would be prudent, Seller may require Letter of Credit, Cash on Delivery, advance or other acceptable form of payment. If requirements of Seller are not met, Seller may cancel the order or any part thereof and receive reasonable cancellation fees.

4. DELIVERY: Seller shall not be liable for any delays in or failure of delivery due to acts of God or public authority, labor disturbances, accidents, fires, floods, extreme weather conditions, failure of any delays by carriers, shortages of material, delays of carriers or any other cause beyond Seller’s control, in which event Seller shall not be liable for any delay in or failure of delivery. Buyer’s requested delivery date or schedule shall be and are approximate and subject to Seller’s acceptance.

5. TERMINATION OF CONTRACT: Orders accepted by the Seller may be cancelled by Buyer with the consent of Seller and upon payment of reasonable cancellation charges, determined by Seller in its sole discretion. Seller shall have the right without penalty or payment to cancel any order accepted or to refuse or delay the shipment thereof if (1) Buyer fails to make promptly any payment due, or to meet any other obligation established by Seller, (2) Buyer’s financial condition or delays Seller’s performance, or (3) Buyer’s credit becomes impaired, in the Seller’s sole judgement. In such event, Seller shall be entitled to receive reimbursement for reasonable and proper cancellation charges.

6. CHANGES IN SPECIFICATIONS OR DESIGN: If Buyer requests changes in specifications or designs relating to any goods, delivery schedules shall be revised if necessary, and an equitable adjustment upward or downward shall be made in price if warranted.

7. FREIGHT: Carriers will be selected by the Seller unless the Buyer instructs otherwise in writing. All shipments will be F.O. B. Seller’s plant. Standard freight charges for equipment repaired under warranty will be paid by the Buyer. Parker Precision Fluidics. Buyer requests for alternatives means will be charged additional freight as required.

8. CONFIDENTIALITY: In no event shall Seller be liable for consequential or special damages arising out of the delivery of defective, damaged, workmanship, or arising out of a breach by Seller of any other term or obligation of the Seller under this contract.

9. GOVERNMENT CONTRACTS: If the products to be furnished under this contract are to be used in the performance of a United States Government Contract or sub-contract, the government contract must contain the same or substantially similar clauses to the effect that shall appear on the Buyer’s purchase order. If the Buyer’s purchase order includes all of said information and if said order is accepted in writing by an authorized officer of Seller, those clauses of the applicable government procurement regulations which are mandatory required by Federal statute or regulation to be included herein shall be incorporated here by reference, in all other events said clauses shall not be incorporated herein by reference.

10. PROPRIETARY INFORMATION: Buyer represents that is has adopted reasonable procedures to protect against the improper disclosure of proprietary information. Buyer will maintain confidentiality and shall not disclose, reproduce or otherwise make available to any third party and shall not transmit any documents or copies thereof containing proprietary information without the prior written consent of Seller. All information furnished by Seller which is identified as proprietary or confidential in writing shall be considered proprietary information and shall be protected by this agreement.

11. PATENT INDENIETY: Seller shall have no liability for patent infringement unless the goods furnished hereunder, in and of themselves, constitute the infringement. If, however, and if Seller is notified of the class of infringement within ten days after such claim is received by Buyer and is permitted to settle or defend such claim, Seller will indemnify Buyer against reasonable expense of defending such claim and against any judgement or settlement to which Seller agrees. However, such indemnity shall be limited to an amount not exceeding the price paid by Buyer to Seller for the infringing goods. If an injunction is issued against the further use of the goods, Seller will have the option of either repairing the Buyer the right to use the goods, replacing them with non-infringing goods, modify them so that they do not infringe, or refunding the purchase price. The foregoing constitutes Seller’s entire warranty and liability as to patents. If the goods furnished hereunder are in accordance with a design for which Seller will defend and hold harmless Buyer from all cost, expenses and judgments on accounts of any claim of infringement of any patent.

12. WARRANTIES: A. Seller warrants that all equipment manufactured by it shall be free from defects in materials or workmanship under normal use for a period of one (1) year from date of shipment to Buyer and upon examination of Seller determines to its satisfaction that such equipment is defective in material or workmanship and such defect was not caused by accident, misuse, neglect, alteration, improper adjustment, improper repair, improper application, or improper testing, Seller shall at its option repair or replace the equipment, shipment to Buyer prepaid. Seller does not recommend its products for use in life support systems.

B. The foregoing are in lieu of all warranties, covenants, warranties, covenants, express, implied, with respect to the products and any defects therein of any nature whatever, including without limitation, warranties of merchantability and fitness for any particular purpose, quality, condition, use and service of Buyer, and Buyer’s sale and exclusive remedy, for any nonconformity or defect in the products in tort (including negligence), contract, or otherwise, shall be as set forth in Section 10A.

Pricing and Lead Time

A. All Standard and lead times are as indicated on the current published Standard Price List and Discount Schedule.

B. Non-standard pricing is other than that contained in the published Price List must be approved by Parker Precision Fluidics and a formal quotation must be submitted to the customer.

C. Quantity discounts for similar product are as stated on the Standard Price List and Discount Schedule.

D. Lead times are as stated on the Parker Precision Fluidics website.

E. The Standard Price List and Discount Schedule are subject to change.

F. All price quotations are valid for a period of 90 days.

Payment and Credit Terms

A. Terms for orders are 1/10, 2/30 net 30 as noted below:

1. For invoices dated between the 1st and 15th, payments must be received by the 25th of the month.
2. For invoices dated between the 16th and 31st, payments must be received by the 10th of the following month.

B. The above payment terms and discount are available to all customers with established credit.

C. Parker Precision Fluidics runs a monthly credit check on all customers.

Order Policies

A. Order Rescissel: Standard Product: A 20% rescissel fee will be incurred unless a formal change order is received at least thirty (30) days prior to scheduled shipment.

B. Custom Product: A 20% rescissel fee will be incurred unless a formal change order is received at least thirty (30) days prior to scheduled shipment due to unique component lead time.

C. Order Expedite: Customer requesting an expedited delivery of five (5) weeks or less of the quoted standard lead time will be subject to a charge equal to 20% of the amount being expedited.

D. Order Cancellations: Standard Product - A 20% cancellation fee will be incurred unless a formal change order is received at least thirty (30) days prior to scheduled shipment.

E. Customer Product – Cancellations of custom product are subject to a 20% cancellations fee plus the cost of all work in process and the cost of any material unique to that order.

Warranties

A. Parker Precision Fluidics warrants its products against defective materials and workmanship under normal use for a period of one (1) year from the date of shipment to our customer.

B. This warranty does not apply to any product that has been subjected to misuse, accident, improper installation, improper application, or improper operation, nor does it apply to any product that has been repaired or altered by other than an authorized factory representative. There are no warranties either expressed or implied beyond those herein specifically described.

C. Parker Precision Fluidics – Seller warrants to Buyer that the products will be free, under normal use and maintenance, from defects in material and workmanship for a period of twelve (12) months from the manufacture date as made by the code, serial number, or rated hours of operation which ever occurs first, unless otherwise stated.

D. Warranty Repair: All products will be returned to the factory, replaced at no charge throughout the warranty period, at the buyer's request to receive the account. The balance of the warranty will remain in effect and no other warranty will be issued.

E. Warranty Item(s) costing less than $75 will not be repaired – credit will be issued upon receipt of item.

F. Non-Warranty Repair Charges: Non-warranty repairs are not available. A fee of $500, a standard analysis which includes visual inspection, determination of cause, and failure analysis report end customer information at the time of order. Orders will not be processed by Parker Precision Fluidics until such information is provided.

G. Customer Product: Returns of custom product are subject to a 20% cancellations fee plus the cost of all work in process and the cost of any material unique to that order.

Return Materials Authorizations

A. Hazardous Materials: All products returned must be free of hazardous materials. Return of any product exposed to hazardous material will not be accepted.

B. You must obtain a Return Material Authorization (RMA) number in advance from Parker Precision Fluidics in order that we may process your returned equipment. Material will not be accepted unless an RMA number is assigned and is clearly marked on all incoming packages and associated paperwork. RMA numbers expire 30 days after date of issue. Items returned without authorization or after 30 days of issuance will be returned to the customer prepaid.

C. This policy has been set for our mutual protection in that it greatly reduces the possibility of mislabeled returns. Please call our Customer Service Department at 1-800-925-2857 to obtain an RMA number. To be prepared to follow the following information when calling:

- Customer Name, Address & Phone Number
- Contact Name
- Shipping To & B/L Address
- Reason for Return & Failure Symptoms if applicable
- Part Number, Quantity & Date Code
- Purchase Order Numbers (Note: A Purchase Order Number is required for products returned under warranty. PO number to be used as tracking Vehicle only)

D. All products that are shipped to the factory for Warranty repair will be shipped at the Customer’s expense and will be returned to the Customer at no charge via Parker Precision Fluidics Division’s standard shipping method. Products have shipped to the factory on a freight collect basis will not be accepted. Customers may specify preferred method of shipment. Product will then be shipped back to the customer on a freight collect basis.
WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems assuring that all performance, safety and warning requirements of the application are met.

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