P1M Series
Swing Clamp
Extra Low Profile
Pneumatic Cylinder

Catalog AU08-0978/NA
May, 2003

- 32, 40 and 50mm Bore Sizes
- Short Overall Length
- 90° Clamping Rotation
- Right Hand or Left Hand Rotation
- Flexible Porting
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.

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# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features and Benefits</td>
<td>2</td>
</tr>
<tr>
<td>How to Order Code</td>
<td>3</td>
</tr>
<tr>
<td>Cylinder Specifications</td>
<td>4</td>
</tr>
<tr>
<td>Flexible Porting Options</td>
<td>5</td>
</tr>
<tr>
<td>Performance Data</td>
<td>6</td>
</tr>
<tr>
<td>Custom Arm Sizing</td>
<td>7</td>
</tr>
<tr>
<td>Dimensional Specifications, Head Ported</td>
<td>8</td>
</tr>
<tr>
<td>Dimensional Specifications, Head and Cap Ported</td>
<td>9</td>
</tr>
<tr>
<td>Dimensional Specifications, Cap Radial Ported</td>
<td>10</td>
</tr>
<tr>
<td>Dimensional Specifications, Cap Rear Face Ported</td>
<td>11</td>
</tr>
<tr>
<td>Dimensional Specifications, Clamp Arm Mount</td>
<td>12</td>
</tr>
<tr>
<td>Dimensional Specifications, Rear Flange Mount</td>
<td>13</td>
</tr>
<tr>
<td>Dimensional Specifications, Rear Flange and Clamp Arm Mount</td>
<td>14</td>
</tr>
<tr>
<td>Mechanical Accessories</td>
<td>15</td>
</tr>
<tr>
<td>Sensors, Electrical Specifications</td>
<td>16</td>
</tr>
<tr>
<td>Safety Guidelines</td>
<td>18</td>
</tr>
<tr>
<td>Manufacturing Locations</td>
<td>19</td>
</tr>
<tr>
<td>Offer of Sale</td>
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Parker is pleased to announce the addition of the P1M Swing Clamp Cylinder to the P1M Series product line. The P1M Swing Clamp Cylinder incorporates several innovative features including: 3-piece bolted construction, internal transfer tube, long bearing head option standard, bumpers standard, outboard rotating guide mechanism, and recessed sensor grooves. The combination of these features, in addition to maintaining the smallest dimensional envelope possible, make the P1M Swing Clamp Cylinder ideal for applications that require a compact design and superior clamping capability.
How to Order P1M Series Swing Clamp Cylinders

P 1 M 0 3 2 C H F M C 6 M 0 2 0

Pneumatic Actuators
Series

Bore Size
Cylinder Style
Cylinder Option
Function
Piston Rod & Bearings
Rod Threads
Port Type & Location
Stroke in mm ††

032 32mm
040 40mm
050 50mm

C Basic, no mounting
H Rear Flange*
K Clamp Arm*
L Rear Flange & Clamp Arm*

H Swing Clamp
J Swing Clamp Special (MTO) †

F Right Hand Rotation
L Left Hand Rotation

B No Magnet, Bumpers, Standard Seals
F No Magnet, Bumpers, Fluorocarbon Seals +
M Magnetic Piston, Bumpers, Std. Seals
V Magnetic Piston, Bumpers, Fluorocarbon Seals +

C Chrome Plated Carbon Steel

BSPP “G” Threads
G Head & Cap Radial
H Both in Head
J Both in Cap Radial
K Both in Cap Axial

NPT Threads
N Head & Cap Radial
M Both in Head
L Both in Cap Radial
P Both in Cap Axial

BSPT “R” Threads
Q Head & Cap Radial
R Both in Head
S Both in Cap Radial
T Both in Cap Axial

6 Metric Female
3 Special**

* Cylinder with mounting fitted
** Designator # 3 should be selected for special rod ends only. When selecting this option, please provide rod style (male or female), thread pitch, thread depth, and wrench flat dimension.
*** Both Ports Head NPT is the standard porting arrangement for this cylinder. Alternate porting arrangements are available at an additional cost.
+ Bumpers for this option are polyurethane. Piston, rod and body end seals are fluorocarbon. Please review the following specification page for additional information.
† Designator J should be selected for cylinders that require a special option not covered in catalog.
†† See specification table for stroke lengths available per a given bore size.

Seal Kit Part Numbers

<table>
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<th>Class 5</th>
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<tr>
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Service kits of expendable parts for fluid power cylinders are stocked in principal industrial locations across the U.S.A. and other countries. For prompt delivery and complete information, contact your nearest distributor.
Cylinder Specifications

- **Bore Sizes:** 32, 40 and 50mm
- **Maximum Operating Pressure:** 10 Bar or 145 PSI
- **Standard Operating Temperature:** -20°C to +80°C or -4°F to +176°F
- **Optional High Temperature:** -10°C to +121°C or +14°F to +250°F

Material Specifications

- **Piston Rod:** Hard Chrome Plated Steel, 100,000 PSI Yield
- **Piston Rod Bearing:** Multilayer PTFE with Steel Backing
- **Outboard Rotating Mechanism Cover:** 2011 T3 Aluminum
- **End Covers:** Black Anodized Aluminum
- **End Cover Fasteners:** Zinc Plated Carbon Steel
- **Cylinder Body:** Clear Anodized Aluminum
- **O-Rings:** Nitrile Rubber, NBR
- **Piston:** Aluminum Alloy
- **Piston Seal:** Nitrile Rubber, NBR
- **Magnet:** Plastic Coated Magnetic Material
- **Bumpers:** Polyurethane

**High Temperature Seal Option Material**

- **End Cover O-Rings:** Fluorocarbon, FPM
- **Piston Rod Seal:** Fluorocarbon, FPM
- **Piston Seal:** Fluorocarbon, FPM

*Option intended for limited exposure to temperatures over 80°C, or 176°F. Option is primarily for applications which subject the cylinder to fluids and or chemicals that have an adverse effect on external seals. If continued exposure to elevated temperatures is required, please consult the Cylinder Division for alternative options.*

### Specifications

<table>
<thead>
<tr>
<th>Bore, mm</th>
<th>Rotary Stroke, mm</th>
<th>Clamp Stroke, mm</th>
<th>Allowable Moment, N-m (ft-lbs)</th>
<th>Degree of Non-Rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>15</td>
<td>10 / 20</td>
<td>27 (20) 47 (35) 107 (79)</td>
<td>+/- 1.0°</td>
</tr>
<tr>
<td>40</td>
<td>19</td>
<td>20 / 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
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</tbody>
</table>

### Clamp Forces, N (lbs)

<table>
<thead>
<tr>
<th>Bore, mm</th>
<th>Rod Dia, mm</th>
<th>Net Area, cm²</th>
<th>Operating Pressure, MPa (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.2 (29)</td>
<td>0.4 (58)</td>
<td>0.6 (87)</td>
</tr>
<tr>
<td>32</td>
<td>6.03</td>
<td>121 (27) 241 (54) 362 (81) 483 (108) 603 (136)</td>
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<tr>
<td>50</td>
<td>16.49</td>
<td>330 (74) 660 (148) 990 (222) 1319 (297) 1649 (371)</td>
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</tr>
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</table>

### Cylinder Weights, g (lbs)

<table>
<thead>
<tr>
<th>Bore, mm</th>
<th>Clamp Stroke, mm</th>
<th>Basic Mount</th>
<th>Clamp Arm Mount</th>
<th>Rear Flange Mount</th>
<th>Arm &amp; Flange Mount</th>
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</thead>
<tbody>
<tr>
<td>32</td>
<td>10</td>
<td>600 (1.32) 691 (1.52) 664 (1.46) 755 (1.66)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>10</td>
<td>673 (1.48) 764 (1.68) 736 (1.62) 827 (1.82)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>10</td>
<td>700 (1.54) 791 (1.74) 782 (1.72) 873 (1.92)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>20</td>
<td>800 (1.76) 891 (1.96) 882 (1.94) 973 (2.14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>20</td>
<td>1355 (2.98) 1527 (3.36) 1500 (3.30) 1673 (3.68)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>20</td>
<td>1736 (3.82) 1909 (4.20) 1882 (4.14) 2055 (4.52)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
P1M Series Swing Clamp Flexible Porting Options

Both Ports Head*

To retract cylinder, apply air to port #2.
To extend cylinder, apply air to port #4.

* Both Ports Head (NPT) is the standard porting configuration for the P1M Swing Clamp Cylinder. Alternate porting options are available at an additional cost.

Both Ports Cap

Both Ports Cap Face

Head and Cap Ported

Right Hand (Clockwise) Clamping Rotation

Left Hand (Counter-Clockwise) Clamping Rotation
Guidelines for Custom Clamp Arms

The following graph represents maximum clamp arm lengths per a given bore and operating pressure. Care should be taken not to exceed maximum operating limits outlined in this graph.

The following graph represents maximum operating speeds per a given inertia moment when incorporating a custom clamp arm. Exceeding the parameters outlined in the graph will lead to internal cylinder component damage. Please refer to the following page for examples and formulas when designing the clamp arm to be applied.
Please use the following formulas and sizing examples when determining what style of clamp arm will best suit your application requirements.

1) Round Bar (Asymmetric)
   Clamping arm is positioned 90° degrees to the piston rod assembly, and is fixed at or near the end of the arm.

   \[
   I = m \left( \frac{L^2}{3} + \frac{D^2}{16} \right)
   \]

2) Round Bar (Symmetric)
   Clamping arm is positioned 90° degrees to the piston rod assembly, and is fixed at the center of the arm.

   \[
   I = m \left( \frac{L^2}{12} + \frac{D^2}{16} \right)
   \]

3) Rectangular Bar (Asymmetric)
   Clamping arm is positioned 90° degrees to the piston rod assembly, and is fixed at or near the end of the arm.

   \[
   I = m \left( \frac{L^2}{3} + \frac{W^2}{12} \right)
   \]

4) Rectangular Bar (Symmetric)
   Clamping arm is positioned 90° degrees to the piston rod assembly, and is fixed at the center of the arm.

   \[
   I = m \left( \frac{L^2 + W^2}{12} \right)
   \]

5) Rectangular Bar with Bolt
   Clamping arm is positioned 90° degrees to the piston rod assembly, and is fixed at or near the end of the arm.

   \[
   I = m_1 \left( \frac{L_1^2}{3} + \frac{D_1^2}{16} \right) + m_2 \left( \frac{L_2^2}{3} + \frac{W^2}{12} \right)
   \]

6) Round Bar with Sphere
   Clamping arm is positioned 90° degrees to the piston rod assembly, and is fixed at or near the end of the arm.

   \[
   I = m_1 \left( \frac{L_1^2}{3} + \frac{D_1^2}{16} \right) + m_2 \left( \frac{2r^2}{5} + L^2 \right)
   \]
### Head Ported Dimensions

<table>
<thead>
<tr>
<th>Bore</th>
<th>AF</th>
<th>BG1</th>
<th>BG2</th>
<th>E</th>
<th>E1</th>
<th>E2</th>
<th>EE BSPP</th>
<th>EE BSPT</th>
<th>EE NPTF</th>
<th>HL</th>
<th>I12</th>
<th>I91</th>
<th>I92</th>
<th>KF</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>18</td>
<td>46.5</td>
<td>17</td>
<td>48</td>
<td>56</td>
<td>24</td>
<td>G 1/8</td>
<td>1/8</td>
<td>1.1</td>
<td>9</td>
<td>5.5</td>
<td>13.5</td>
<td>4</td>
<td>M10x1.5</td>
</tr>
<tr>
<td>40</td>
<td>18</td>
<td>39</td>
<td>17.5</td>
<td>56</td>
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<td>28</td>
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<td>1/8</td>
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<td>9</td>
<td>5.5</td>
<td>10</td>
<td>4</td>
<td>M10x1.5</td>
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<tr>
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<td>47.5</td>
<td>23.5</td>
<td>67</td>
<td>74.5</td>
<td>33.5</td>
<td>G 1/8</td>
<td>1/8</td>
<td>2</td>
<td>12</td>
<td>5.5</td>
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*Both Ports Head (NPT) is the standard porting configuration for the P1M Swing Clamp Cylinder. Alternate porting options are available at an additional cost.*
Head and Cap Ported Dimensions

<table>
<thead>
<tr>
<th>Bore</th>
<th>AF</th>
<th>BG1</th>
<th>BG2</th>
<th>E</th>
<th>E1</th>
<th>E2</th>
<th>EE BSPP</th>
<th>EE BSPT</th>
<th>EE NPTF</th>
<th>EE1</th>
<th>EE2</th>
<th>HL</th>
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<td>Rc 1/8</td>
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<table>
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<th>PL</th>
<th>PM</th>
<th>R</th>
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<th>RT</th>
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<th>WH</th>
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Cap Radial Ported Dimensions

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<th>BG2</th>
<th>E</th>
<th>E1</th>
<th>E2</th>
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<th>EE BSPT</th>
<th>EE NPTF</th>
<th>EE1</th>
<th>HL</th>
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<th>I91</th>
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<td>G 1/8</td>
<td>Rc 1/8</td>
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<td>G 1/8</td>
<td>Rc 1/8</td>
<td>1/8</td>
<td>1.5</td>
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</table>
Cap Rear Face Ported Dimensions

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<th>BG2</th>
<th>E</th>
<th>E1</th>
<th>E2</th>
<th>EE</th>
<th>EE1</th>
<th>HL</th>
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<th>I91</th>
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<th>VD</th>
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## Clamp Arm Mount Dimensions

<table>
<thead>
<tr>
<th>Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>T9</th>
<th>Z9</th>
<th>T8</th>
<th>Z8</th>
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<table>
<thead>
<tr>
<th>Bore</th>
<th>Head and Cap Ported</th>
<th>Cap Radial Ported</th>
<th>Cap Rear Face Ported</th>
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<tbody>
<tr>
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### Rear Flange Mount Dimensions

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<th>FB</th>
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<th>R</th>
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</table>

Rear Flange Mounting Kits can be ordered assembled to the cylinder or separately as needed. Please refer to page 15 for proper rear flange mounting kits associated with a given bore size.

### Dimensions Table

<table>
<thead>
<tr>
<th>Bore</th>
<th>Head Ported Only</th>
<th>Head and Cap Ported</th>
<th>Cap Radial Ported</th>
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### Rear Flange and Clamp Arm Mount Dimensions

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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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<th>MF</th>
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<th>TF</th>
<th>UF</th>
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<td>67</td>
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<td>145.5</td>
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<td>154.5</td>
<td>92.5</td>
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</tbody>
</table>

### 32mm Bore Assembly

To disassemble the front end cover, the rod cover must first be removed. To do this the ring nut must be unscrewed (right-hand thread) using the spanner and gland wrench shown to the left. Order each component separately.
Clamp Arm Mounting Kit 32, 40, and 50mm Bore

<table>
<thead>
<tr>
<th>Bore, mm</th>
<th>Part Number</th>
<th>Fastener Torque</th>
<th>N-m</th>
<th>Inch-lbs</th>
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<tbody>
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<td>32</td>
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<td>70 - 88</td>
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<td>L0785600000</td>
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Component Identification

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<tr>
<th>Item Number</th>
<th>Part Description</th>
<th>Material</th>
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<tr>
<td>1</td>
<td>Clamp Arm</td>
<td>Aluminum</td>
</tr>
<tr>
<td>2</td>
<td>Clamp Bolt</td>
<td>Steel</td>
</tr>
<tr>
<td>3</td>
<td>Hex Jam Nut</td>
<td>Steel</td>
</tr>
<tr>
<td>4</td>
<td>Socket Head Cap Screw</td>
<td>Steel</td>
</tr>
<tr>
<td>5</td>
<td>Lock Washer</td>
<td>Steel</td>
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</tbody>
</table>

Note: To remove or install the arm on the piston rod, use a wrench to secure the arm while loosening or tightening the socket head cap screw. Do not secure any other part of the cylinder.

Rear Flange Mount Kit 32, 40, and 50mm Bore

<table>
<thead>
<tr>
<th>Bore, mm</th>
<th>Part Number</th>
<th>Fastener Torque</th>
<th>N-m</th>
<th>Inch-lbs</th>
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<td>P1M-4LMB</td>
<td>3.6 - 4.0</td>
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<td>8.0 - 9.0</td>
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Component Identification

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<tr>
<th>Item Number</th>
<th>Part Description</th>
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<tr>
<td>1</td>
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<td>Aluminum</td>
</tr>
<tr>
<td>2</td>
<td>Socket Head Cap Screw</td>
<td>Steel</td>
</tr>
</tbody>
</table>
Solid State Sensors

Type ........................................ Electronic
Output Function .......................... Normally Open
Switching Output ........................ PNP/NPN
Operating Voltage ....................... 5 - 30VDC
Continuous Current ..................... 200 mA
Response Sensitivity .................... 2.8 mT
Switching Frequency ................... 5 KHz
Power Consumption ..................... 10 mA
Voltage Drop ............................. 2 V
Ripple ..................................... 10% of Operating Voltage
Hysteresis ................................. 1.5 mm
Repeatability ............................. 0.1 mm
EMC ......................................... EN 60 947-5-2
Short-circuit Protection ......... Yes
Power-up Pulse Suppression ... Yes
Reverse Polarity Protection .... Yes
Enclosure Rating ...................... IP 67
Shock and Vibration Stress ...... 30g, 11 ms, 10 to 55 Hz, 1 mm
Ambient Temperature Range ... -25° to +75°C (-13° to 167°F)
Housing Material ...................... PA 12, Black
Connector Cable ....................... PVC
Connector ................................. PUR cable w/8 mm

Reed Sensors

Type ........................................ Reed
Output Function .......................... Normally Open
Output Voltage ......................... 10 - 120 VAC
10 - 30 VDC
Continuous Current .................. 100 mA
Response Sensitivity ................ 2.5 mT
Switching Frequency .................. 400 Hz
Voltage Drop ............................. 3 V
Ripple ..................................... 10% of Operating Voltage
Hysteresis ................................. 1.5 mm
Repeatability ............................ 0.2 mm
EMC ......................................... EN 60 947-5-2
Reverse Polarity Protection .... Yes
Enclosure Rating ...................... IP 67
Shock and Vibration Stress ...... 30g, 11 ms, 10 to 55 Hz, 1 mm
Ambient Temperature Range ... -25° to +75°C (-13° to 167°F)
Housing Material ...................... PA 12, Black
Connector Cable ....................... PVC
Connector ................................. PUR cable w/8 mm connector

Contact suppression is strongly recommended for reed switch applications with inductive loads (solenoids) or cable lengths in excess of 5 m (16.4 ft). Reed switches exhibit a 3V voltage drop. This voltage drop will be cumulative for switches in series; e.g., 12 V for 4 switches.

Sensor Specifications

Solid State - Wiring Connection

<table>
<thead>
<tr>
<th>Pin</th>
<th>Wire</th>
<th>Function</th>
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<td>5-30 VDC</td>
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<tr>
<td>2</td>
<td>Black</td>
<td>Output signal</td>
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<tr>
<td>3</td>
<td>Blue</td>
<td>0V</td>
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Reed Sensor - Wiring Connection

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<th>Wire</th>
<th>Function</th>
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</thead>
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<td>10-120 VAC, 10-30 VDC</td>
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<td>2</td>
<td>Black</td>
<td>Output signal</td>
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<td>Blue</td>
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Sensor Part Number | Type | Wiring |
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<td>P8S-GPShX</td>
<td>PNP</td>
<td>.27m lead with connector</td>
</tr>
<tr>
<td>P8S-GPFLX</td>
<td>PNP</td>
<td>3m flying leads</td>
</tr>
<tr>
<td>P8S-GPFTX</td>
<td>PNP</td>
<td>10m flying leads</td>
</tr>
<tr>
<td>P8S-GNShX</td>
<td>NPN</td>
<td>.27m lead with connector</td>
</tr>
<tr>
<td>P8S-GNFLX</td>
<td>NPN</td>
<td>3m flying leads</td>
</tr>
<tr>
<td>P8S-GNFTX</td>
<td>NPN</td>
<td>10m flying leads</td>
</tr>
</tbody>
</table>
**Solid State Sensors**

- **Type**: Electronic
- **Output Function**: Normally Open
- **Switching Output**: PNP/NPN
- **Operating Voltage**: 10 - 30VDC
- **Continuous Current**: \( \leq 150 \text{ mA} \)
- **Response Sensitivity**: 3 mT
- **Switching Frequency**: 50Hz
- **Power Consumption**: 15 mA
- **Voltage Drop**: \( \leq 2 \text{ V} \)
- **Ripple**: \( \leq 10\% \) of Operating Voltage
- **Delay Time (24V)**: Approx. 20 ms
- **Time Delay before Availability**: \( \leq 2 \text{ ms} \)
- **Hysteresis**: \( \leq 1.5 \text{ mm} \)
- **Repeatability**: \( \leq 0.2 \text{ mm} \)
- **EMC**: EN 60 947-5-2
- **Short-circuit Protection**: Yes
- **Power-up Pulse Supression**: Yes
- **Reverse Polarity Protection**: Yes
- **Enclosure Rating**: IP 67
- **Shock and Vibration Stress**: 30g, 11ms, 10 to 55 Hz, 1 mm
- **Ambient Temperature Range**: -25° to +75°C (-13° to 167°F)
- **Housing Material**: PA 12, Black
- **Connector Cable**: PVC
- **Connector**: PUR cable w/8 mm connector

**Reed Sensors**

- **Type**: Reed
- **Output Function**: Normally Open
- **Output Voltage**: 10 - 30 VAC\(^*\)
- **Continuous Current**: \( \leq 100 \text{ mA} \)
- **Response Sensitivity**: 2.5 mT
- **Switching Frequency**: 400 Hz
- **Voltage Drop**: \( \leq 3 \text{ V} \)
- **Ripple**: \( \leq 10\% \) of Operating Voltage
- **Delay Time (24V)**: Approx. 20 ms
- **Time Delay before Availability**: \( \leq 2 \text{ ms} \)
- **Hysteresis**: \( \leq 1.5 \text{ mm} \)
- **Repeatability**: \( \leq 0.2 \text{ mm} \)
- **EMC**: EN 60 947-5-2
- **Reverse Polarity Protection**: Yes
- **Enclosure Rating**: IP 67
- **Shock and Vibration Stress**: 30g, 11ms, 10 to 55 Hz, 1 mm
- **Ambient Temperature Range**: -25° to +75°C (-13° to 167°F)
- **Housing Material**: PA 12, Black
- **Connector Cable**: PVC
- **Connector**: PUR cable w/8 mm connector

\(^*\)8mm connector rated for 75 VAC max.
Parker Safety Guide for Selecting and Using Hydraulic, Pneumatic Cylinders and Their Accessories

WARNING: FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF CYLINDERS AND THEIR RELATED ACCESSORIES CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

Before selecting or using Parker cylinders or related accessories, it is important that you read, understand and follow the following safety information.

User Responsibility
Due to very wide variety of cylinder applications and cylinder operating conditions, Parker does not warrant that any particular cylinder is suitable for any specific application. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The pneumatic cylinders outlined in this catalog are designed to Parker’s design guide lines and do not necessarily meet the design guide lines of other agencies such as American Bureau of Shipping, ASME Pressure Vessel Code etc. The user, through its own analysis and testing, is solely responsible for:

- Making the final selection of the cylinders and related accessories.
- Determining if the cylinders are required to meet specific design requirements as required by the Agency(s) or industry standards covering the design of the user’s equipment.
- Assuring that the user’s requirements are met, OSHA requirements are met, and safety guidelines from the applicable agencies such as but not limited to ANSI are followed and that the use presents no health or safety hazards.
- Providing all appropriate health and safety warnings on the equipment on which the cylinders are used.

Seals
Part of the process of selecting a cylinder is the selection of seal compounds. Before making this selection read the Operating Fluids and Seals section in this catalog or in the Application Engineering Data section of the current 0900P series catalog, or contact our engineering department.

The application of cylinders may allow fluids such as cutting fluids, wash down fluids etc. to come in contact with the external area of the cylinder. These fluids may attack the piston rod wiper and or the primary seal and must be taken into account when selecting and specifying seal compounds.

Dynamic seals will wear. The rate of wear will depend on many operating factors. Wear can be rapid if a cylinder is mis-aligned or if the cylinder has been improperly serviced. The user must take seal wear into consideration in the application of cylinders.

Cylinder Modifications or Repairs
Cylinders as shipped from the factory are not to be disassembled and or modified. If cylinders require modifications, these modifications must be done at Parker locations or by Parker certified facilities. It is allowed to disassemble cylinders for the purpose of replacing seals or seal assemblies. However, this work must be done by strictly following all the instructions provided with the seal kits.
REGIONAL PLANTS

California
221 Helicopter Circle
Corona, CA 92880
Tel.: (909) 280-3800
Fax: (909) 280-3808
Fax: (800) 869-9886

Connecticut
80 Shaker Road
Enfield, CT 06082
Tel.: (860) 749-2215
Fax: (800) 323-0105

Georgia
1300 Six Flags Road
Lithia Springs, GA 30122
Tel.: (770) 819-3400
Fax: (800) 437-3498

Indiana
Goodland Plant
715 South Iroquois Street
Goodland, IN 47948
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Fax: (800) 328-8120

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900 Plymouth Road
Plymouth, MI 48170
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Fax: (734) 455-1007

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Akron, OH 44310
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Fax: (330) 253-4883

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Offer of Sale

The items described in this document and other documents or descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer (“Buyer”) shall be governed by all of the Terms and Conditions stated herein. Buyer’s offer, when communicated to Parker Hannifin Corporation, its subsidiary or an authorized distributor (“Seller”) verbally or in writing, shall constitute acceptance of this offer.

1. Terms and Conditions of Sale: All descriptions, quotations, proposals, offers, acknowledgments, acceptance and sales of Seller’s products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer’s acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller’s acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer’s assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer’s offer. Acceptance of Seller’s products shall in all events constitute such assent.

2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 10 days after Buyer’s receipt of the shipment.

3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller’s plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller’s delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from date of shipment from Parker Hannifin Corporation. THIS WARRANTY COMPRIS ES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.

NOTwithstanding the foregoing, there are no warranties whatsoever on items built or acquired wholly or partially to buyer’s designs or specifications.

5. Limitation of Remedy: SELLER’S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER’S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller’s discretion, and shall be upon such terms and conditions as Seller may require.

7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller’s property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer’s Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer, or any other items which become Buyer’s property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller’s possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity for Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secret or similar right as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter “Intellectual Property Rights”). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller’s obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller’s sole and exclusive liability and Buyer’s sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller’s obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter “Events of Force Majeure”). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller’s control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.
About Parker Hannifin Corporation
Parker Hannifin is a leading global motion-control company dedicated to delivering premier customer service. A Fortune 500 corporation listed on the New York Stock Exchange (PH), our components and systems comprise over 1,400 product lines that control motion in some 1,000 industrial and aerospace markets. Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, and electromechanical motion-control solutions. Our company has the largest distribution network in its field, with over 7,500 distributors serving nearly 400,000 customers worldwide.

Parker’s Charter
To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods. More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

Product Information
North American customers seeking product information, the location of a nearby distributor, or repair services will receive prompt attention by calling the Parker Product Information Center at our toll-free number: 1-800-C-PARKER (1-800-272-7537). In Europe, call 00800-C-PARKER-H (00800-2727-5374).

The Aerospace Group is a leader in the development, design, manufacture and servicing of control systems and components for aerospace and related high-technology markets, while achieving growth through premier customer service.

The Climate & Industrial Controls Group designs, manufactures and markets system-control and fluid-handling components and systems to refrigeration, air-conditioning and industrial customers worldwide.

The Fluid Connectors Group designs, manufactures and markets rigid and flexible connectors, and associated products used in pneumatic and fluid systems.

The Seal Group designs, manufactures and distributes industrial and commercial sealing devices and related products by providing superior quality and total customer satisfaction.

The Hydraulics Group designs, produces and markets a full spectrum of hydraulic components and systems to builders and users of industrial and mobile machinery and equipment.

The Filtration Group designs, manufactures and markets quality filtration and clarification products, providing customers with the best value, quality, technical support, and global availability.

The Automation Group is a leading supplier of pneumatic and electromechanical components and systems to automation customers worldwide.

The Instrumentation Group is a global leader in the design, manufacture and distribution of high-quality critical flow components for worldwide process instrumentation, ultra-high-purity, medical and analytical applications.

Swing Clamp Cylinder
P1M Series

Cylinder AU08-0978/NA
Parker Hannifin Corporation
Des Plaines, IL USA
Owen Sound, Ontario Canada