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Actuator Products – Round Body Cylinders

SR Series

- 304 stainless steel cylinder body, non repairable construction
- Aluminum heads and caps, Delrin heads and caps are optional
- 12 bore sizes — 5/16" through 3" (see dimensional tables for SRM and SRD/SRDM exclusions).
- Stainless steel piston rods are standard up to 1.50" bore
- 28 standard mounting styles (not all available on SRM and SRD/SRDM – see table on following page)
- Single and double acting
- Adjustable cushions optional on both ends

Operating information

<table>
<thead>
<tr>
<th>Operating pressure:</th>
<th>250 PSIG for SR and SRM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100 PSIG for SRD/SRDM</td>
</tr>
<tr>
<td>Temperature range:</td>
<td>-10°F to 165°F for SR</td>
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<tr>
<td></td>
<td>14°F to 140°F for SRM</td>
</tr>
<tr>
<td></td>
<td>32°F to 160°F for SRD/SRDM</td>
</tr>
<tr>
<td>Filtration requirements:</td>
<td>40 micron, dry filtered air</td>
</tr>
</tbody>
</table>

For technical information see CD

Ordering information

<table>
<thead>
<tr>
<th>Bore Size 1</th>
<th>C</th>
<th>D</th>
<th>SR</th>
<th>B</th>
<th>V</th>
<th>C</th>
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<td></td>
<td></td>
</tr>
<tr>
<td>1.75 1-3/4&quot;</td>
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<td></td>
<td></td>
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<td></td>
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</tr>
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<td>2.00 2&quot;</td>
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</tbody>
</table>

| Cushion Head 2 | Use “C” only when cushion head is required. |
| Double Rod     | Use “K” only when double rod is required. Available on DX and DXH mounting only. |

<table>
<thead>
<tr>
<th>Series</th>
</tr>
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<tbody>
<tr>
<td>SR Standard cylinder</td>
</tr>
<tr>
<td>SRM With magnetic piston</td>
</tr>
<tr>
<td>SRD With delrin caps</td>
</tr>
<tr>
<td>SRDM With delrin caps and magnetic piston</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Piston</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank No bumpers</td>
</tr>
<tr>
<td>B With bumpers 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mounting 1(^1)</th>
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</thead>
<tbody>
<tr>
<td>N, NR, NRP, P, R, RP, D, DP, DXP, DX, DXH, A, RA, AP, AR, BR, BRR, BFD, BRD, BFN, BFR, TR, TRN, TFR, TRD, TFD, TFN or TRF.</td>
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</table>

<table>
<thead>
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<th>Seals</th>
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<tr>
<td>Blank Standard seals</td>
</tr>
<tr>
<td>V Fluorocarbon seals 4</td>
</tr>
<tr>
<td>W Rod wiper</td>
</tr>
</tbody>
</table>

| Sensors | For sensors see page B296. |

1 Bore sizes and mounting styles are limited by series. See table on next page for availability.
2 Cushions not available on SRD/SRDM series.
3 Bumpers may increase cylinder length. Please reference catalog 0900P-E, page D37 for adders.
4 Fluorocarbon seals not available on SRM or SRDM series.
Non-Standard Rods

For non-standard rod dimensions, or undersized rod end threads, put a “3” in model number and describe the rod using the letters shown in the drawing. Specify CC, LE and A dimensions.

Mounting Style N
Nose Mount, Spring Return

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. strokes (in)</th>
<th>Max.. stroke (in)</th>
<th>SS rod std</th>
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</thead>
<tbody>
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<td>5/16&quot;</td>
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<td>•</td>
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<td>✓</td>
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<td>•</td>
<td>•</td>
<td>1/2, 1, 1-1/2, 2, 3, 4</td>
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<tr>
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<td>✓</td>
</tr>
<tr>
<td>7/8&quot;</td>
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<td>•</td>
<td>1/2, 1, 1-1/2, 2, 3, 4</td>
<td>6</td>
<td>✓</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
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<td>•</td>
<td>1/2, 1, 1-1/2, 2, 3, 4</td>
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<tr>
<td>1-1/4&quot;</td>
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<tr>
<td>1-1/2&quot;</td>
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<tr>
<td>2&quot;</td>
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<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Bore size</th>
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<th>B</th>
<th>C</th>
<th>CC</th>
<th>D</th>
<th>E</th>
<th>EE</th>
<th>J</th>
<th>KK</th>
<th>KM</th>
<th>V</th>
<th>W</th>
<th>X</th>
<th>ZJ</th>
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</thead>
<tbody>
<tr>
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<td>–</td>
<td>–</td>
<td>0.125</td>
<td>–</td>
<td>0.36</td>
<td>#10-32</td>
<td>–</td>
<td>#5-40 UNC</td>
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<td>0.25</td>
<td>0.75</td>
<td>1.12</td>
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<tr>
<td>7/16&quot;</td>
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<td>0.50</td>
<td>0.374</td>
<td>–</td>
<td>0.188</td>
<td>–</td>
<td>0.38</td>
<td>#10-32 0.19</td>
<td>3/8-24</td>
<td>0.05</td>
<td>0.31</td>
<td>0.94**</td>
<td>1.31</td>
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<td>0.62</td>
<td>0.437</td>
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<td>0.188</td>
<td>–</td>
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<td>0.50</td>
<td>0.81</td>
<td>0.499</td>
<td>–</td>
<td>0.250</td>
<td>–</td>
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<td>1/8 NPTF 0.19</td>
<td>1/4-28 0.09</td>
<td>0.44</td>
<td>1.69</td>
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<tr>
<td>7/8&quot;</td>
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<td>0.93</td>
<td>0.624</td>
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<td>0.250</td>
<td>–</td>
<td>0.62</td>
<td>1/8 NPTF 0.19</td>
<td>5/8-18 0.09</td>
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<td>1.84</td>
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<tr>
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<td>1.12</td>
<td>0.624</td>
<td>–</td>
<td>0.312</td>
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<td>1/8 NPTF 0.19</td>
<td>5/16-24 UNF</td>
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<td>0.62</td>
<td>1.56</td>
<td>2.06</td>
<td>2.31</td>
<td></td>
</tr>
<tr>
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<td>1.34</td>
<td>0.749</td>
<td>0.25</td>
<td>0.437</td>
<td>0.38</td>
<td>0.88</td>
<td>1/8 NPTF 0.25</td>
<td>3/4-16 0.09</td>
<td>0.88</td>
<td>1.81</td>
<td>2.66</td>
<td>2.78</td>
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<td></td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>0.75</td>
<td>1.56</td>
<td>0.749</td>
<td>0.25</td>
<td>0.437</td>
<td>0.38</td>
<td>0.88</td>
<td>1/8 NPTF 0.25</td>
<td>5/8-20 0.09</td>
<td>0.88</td>
<td>1.69</td>
<td>2.44</td>
<td>2.69</td>
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<td>1-3/4&quot;</td>
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<td>0.716</td>
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<td>1/4 NPTF 0.25</td>
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<td>0.625</td>
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<td>1.25</td>
<td>1/4 NPTF 0.31</td>
<td>1-1/4-120 UNF</td>
<td>1.19</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

▲ 5.66" for 1" stroke; 7.66" for 2" stroke; 8.91" for 3" stroke; 11.84" for 4" stroke.
* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract a half inch.
** For each 0.50" of stroke.

* Requires an S designation in model number.
## Actuator Products – Round Body Cylinders

### SR Series

### Mounting Style NR

- Nose Mount, Spring Return, Hex Rod

### Table: Bore Size and Stroke Specifications

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke (in)</th>
<th>Max. stroke (in)</th>
<th>SS rod std</th>
<th>ZJ</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>9/16&quot;</td>
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<td>6</td>
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<td>3/4&quot;</td>
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<td>1/2, 1-1/2, 2, 3, 4</td>
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<td>✔️</td>
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<tr>
<td>7/8&quot;</td>
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<td>✔️</td>
<td>1/2, 1-1/2, 2, 3, 4</td>
<td>6</td>
<td>✔️</td>
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<tr>
<td>1-1/16&quot;</td>
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<td>1/2, 1-1/2, 2, 3, 4</td>
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<td>✔️</td>
<td></td>
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<tr>
<td>1-1/4&quot;</td>
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<td>✔️</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>✔️</td>
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### Table: Bore Size Dimensions

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<th>B</th>
<th>C</th>
<th>CC</th>
<th>D</th>
<th>E</th>
<th>EE</th>
<th>J</th>
<th>KK</th>
<th>KM</th>
<th>V</th>
<th>W</th>
<th>X</th>
<th>ZJ</th>
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<tbody>
<tr>
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<td>0.50</td>
<td>–</td>
<td>0.374</td>
<td>0.25</td>
<td>0.188</td>
<td>3/16</td>
<td>–</td>
<td>#10-32</td>
<td>0.19</td>
<td>#10-32 UNF</td>
<td>3/8-24</td>
<td>0.05</td>
<td>0.56</td>
<td>0.94</td>
<td>1.56</td>
</tr>
<tr>
<td>9/16&quot;</td>
<td>0.50</td>
<td>–</td>
<td>0.437</td>
<td>0.25</td>
<td>0.188</td>
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<td>–</td>
<td>#10-32</td>
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<td>1.78</td>
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<td>0.499</td>
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<td>0.250</td>
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<td>–</td>
<td>1/8</td>
<td>NPTF</td>
<td>0.19</td>
<td>1/4-28 UNF</td>
<td>1/2-20</td>
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<td>1.69</td>
</tr>
<tr>
<td>7/8&quot;</td>
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<td>0.624</td>
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<td>0.250</td>
<td>1/4</td>
<td>–</td>
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<td>NPTF</td>
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<td>1/4-28 UNF</td>
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<tr>
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<td>0.624</td>
<td>0.25</td>
<td>0.312</td>
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<td>1.81</td>
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<td>1/8</td>
<td>NPTF</td>
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<td>1.69</td>
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<td>1.84</td>
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<td>0.500</td>
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<td>1.12</td>
<td>2.0</td>
</tr>
</tbody>
</table>

* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.
Actuator Products – Round Body Cylinders

SR Series

Mounting Style NRP
Pivot & Nose Mount, Spring Return, Hex Rod

<table>
<thead>
<tr>
<th>Bore size</th>
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<th>SRM</th>
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* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.

B82

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics
Mounting Style P
Pivot Mount, Spring Return

Bore sizes

- 5/16" *
- 7/16" *
- 3/4" *
- 9/16" *
- 7/8" *
- 1-1/16" *
- 1-1/4" *
- 1-1/2" *
- 1-3/4" *
- 2" *

* No mounting nuts

Bore sizes

- 5/16" *
- 7/16" *
- 3/4" *
- 9/16" *
- 7/8" *
- 1-1/16" *
- 1-1/4" *
- 1-1/2" *
- 1-3/4" *
- 2" *

* No mounting nuts

- 5/16" *
- 7/16" *
- 3/4" *
- 9/16" *
- 7/8" *
- 1-1/16" *
- 1-1/4" *
- 1-1/2" *
- 1-3/4" *
- 2" *

* No mounting nuts

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Bore sizes

- 5/16" *
- 7/16" *
- 3/4" *
- 9/16" *
- 7/8" *
- 1-1/16" *
- 1-1/4" *
- 1-1/2" *
- 1-3/4" *
- 2" *

* No mounting nuts

Bore sizes

- 5/16" *
- 7/16" *
- 3/4" *
- 9/16" *
- 7/8" *
- 1-1/16" *
- 1-1/4" *
- 1-1/2" *
- 1-3/4" *
- 2" *

* No mounting nuts

Bore sizes

- 5/16" *
- 7/16" *
- 3/4" *
- 9/16" *
- 7/8" *
- 1-1/16" *
- 1-1/4" *
- 1-1/2" *
- 1-3/4" *
- 2" *

* No mounting nuts

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6.34" for 1" stroke, 8.34" for 2" stroke, 9.59" for 3" stroke, 12.53" for 4" stroke
6.78" for 1" stroke, 8.78" for 2" stroke, 10.03" for 3" stroke, 12.97" for 4" stroke

* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract a half inch.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B83
Mounting Style R
Nose Mount, Spring Extended

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* No mounting nuts

▲ 7.11" for 1" stroke, 10.11" for 2" stroke, 12.34" for 3" stroke, 16.34" for 4" stroke.

* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.

** For each 1.00" of stroke.
Mounting Style RP
Pivot and Nose Mount, Spring Extended

Actuator Products – Round Body Cylinders

SR Series

Catalog PDN1000US
Parker Pneumatic
Richland, Michigan
www.parker.com/pneumatics

B85

Bore sizes
5/16” *
7/16”
3/4”

9/16” *
7/8”*
1-1/16”*
1-1/4”*
1-1/2”*
1-3/4”
2” *

* No mounting nuts

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8.05” for 1” stroke, 11.05” for 2” stroke, 13.28” for 3” stroke, 17.28” for 4” stroke*
8.50” for 1” stroke, 11.50” for 2” stroke, 13.72” for 3” stroke, 17.72” for 4” stroke*

* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.
# Parker Hannifin Corporation

## Pneumatic Division

Richland, Michigan

www.parker.com/pneumatics

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### Catalog PDN1000US

Parker Pneumatic

**B86**

### Actuator Products – Round Body Cylinders

**SR Series**

---

## Mounting Style D

**Nose Mount, Double Acting**

---

### Diagram

- **ZJ PLUS STROKE**
- **W**
- **V**
- **B DIA. PILOT**
- **KM MOUNTING NUT**
- **CC DIA.**
- **KK**
- **A**
- **DIA. PILOT**
- **WRENCH FLATS**
- **Q**
- **E**
- **V**
- **W**
- **WH**
- **Y**

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* No mounting nuts
Actuator Products – Round Body Cylinders

SR Series

Mounting Style DP
Pivot and Nose Mount, Double Acting, Pivot Pin

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<th>Max. stroke (in)</th>
<th>SS rod</th>
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Bore sizes
- 5/16"
- 7/16"
- 3/4"
- 1-1/16"
- 1-1/2"
## Mounting Style DXP

**Pivot & Nose Mount, Double Acting, No Pivot Pin**

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<th>SRDM</th>
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<th>B</th>
<th>CC</th>
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<td>–</td>
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Actuator Products – Round Body Cylinders

SR Series

Mounting Style DX
Threaded Both Ends, Double Acting

Bore size | SR | SRM | Std. stroke (in) | Max. stroke (in) | SS rod std | 7/16" | 9/16" | 3/4" | 7/8" | 1-1/16" | 1-1/4" | 1-1/2" | 2"
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
7/16" * | • | • | 1/2, 1, 1-1/2, 2, 3, 4 | 12 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔
9/16" * | • | • | 1/2, 1, 1-1/2, 2, 3, 4 | 12 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔
3/4" * | • | • | 1, 2, 3, 4, 5, 6, 8, 10 | 32 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔
7/8" * | • | • | 1, 2, 3, 4, 5, 6, 8, 10 | 32 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔
1-1/16" * | • | • | 1/2, 1, 1-1/2, 2, 2-1/2, 3, 4, 5, 6, 8, 10, 12 | 32 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔
1-1/4" * | • | • | 1, 2, 3, 4, 5, 6, 7, 8, 10, 12 | 32 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔
1-1/2" * | • | • | 1, 2, 3, 4, 5, 6, 8, 10, 12 | 32 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔
2" * | • | • | – | 32 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔

*Bore size | A | AA | B | C | CC | D | EE | KK | KM
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
7/16" | 0.50 | 0.74 | 0.437 | – | 0.188 | – | #10-32 | #10-32 UNF | 7/16-20 | 1.94 | 0.05 | 0.38 | 0.72 | 2.81
9/16" | 0.50 | 0.62 | 0.437 | – | 0.188 | – | #10-32 | #10-32 UNF | 7/16-20 | – | 0.06 | 0.38 | 0.78 | 2.75
3/4" | 0.50 | 0.86 | 0.624 | – | 0.250 | – | 1/8 NPTF | 1/4-28 UNF | 5/8-18 | 2.91 | 0.09 | 0.50 | 0.97 | 4.03
7/8" | 0.50 | 0.93 | 0.624 | – | 0.250 | – | 1/8 NPTF | 1/4-28 UNF | 5/8-18 | – | 0.09 | 0.50 | 0.97 | 3.84
1-1/16" | 0.50 | 1.12 | 0.624 | 0.12 | 0.312 | 0.25 | 1/8 NPTF | 5/16-24 UNF | 5/8-18 | – | 0.09 | 0.62 | 1.19 | 4.12
1-1/4" | 0.75 | 0.34 | 0.749 | 0.25 | 0.437 | 0.38 | 1/8 NPTF | 1/2-20 UNF | 3/4-16 | – | 0.09 | 0.88 | 1.62 | 5.12
1-1/2" | 0.75 | 1.56 | 0.749 | 0.25 | 0.437 | 0.38 | 1/8 NPTF | 7/16-20 UNF | 3/4-16 | 3.00 | 0.09 | 0.88 | 1.50 | 4.50
2" | 0.88 | 2.08 | 1.374 | 0.38 | 0.625 | 0.50 | 1/4 NPTF | 1/2-20 UNF | 1-1/4-12 | – | 0.12 | 1.19 | – | 6.06

* Available upon request. Please consult factory.
# Actuator Products – Round Body Cylinders
## SR Series

### Mounting Style KDX
Threaded Both Ends, Double Acting, Double Rod

![Diagram of Round Body Cylinders](image)

- **Bore sizes**
  - 7/16"*
  - 3/4"*

### Bore sizes

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>SRD</th>
<th>SRDM</th>
<th>Std. stroke (in)</th>
<th>Max. stroke (in)</th>
<th>SS rod</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>CC</th>
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<td>6</td>
<td>✓</td>
<td>0.50</td>
<td>0.62</td>
<td>0.437</td>
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<td>✓</td>
<td>0.50</td>
<td>1.12</td>
<td>0.624</td>
<td>0.312</td>
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<td>1.34</td>
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<td>0.88</td>
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### Bore sizes

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<th>KM</th>
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<tr>
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Mounting Style KDXH
Threaded Both Ends, Double Rod, Hollow Rod

### Bore Size Specifications

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<th>Std. Stroke (in)</th>
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<th>A</th>
<th>AA</th>
<th>AF</th>
<th>B</th>
<th>C</th>
<th>CC</th>
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<td>1.34</td>
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<td>0.75</td>
<td>1.56</td>
<td>0.250</td>
<td>0.749</td>
<td>0.25</td>
<td>0.437</td>
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### Mounting Style A
Nose Mount, Spring Return, Head Adjustable Stroke

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<th>AS</th>
<th>C</th>
<th>CC</th>
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<td></td>
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<tr>
<td>1-1/16&quot;</td>
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<td>•</td>
<td>1&quot; stroke adjusts 0-1&quot;</td>
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<td>✔ 0.50</td>
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<tr>
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### Bore Size Details

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Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B91
Mounting Style RA
Nose Mount, Spring Return, Cap Adjustable Stroke

<table>
<thead>
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<th>Bore size</th>
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<th>Max. stroke (in)</th>
<th>SS rod std</th>
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<th>AA</th>
<th>B</th>
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<tr>
<th>Bore size</th>
<th>KK</th>
<th>KM</th>
<th>SE</th>
<th>R</th>
<th>V</th>
<th>W</th>
<th>WH</th>
<th>X</th>
<th>ZJ</th>
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</thead>
<tbody>
<tr>
<td>1-1/16&quot;</td>
<td>1/4-28 UNF</td>
<td>5/8-18</td>
<td>0.50</td>
<td>–</td>
<td>0.09</td>
<td>0.53</td>
<td>0.97</td>
<td>2.69</td>
<td>3.78</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>5/16-24 UNF</td>
<td>5/8-18</td>
<td>0.50</td>
<td>0.12</td>
<td>0.09</td>
<td>0.50</td>
<td>–</td>
<td>2.56</td>
<td>4.03</td>
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<td>1-1/2&quot;</td>
<td>7/16-20 UNF</td>
<td>3/4-16</td>
<td>0.62</td>
<td>0.25</td>
<td>0.09</td>
<td>0.88</td>
<td>–</td>
<td>2.00</td>
<td>5.81</td>
</tr>
</tbody>
</table>
## Actuator Products – Round Body Cylinders

### SR Series

**Mounting Style AP**

Pivot Mount, Spring Return, Head Adjustable Stroke

![Diagram of Round Body Cylinders](image)

**Bore sizes**

<table>
<thead>
<tr>
<th>Size</th>
<th>3/4&quot;</th>
<th>1-1/16&quot;</th>
<th>1-1/2&quot;</th>
</tr>
</thead>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bore sizes**

- 3/4" stroke adjustment in 1" increments to 3".
- 1-1/16" stroke adjusts 0-1".
- 2-1/2" stroke adjusts 1-2".
- 3" stroke adjusts 2-3".

### Specifications

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke</th>
<th>Max. stroke (in)</th>
<th>SS rod std</th>
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<tbody>
<tr>
<td>3/4&quot;</td>
<td>0.50</td>
<td>0.86</td>
<td>0.250</td>
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<td>–</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>0.50</td>
<td>1.12</td>
<td>0.312</td>
<td>0.50</td>
<td>0.25</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>0.75</td>
<td>1.36</td>
<td>0.437</td>
<td>0.62</td>
<td>0.38</td>
</tr>
</tbody>
</table>

### Sketch Diagram

![Sketch Diagram of Round Body Cylinders](image)

**Bore sizes**

| KM      | KP     | L      | OP      | PP      | R      | RW      | TD      | UT      | X      | XJ      | ZJ      |
|---------|--------|--------|---------|---------|--------|---------|---------|---------|--------|---------|---------|---------|
| 3/4"    | 7/16-20 | 5/8-18 UNF | 0.34 | – | 0.62 | 0.19 | 0.19 | 0.250 | 0.75 | 1.69 | 3.65 | 3.93 |
| 1-1/16" | –      | 5/8-18 UNF | 0.34 | 0.25 | 0.62 | 0.12 | 0.25 | 0.250 | 0.75 | 1.56 | 3.97 | 4.25 |
| 1-1/2"  | 3/4-16 | –      | 0.50 | – | 0.81 | 0.25 | 0.25 | 0.375 | 1.00 | 2.00 | 4.31 | 4.69 |

---

**Catalog PDN1000US**

Parker Pneumatic

B93
### Mounting Style BRN

Rear Block Mount, Single Acting, Spring Return

![Diagram of Mounting Style BRN]

#### Bore size

<table>
<thead>
<tr>
<th>Size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke</th>
<th>Max. stroke</th>
<th>SS rod std</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>C</th>
<th>CC</th>
<th>D</th>
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</thead>
<tbody>
<tr>
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<td></td>
<td>1/2, 1, 2, 3, 4</td>
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<tr>
<td>3/4&quot;</td>
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<td>•</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
<td>0.75</td>
<td>0.81</td>
<td>0.499</td>
<td>0.26</td>
<td>0.250</td>
<td>0.22</td>
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<tr>
<td>1-1/16&quot;</td>
<td>•</td>
<td>•</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
<td>0.75</td>
<td>1.12</td>
<td>0.624</td>
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<td>0.312</td>
<td>0.25</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>•</td>
<td>•</td>
<td>1, 2, 3, 4</td>
<td>6</td>
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<td>1.56</td>
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<td>0.25</td>
<td>0.437</td>
<td>0.38</td>
</tr>
</tbody>
</table>

*To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.

### Additional Dimensions

- **DIA. PILOT**: 2 holes on a BC DIA. BOLT CIRCLE
- **WRENCH FLATS**: KM
- **HOLE**: X FOR EACH 1.00 OF STROKE

### Mounting Style BRR

Rear Block Mount, Single Acting, Spring Extend

![Diagram of Mounting Style BRR]

#### Bore size

<table>
<thead>
<tr>
<th>Size</th>
<th>E</th>
<th>EE</th>
<th>KK</th>
<th>KM</th>
<th>SR</th>
<th>SM</th>
<th>V</th>
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<th>X</th>
<th>ZJ</th>
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</thead>
<tbody>
<tr>
<td>7/16&quot;</td>
<td>0.75</td>
<td>#10-32</td>
<td>#10-32 UNF</td>
<td>3/8-24</td>
<td>0.35</td>
<td>1/8-28 UNF</td>
<td>1/2-20</td>
<td>0.44</td>
<td>0.09</td>
<td>0.62</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>1.00</td>
<td>1/4-20 UNF</td>
<td>3/4-16</td>
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<td>0.09</td>
<td>0.62</td>
<td>1.25</td>
<td>0.38</td>
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<td>0.250</td>
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<tr>
<td>1-1/16&quot;</td>
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<td>1/8 NPTF</td>
<td>15/16-24</td>
<td>5/8-18</td>
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<td>0.09</td>
<td>0.62</td>
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<td>2.81</td>
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<td>1-1/2&quot;</td>
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<td>1/4 NPTF</td>
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<td>3/4-16</td>
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<td>0.62</td>
<td>2.00</td>
<td>3.06</td>
<td>3.31</td>
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</table>

*To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.

### Additional Dimensions

- **DIA. PILOT**: 2 holes on a BC DIA. BOLT CIRCLE
- **WRENCH FLATS**: KM
- **HOLE**: X FOR EACH 1.00 OF STROKE

---

* Parker Hannifin Corporation
  Pneumatic Division
  Richland, Michigan
  www.parker.com/pneumatics
### Mounting Style BFD

**Front Block Mount, Double Acting**

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke (in)</th>
<th>Max. stroke (in)</th>
<th>SS rod std</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>BC</th>
<th>CC</th>
</tr>
</thead>
<tbody>
<tr>
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<td>•</td>
<td>•</td>
<td>1/2, 1, 1-1/2, 2, 2-1/2, 3, 4</td>
<td>4</td>
<td>✔</td>
<td>0.38</td>
<td>–</td>
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<td>0.125</td>
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<tr>
<td>7/16&quot;</td>
<td>•</td>
<td>•</td>
<td>1/2, 1, 1-1/2, 2, 3, 4</td>
<td>12</td>
<td>✔</td>
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<td>0.50</td>
<td>0.437</td>
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<td>3/4&quot;</td>
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<td>1/2, 1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
<td>0.75</td>
<td>0.81</td>
<td>0.624</td>
<td>1.00</td>
<td>0.250</td>
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<tr>
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<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
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<td>1.12</td>
<td>0.750</td>
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<td>0.312</td>
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<tr>
<td>1-1/2&quot;</td>
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<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
<td>1.25</td>
<td>1.56</td>
<td>1.00</td>
<td>1.75</td>
<td>0.437</td>
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<table>
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<th>CP</th>
<th>D</th>
<th>DA</th>
<th>DB</th>
<th>E</th>
<th>EE</th>
<th>F</th>
<th>FH</th>
<th>HP</th>
<th>J</th>
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<tbody>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>0.11</td>
<td>–</td>
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<td>0.41</td>
<td>0.59</td>
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<td>–</td>
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<tr>
<td>7/16&quot;</td>
<td>0.31</td>
<td>0.44</td>
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<td>#8-32</td>
<td>0.38</td>
<td>#10-32</td>
<td>0.31</td>
<td>0.44</td>
<td>0.19</td>
<td>–</td>
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<tr>
<td>3/4&quot;</td>
<td>–</td>
<td>–</td>
<td>0.22</td>
<td>–</td>
<td>–</td>
<td>0.62</td>
<td>1/8 NPTF</td>
<td>0.88</td>
<td>0.38</td>
<td>0.62</td>
<td>0.19</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>–</td>
<td>–</td>
<td>0.25</td>
<td>–</td>
<td>–</td>
<td>0.88</td>
<td>1/8 NPTF</td>
<td>1.16</td>
<td>0.62</td>
<td>0.81</td>
<td>0.19</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>–</td>
<td>–</td>
<td>0.38</td>
<td>–</td>
<td>–</td>
<td>0.88</td>
<td>1/4 NPTF</td>
<td>1.53</td>
<td>0.88</td>
<td>1.12</td>
<td>0.25</td>
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<table>
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<th>R</th>
<th>S</th>
<th>SB</th>
<th>SC</th>
<th>SO</th>
<th>V</th>
<th>W</th>
<th>ZJ</th>
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<td>–</td>
<td>–</td>
<td>0.50 SQ</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>–</td>
</tr>
<tr>
<td>7/16&quot;</td>
<td>#10-32 UNF</td>
<td>0.88</td>
<td>–</td>
<td>–</td>
<td>#8-32 UNC</td>
<td>0.75</td>
<td>–</td>
<td>–</td>
<td>0.062</td>
<td>2.12</td>
<td>–</td>
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<tr>
<td>3/4&quot;</td>
<td>1/4-28 UNF</td>
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<td>–</td>
<td>–</td>
<td>#10-32 UNF</td>
<td>1.00</td>
<td>#10-32</td>
<td>1/4-20 UNC</td>
<td>0.093</td>
<td>0.34</td>
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</tr>
<tr>
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<td>5/16-24 UNF</td>
<td>1.41</td>
<td>0.25</td>
<td>–</td>
<td>#10-32 UNF</td>
<td>1.25</td>
<td>#10-32</td>
<td>1/4-20 UNC</td>
<td>0.093</td>
<td>0.47</td>
<td>3.75</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>7/16-20 UNF</td>
<td>1.88</td>
<td>–</td>
<td>–</td>
<td>1/4-20 UNC</td>
<td>1.75</td>
<td>1/4-20</td>
<td>5/16-18 UNC</td>
<td>0.125</td>
<td>0.38</td>
<td>4.19</td>
</tr>
</tbody>
</table>

---

**Bore sizes**

- 5/16"
- 7/16" (non-standard)
- 3/4" (non-standard)
- 1-1/16" (non-standard)
- 1-1/2" (non-standard)
### Mounting Style BRD
Rear Block Mount, Double Acting

#### Bore size

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke (in)</th>
<th>Max. stroke (in)</th>
<th>SS rod std</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot;</td>
<td>•</td>
<td></td>
<td>1/2, 1, 2, 3, 4</td>
<td>12</td>
<td>✔</td>
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<tr>
<td>3/4&quot;</td>
<td>•</td>
<td>•</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>•</td>
<td>•</td>
<td>1, 2, 3, 4</td>
<td>12</td>
<td>✔</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>•</td>
<td>•</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
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#### Bore size

<table>
<thead>
<tr>
<th>Bore size</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>BC</th>
<th>C</th>
<th>CC</th>
<th>D</th>
<th>EE</th>
<th>KK</th>
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<td>0.437</td>
<td>0.75</td>
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<td>0.188</td>
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<td>#10-32</td>
<td>#10-32 UNF</td>
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<tr>
<td>3/4&quot;</td>
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<td>0.86</td>
<td>0.624</td>
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<td>0.250</td>
<td>0.22</td>
<td>1/8 NPTF</td>
<td>1/4-28 UNF</td>
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<tr>
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<td>1.12</td>
<td>0.624</td>
<td>1.25</td>
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<td>0.312</td>
<td>0.25</td>
<td>1/8 NPTF</td>
<td>5/16-24 UNF</td>
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<tr>
<td>1-1/2&quot;</td>
<td>1.25</td>
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<td>0.749</td>
<td>1.75</td>
<td>0.25</td>
<td>0.437</td>
<td>0.38</td>
<td>1/4 NPTF</td>
<td>7/16-20 UNF</td>
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#### Bore size

<table>
<thead>
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<th>Bore size</th>
<th>KM</th>
<th>S</th>
<th>SB</th>
<th>SW</th>
<th>V</th>
<th>W</th>
<th>Y</th>
<th>SR</th>
<th>SRM</th>
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<td>7/16-20 UNF</td>
<td>#8-32 UNC</td>
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<td>0.38</td>
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<td>0.72</td>
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<td>5/8-18 UNF</td>
<td>#10-32 UNF</td>
<td>1.00</td>
<td>0.44</td>
<td>0.09</td>
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<td>1.22</td>
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<td>0.88</td>
<td>1.44</td>
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<td>0.09</td>
<td>0.88</td>
<td>1.47</td>
<td>4.38</td>
<td>4.63</td>
</tr>
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Catalog PDN1000US
Parker Pneumatic
Actuator Products – Round Body Cylinders
SR Series

Actuator Products – Round Body Cylinders
SR Series
Mounting Style BFN
Front Block Mount, Single Acting, Spring Return

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke (in)</th>
<th>Max stroke (in)</th>
<th>SS rod std</th>
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<tbody>
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<td>6</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>1/2, 1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
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</tr>
<tr>
<td>1-1/16&quot;</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
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<td></td>
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<tr>
<td>1-1/2&quot;</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Bore size</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>BC</th>
<th>CC</th>
<th>CF</th>
<th>CP</th>
<th>D</th>
<th>DA</th>
<th>E</th>
<th>EE</th>
<th>FH</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot;</td>
<td>0.50</td>
<td>0.50</td>
<td>0.437</td>
<td>0.75</td>
<td>0.188</td>
<td>0.31</td>
<td>0.44</td>
<td>–</td>
<td>#8-32 UNC</td>
<td>0.38</td>
<td>#10-32</td>
<td>0.31</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>0.75</td>
<td>0.81</td>
<td>0.624</td>
<td>1.00</td>
<td>0.250</td>
<td>–</td>
<td>–</td>
<td>0.22</td>
<td>–</td>
<td>0.62</td>
<td>1/8 NPTF</td>
<td>0.38</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>0.75</td>
<td>1.12</td>
<td>0.750</td>
<td>1.25</td>
<td>0.312</td>
<td>–</td>
<td>–</td>
<td>0.25</td>
<td>–</td>
<td>0.88</td>
<td>1/8 NPTF</td>
<td>0.62</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>1.25</td>
<td>1.56</td>
<td>1.00</td>
<td>1.75</td>
<td>0.437</td>
<td>–</td>
<td>–</td>
<td>0.38</td>
<td>–</td>
<td>0.88</td>
<td>1/4 NPTF</td>
<td>0.88</td>
</tr>
</tbody>
</table>

| Bore size | HP | J | KK | MB | S | SB | SC | SO | V | W | X | ZJ | SR | SRM |
|-----------|----|---|----|----|---|----|----|----|---|----|----|----|----|----|-----|
| 7/16"     | 0.44 | 0.19 | #10-32 UNF | 0.88 | #8-32 UNC | 0.75 | – | – | 0.062 | – | 0.94 | 1.94 | – |
| 3/4"      | 0.62 | 0.19 | 1/4-28 UNF | 1.12 | #10-32 UNF | 1.00 | #10-32-2 | 1/4-20 UNC | 0.093 | 0.34 | 1.69 | 2.66 | 2.91 |
| 1-1/16"   | 0.81 | 0.19 | 5/16-24 UNF | 1.41 | #10-32 UNF | 1.25 | #10-32-2 | 1/4-20 UNC | 0.093 | 0.47 | 1.81 | 3.38 | 3.63 |
| 1-1/2"    | 1.12 | 0.25 | 7/16-20 UNF | 1.88 | 1/4 UNC | 1.75 | 1/4-20 | 5/16-18 UNC | 0.125 | 0.38 | 2.00 | 3.69 | 3.94 |

* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.
Round Body Cylinders

Mounting Style BFR
Front Block Mount, Single Acting, Spring Extend

### Bore size

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke (in)</th>
<th>Max stroke (in)</th>
<th>SS rod std</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>✔</td>
<td>✔</td>
<td>1, 2, 3, 4</td>
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<td></td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>✔</td>
<td>✔</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>✔</td>
<td>✔</td>
<td>1, 2, 3, 4</td>
<td>6</td>
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### Bore size

<table>
<thead>
<tr>
<th>Bore size</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>BC</th>
<th>CC</th>
<th>D</th>
<th>E</th>
<th>EE</th>
<th>F</th>
<th>FH</th>
<th>HP</th>
<th>J</th>
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<td>0.91</td>
<td>0.624</td>
<td>1.00</td>
<td>0.250</td>
<td>0.22</td>
<td>–</td>
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<td>0.88</td>
<td>0.38</td>
<td>0.62</td>
<td>0.19</td>
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<tr>
<td>1-1/16&quot;</td>
<td>0.75</td>
<td>1.12</td>
<td>0.750</td>
<td>1.25</td>
<td>0.312</td>
<td>0.25</td>
<td>–</td>
<td>1/8 NPTF</td>
<td>1.16</td>
<td>0.62</td>
<td>0.81</td>
<td>–</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>1.25</td>
<td>1.56</td>
<td>1.00</td>
<td>1.75</td>
<td>0.437</td>
<td>0.38</td>
<td>0.88</td>
<td>1/4 NPTF</td>
<td>1.53</td>
<td>0.88</td>
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<td>0.25</td>
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</table>

* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.
Actuator Products – Round Body Cylinders

SR Series

Mounting Style TRN
Rear Trunnion Mount, Single Acting, Spring Return

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke</th>
<th>Max. stroke</th>
<th>SS rod std</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>C</th>
<th>CC</th>
<th>D</th>
<th>EE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot;</td>
<td>•</td>
<td>•</td>
<td>1/2, 1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
<td>0.50</td>
<td>0.50</td>
<td>0.374</td>
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<td>0.188</td>
<td>–</td>
<td>#10-32</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>•</td>
<td>•</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
<td>0.75</td>
<td>0.81</td>
<td>0.499</td>
<td>0.25</td>
<td>0.250</td>
<td>0.22</td>
<td>1/8 NPTF</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>•</td>
<td>•</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
<td>0.75</td>
<td>1.12</td>
<td>0.624</td>
<td>0.38</td>
<td>0.312</td>
<td>0.25</td>
<td>1/8 NPTF</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>•</td>
<td>•</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>✔</td>
<td>1.25</td>
<td>1.56</td>
<td>0.749</td>
<td>0.25</td>
<td>0.437</td>
<td>0.38</td>
<td>1/4 NPTF</td>
</tr>
</tbody>
</table>

Bore size | KK | KM | SB | SW | TD | TL | UT | V | W | X | XJ | ZJ |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot;</td>
<td>#10-32 UNF</td>
<td>3/8-24 UNF</td>
<td>0.75</td>
<td>0.38</td>
<td>0.374</td>
<td>0.50</td>
<td>1.25</td>
<td>0.05</td>
<td>0.32</td>
<td>0.94**</td>
<td>1.38</td>
<td>–</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>1/4-28 UNF</td>
<td>1/2-20 UNF</td>
<td>1.00</td>
<td>0.44</td>
<td>0.500</td>
<td>0.38</td>
<td>1.75</td>
<td>0.09</td>
<td>0.62</td>
<td>1.69</td>
<td>1.94</td>
<td>2.19</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>5/16-24 UNF</td>
<td>5/8-18 UNF</td>
<td>1.25</td>
<td>0.44</td>
<td>0.500</td>
<td>0.38</td>
<td>2.00</td>
<td>0.09</td>
<td>0.88</td>
<td>1.81</td>
<td>2.44</td>
<td>2.69</td>
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<tr>
<td>1-1/2&quot;</td>
<td>7/16-20 UNF</td>
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<td>0.62</td>
<td>0.500</td>
<td>0.38</td>
<td>2.50</td>
<td>0.09</td>
<td>0.88</td>
<td>2.00</td>
<td>2.56</td>
<td>2.81</td>
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</table>

* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.
** For each 0.50" of stroke.

Mounting Style TRR
Rear Trunnion Mount, Single Acting, Spring Extend

<table>
<thead>
<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke</th>
<th>Max. stroke</th>
<th>SS rod std</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>C</th>
<th>CC</th>
<th>D</th>
<th>EE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>I</td>
<td>I</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>3</td>
<td>0.75</td>
<td>0.86</td>
<td>0.624</td>
<td>0.25</td>
<td>0.250</td>
<td>0.22</td>
<td>1/8 NPTF</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>I</td>
<td>I</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>3</td>
<td>0.75</td>
<td>1.12</td>
<td>0.624</td>
<td>0.38</td>
<td>0.312</td>
<td>0.25</td>
<td>1/8 NPTF</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>I</td>
<td>I</td>
<td>1, 2, 3, 4</td>
<td>6</td>
<td>3</td>
<td>1.25</td>
<td>1.56</td>
<td>0.749</td>
<td>0.25</td>
<td>0.437</td>
<td>0.38</td>
<td>1/4 NPTF</td>
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</tbody>
</table>

Bore size | KK | KM | R | SB | TD | TL | UT | V | W | WH | X | XJ | ZJ |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>3/4&quot;</td>
<td>1/4-28 UNF</td>
<td>1/2-20 UNF</td>
<td>0.25</td>
<td>1.00</td>
<td>0.500</td>
<td>0.38</td>
<td>1.75</td>
<td>0.09</td>
<td>0.75</td>
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<td>3.10</td>
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<td>1-1/16&quot;</td>
<td>5/16-24 UNF</td>
<td>5/8-18 UNF</td>
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<td>1.25</td>
<td>0.500</td>
<td>0.38</td>
<td>2.00</td>
<td>0.09</td>
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<td>3/4-16 UNF</td>
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<td>1.75</td>
<td>0.500</td>
<td>0.38</td>
<td>2.50</td>
<td>0.09</td>
<td>0.88</td>
<td>1.25</td>
<td>3.00</td>
<td>3.38</td>
<td>3.63</td>
</tr>
</tbody>
</table>

* To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.
Actuator Products – Round Body Cylinders
SR Series

Mounting Style TFD
Front Trunnion Mount, Double Acting

<table>
<thead>
<tr>
<th>Bore size</th>
<th>Std. stroke (in)</th>
<th>Max. stroke (in)</th>
<th>SS rod std</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>CC</th>
<th>D</th>
<th>E</th>
<th>EE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot;</td>
<td>1/2, 1, 1-1/2, 2, 3, 4</td>
<td>12</td>
<td>✔</td>
<td>0.50</td>
<td>0.50</td>
<td>0.437</td>
<td>0.188</td>
<td>–</td>
<td>0.38</td>
<td>#10-32</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
<td>0.75</td>
<td>0.81</td>
<td>0.624</td>
<td>0.250</td>
<td>0.22</td>
<td>0.62</td>
<td>1/8 NPTF</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
<td>0.75</td>
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<td>0.750</td>
<td>0.312</td>
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<td>0.88</td>
<td>1/8 NPTF</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
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<td>1.56</td>
<td>1.000</td>
<td>0.437</td>
<td>0.38</td>
<td>0.88</td>
<td>1/4 NPTF</td>
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Mounting Style TRD
Rear Trunnion Mount, Double Acting

<table>
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<tr>
<th>Bore size</th>
<th>Std. stroke (in)</th>
<th>Max. stroke (in)</th>
<th>SS rod std</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>CC</th>
<th>D</th>
<th>E</th>
<th>EE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot;</td>
<td>1/2, 1, 1-1/2, 2, 3, 4</td>
<td>12</td>
<td>✔</td>
<td>0.50</td>
<td>0.74</td>
<td>0.437</td>
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<td>0.188</td>
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<td>#10-32</td>
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<tr>
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<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
<td>0.75</td>
<td>0.86</td>
<td>0.624</td>
<td>0.250</td>
<td>0.22</td>
<td>0.62</td>
<td>1/8 NPTF</td>
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<tr>
<td>1-1/16&quot;</td>
<td>1, 2, 3, 4</td>
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<td>✔</td>
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<td>1.12</td>
<td>0.624</td>
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<td>1/8 NPTF</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>12</td>
<td>✔</td>
<td>1.25</td>
<td>1.56</td>
<td>0.749</td>
<td>0.25</td>
<td>0.437</td>
<td>0.38</td>
<td>1/4 NPTF</td>
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</table>
Mounting Style TFN
Front Trunnion Mount, Single Acting, Spring Return

### SR Series

<table>
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<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke (in)</th>
<th>Max. stroke (in)</th>
<th>SS rod std</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot;</td>
<td>•</td>
<td>•</td>
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<td>6</td>
<td>✔️</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>•</td>
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<td>1/2, 1-1/2, 3, 4</td>
<td>6</td>
<td>✔️</td>
</tr>
<tr>
<td>1-1/16&quot;</td>
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<td>✔️</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
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<td>1/2, 3, 4</td>
<td>6</td>
<td>✔️</td>
</tr>
</tbody>
</table>

*To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.

*For each 0.50” of stroke

Mounting Style TFR
Front Trunnion Mount, Single Acting, Spring Extend

### SR Series

<table>
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<tr>
<th>Bore size</th>
<th>SR</th>
<th>SRM</th>
<th>Std. stroke (in)</th>
<th>Max. stroke (in)</th>
<th>SS rod std</th>
</tr>
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<tbody>
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<td>•</td>
<td>•</td>
<td>1-1/16, 2, 3, 4</td>
<td>6</td>
<td>✔️</td>
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<tr>
<td>1-1/16&quot;</td>
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<td>•</td>
<td>1/2, 3, 4</td>
<td>6</td>
<td>✔️</td>
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<tr>
<td>1-1/2&quot;</td>
<td>•</td>
<td>•</td>
<td>1/2, 3, 4</td>
<td>6</td>
<td>✔️</td>
</tr>
</tbody>
</table>

*To determine lengths for half inch stroke increments, determine length for next highest whole number stroke and subtract one half inch.
Air Reservoirs

Air Reservoirs installed can significantly reduce the pulsation of a system. In addition, air reservoirs can be used as a means to store energy. Caution should always be used when storing energy. Air reservoirs if installed in the correct location and sized correctly can temporarily increase the flow of an actuator or cylinder. As always never exceed the rated pressure of the cylinder.

Ordering Information

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<th>Mounting</th>
<th>Length</th>
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<td>2.50</td>
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<td></td>
</tr>
<tr>
<td>3.00</td>
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</tbody>
</table>

Bore Size (in inches)

<table>
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<tr>
<th>Bore Size (in inches)</th>
<th>Standard Lengths</th>
<th>Max. Length</th>
<th>Volume (in³)</th>
</tr>
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<tbody>
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<td>9.90 plus 7.07 per inch length</td>
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Air Reservoirs installed can significantly reduce the pulsation of a system. In addition, air reservoirs can be used as a means to store energy. Caution should always be used when storing energy. Air reservoirs if installed in the correct location and sized correctly can temporarily increase the flow of an actuator or cylinder. As always never exceed the rated pressure of the cylinder.

Ordering Information

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Piston Rod Clevis

Assembly includes pin and (2) retainer rings and (1) jam nut.

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| 1-1/16    | 5/16-24 | .50  | .94  | .86  | .19  | .16 | 5/16-24 | .25  | .25  | .50  | .69  | L071303000* |
| 1-1/4,    | 7/16-20 | .75  | 1.31 | 1.69 | .94  | .25 | 7/16-20 | .38  | .38  | .75  | 1.03 | L071304000* |
| 1-3/4, 2, | 1/2-20 | .75  | 1.31 | 1.69 | .94  | .31 | 1/2-20 | .38  | .38  | .75  | 1.03 | L071305000* |
| 2-1/2     |       |      |      |      |      |      |      |      |      |      |      | L077130500* |
| 3         | 5/8-18 | 1.00 | 2.25 | 2.75 | 1.50 | .38 | 5/8-18 | .50  | .50  | 1.00 | 1.38 | L071306000*

* Stainless Steel for use with SRD/SRDM cylinders.

Pivot Brackets

Bore size | A    | B    | C    | D    | E    | F    | G    | H    | J    | K    | L    | M    | Part number |
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SR Series Trunnion Brackets

Select brackets for SR series trunnion mount cylinders from the table below.

(Note: trunnion brackets are ordered as a separate item from the cylinder.)

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Most popular.
### Actuator Products – Round Body Cylinders

#### Foot Brackets

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* Stainless Steel for use with SRD/SRDM cylinders.

#### Mounting Nut

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</table>

* Stainless Steel for use with SRD/SRDM cylinders.

Most popular.
WARNING: A. FAILURE OF THE CYLINDER, ITS PARTS, ITS MOUNTING, ITS CONNECTIONS TO OTHER OBJECTS, OR ITS CONTROLS CAN RESULT IN:
• Unanticipated or uncontrolled movement of the cylinder or objects connected to it.
• Falling of the cylinder or objects held up by it.
• Fluid escaping from the cylinder, potentially at high velocity.

THESE EVENTS COULD CAUSE DEATH OR PERSONAL INJURY BY, FOR EXAMPLE, PERSONS FALLING FROM HIGH LOCATIONS, BEING CRUSHED OR STRUCK BY HEAVY OR FAST MOVING OBJECTS, BEING PUSHED INTO DANGEROUS EQUIPMENT OR SITUATIONS, OR SLIPPING ON ESCAPED FLUID.

1.0 General Instructions
1.1 Scope – This safety guide provides instructions for selecting and using (including assembling, installing, and maintaining) cylinder products. This safety guide is a supplement to and is to be used with the specific Company publications for the specific cylinder products that are being considered for use.

1.2 Fail Safe – Cylinder products can and do fail without warning for many reasons. All systems and equipment should be designed in a fail-safe mode so that if the failure of a cylinder product occurs people and property won’t be endangered.

1.3 Distribution – Provide a free copy of this safety guide to each person responsible for selecting or using cylinder products. Do not select or use the Company’s cylinders unless thoroughly reading and understanding this safety guide as well as the specific Company publications for the products considered or selected.

1.4 User Responsibility – Due to very wide variety of cylinder applications and cylinder operating conditions, The Company 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 hydraulic and pneumatic cylinders outlined in this catalog are designed to The Company’s design guidelines and do not necessarily meet the design guidelines 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.

1.5 Additional Questions – Call the appropriate Company technical service department if you have any questions or require any additional information. See the Company publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.com, for telephone numbers of the appropriate technical service department.

2.0 Cylinder and Accessories Selection
2.1 Seals – Part of the process of selecting a cylinder is the selection of seal compounds. Before making this selection, consult the “seal information page(s)” of the publication for the series of cylinders of interest. 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.

2.2 Piston Rods – Possible consequences of piston rod failure or separation of the piston rod from the piston include, but are not limited to:
• Piston rod and or attached load thrown off at high speed.
• High velocity fluid discharge.
• Piston rod extending when pressure is applied in the piston retracted mode.

Piston rods or machine members attached to the piston rod may move suddenly and without warning as a consequence of other conditions occurring to the machine such as, but not limited to:
• Unexpected detachment of the machine member from the piston rod.
• Failure of the pressurized fluid delivery system (hoses, fittings, valves, pumps, compressors) which maintain cylinder position.
• Catastrophic cylinder seal failure leading to sudden loss of pressurized fluid.
• Failure of the machine control system.

Follow the recommendations of the “Piston Rod Selection Chart and Data” in the publication for the series of cylinders of interest. The suggested piston rod diameter in these charts must be followed in order to avoid piston rod buckling.

Piston rods are not normally designed to absorb bending moments or loads which are perpendicular to the axis of piston rod motion. These additional loads can cause the piston rod to fail. If these types of additional loads are expected to be imposed on the piston rod, their magnitude should be made known to our engineering department.

The cylinder user should always make sure that the piston rod is securely attached to the machine member.

On occasion cylinders are ordered with double rods (a piston rod extended from both ends of the cylinder). In some cases a stop is threaded on to one of the piston rods and used as an external stop. This style of stop is not acceptable. Cylinders which have been ordered with double rods should be immediately rejected by the user, and should be replaced with cylinder with single rods. These external stops or stops which are parallel to the mating contact surface, and do not have a mount which is perpendicular to the mating contact surface, or if debris is trapped between the contact surfaces, a bending moment will be placed on the piston rod, which can lead to piston rod failure. An external stop will also negate the effect of cushioning and will subject the piston rod to impact loading. These two (2) conditions can cause piston rod failure. Internal stroke adjusters are available with and without cushions. The use of external stroke adjusters should be reviewed with our engineering department.

The piston rod to piston and the stud to piston rod threaded connections are secured with an anaerobic adhesive. The strength of the adhesive decreases with increasing temperature. Cylinders which can be exposed to temperatures above 250°F (+121°C) are to be ordered with a non-studded piston rod and a pinned piston to rod joint.

2.3 Cushions – Cushions should be considered for cylinder applications when the piston velocity is expected to be over 4 inches/second. Cylinder cushions are normally designed to absorb the energy of a linear applied load. A rotating mass has considerably more energy than the same mass moving in a linear mode. Cushioning for a rotating mass application should be reviewed by our engineering department.

2.4 Cylinder Mountings – Some cylinder mounting configurations may have certain limitations such as but not limited to minimum stroke for side or foot mounting cylinders or pressure de-ratings for certain mounts. Carefully review the catalog for these types of restrictions. Always mount cylinders using the largest possible high tensile alloy steel socket head cap screws that can fit in the cylinder mounting holes and torque them to the manufacturer’s recommendations for their size.

2.5 Port Fittings – Hydraulic cylinders applied with meter out or deceleration circuits are subject to intensified pressure at piston rod end. The rod end pressure is approximately equal to:

\[
\text{Operating pressure} \times \text{Effective cap end area}
\]

Contact your connector supplier for the pressure rating of individual connectors.

3.0 Cylinder and Accessories Installation and Mounting
3.1 Installation
3.1.1 Cleanliness is an important consideration, and cylinders are shipped with the ports plugged to protect them from contaminants entering the ports. These plugs should not be removed until the piping is to be installed. Before making the connection to the cylinder ports, piping should be thoroughly cleaned to remove all chips or burrs which might have resulted from threading or flaring operations.
3.1.2 – Cylinders operating in an environment where air drying materials are present such as fast-drying chemicals, paint, or weld splatter, or other hazardous conditions such as excessive heat, should have shields installed to prevent damage to the piston rod and piston rod seals.

3.1.3 – Proper alignment of the cylinder piston rod and its mating component on the machine should be checked in both the extended and retracted positions. Improper alignment will result in excessive rod gland and/or cylinder bore wear. If fixed mounting cylinders attaching the piston rod while the rod is retracted will help in achieving proper alignment.

3.1.4 – Sometimes it may be necessary to rotate the piston rod in order to thread the piston rod into the machine member. This operation must always be done with zero pressure being applied to either side of the piston. Failure to follow this procedure may result in loosening the piston to rod-threaded connection. In some rare cases the turning of the piston rod may rotate a threaded piston rod gland and loosen it from the cylinder head. Confirm that this condition is not occurring. If it does, re-tighten the piston rod gland firmly against the cylinder head.

3.2 Mounting Recommendations

3.2.1 – Always mount cylinders using the largest possible high tensile alloy steel socket head screws that can fit in the cylinder mounting holes and torque them to the manufacturer’s recommendations for their size.

3.2.2 – Side-Mounted Cylinders – In addition to the mounting bolts, cylinders of this type should be equipped with thrust keys or dowel pins located so as to resist the major load.

3.2.3 – Tie Rod Mounting – Cylinders with tie rod mountings are recommended for applications where mounting space is limited. The standard tie rod extension is shown as BB in dimension tables. Longer or shorter extensions can be supplied. Nuts used for this mounting style should be torqued to the same value as the tie rods for that bore size.

3.2.4 – Flange Mount Cylinders – The controlled diameter of the rod gland extension on head end flange mount cylinders can be used as a pilot to locate the cylinders in relation to the machine. After alignment has been obtained, the flanges may be drilled for pins or dowels to prevent shifting.

3.2.5 – Trunnion Mountings – Cylinders require lubricated bearing blocks with minimum bearing clearances. Bearing blocks should be carefully aligned and rigidly mounted so the trunnions will not be subjected to bending moments. The rod end should also be pivoted with the pivot pin in line and parallel to axis of the trunnion pins.

3.2.6 – Clevis Mountings – Cylinders should be pivoted at both ends with centerline of pins parallel to each other. After cylinder is mounted, be sure to check to assure that the cylinder is free to swing through its working arc without interference from other machine parts.

4.0 Cylinder and Accessories Maintenance, Troubleshooting and Replacement

4.1 Storage – At times cylinders are delivered before a customer is ready to install them and must be stored for a period of time. When storage is required the following procedures are recommended.

4.1.1 – Store the cylinders in an indoor area which has a dry, clean and noncorrosive atmosphere. Take care to protect the cylinder from both internal corrosion and external damage.

4.1.2 – Whenever possible cylinders should be stored in a vertical position (piston rod up). This will minimize corrosion due to possible condensation which could occur inside the cylinder. This will also minimize seal damage.

4.1.3 – Port protector plugs should be left in the cylinder until the time of installation.

4.1.4 – If a cylinder is stored full of hydraulic fluid, expansion of the fluid due to temperature changes must be considered. Installing a check valve with free flow out of the cylinder is one method.

4.1.5 – When cylinders are mounted on equipment that is stored outside for extended periods, exposed unpainted surfaces, e.g. piston rod, must be coated with a rust-inhibiting compound to prevent corrosion.

4.2 Cylinder Trouble Shooting

4.2.1 – External Leakage

4.2.1.1 – Rod seal leakage can generally be traced to worn or damaged seals. Examine the piston rod for dents, gouges or score marks, and replace piston rod if surface is rough.

4.2.1.2 – Cylinder body seal leak can generally be traced to loose tie rods. Torque the tie rods to manufacturer’s recommendation for that bore size.

Excessive pressure can also result in cylinder body seal leak. Determine maximum pressure to rated limits. Replace seals and re-torque tie rods as in paragraph above. Excessive pressure can also result in cylinder body seal leak. Determine if the pressure rating of the cylinder has been exceeded. If so, bring the operating pressure down to the rating of the cylinder and have the tie rods replaced.

Pinched or extruded cylinder body seal will also result in a leak. Replace cylinder body seal and re-torque as in paragraph above.

Cylinder body seal leakage due to loss of radial squeeze which shows up in the form of flat spots or due to wear on the O.D. or I.D. – Either of these is symptoms of normal wear due to high cycle rate or length of service. Replace seals as per paragraph above.

4.2.2 – Internal Leakage

4.2.2.1 – Piston seal leak (by-pass) 1 to 3 cubic inches per minute leakage is considered normal for piston ring construction. Virtually no static leak with lip seal type seals on piston should be expected. Piston seal wear is a usual cause of piston seal leakage. Replace seals as required.

4.2.2.2 – With lip seal type piston seals excessive back pressure due to over-adjustment of speed control valves could be a direct cause of rapid seal wear. Contamination in a hydraulic system can result in a scored cylinder bore, resulting in rapid seal wear. In either case, replace piston seals as required.

4.2.2.3 – What appears to be piston seal leak, evidenced by the fact that the cylinder drifts, is not always traceable to the piston. To make sure, it is suggested that one side of the cylinder piston be pressurized and the fluid line at the opposite port be disconnected. Observe leakage. If none is evident, seek the cause of cylinder drift in other component parts in the circuit.

4.2.3 – Cylinder Fails to Move the Load

4.2.3.1 – Pneumatic or hydraulic pressure is too low. Check the pressure at the cylinder to make sure it is to circuit requirements.

4.2.3.2 – Piston Seal Leak – Operate the valve to cycle the cylinder and observe fluid flow at valve exhaust ports at end of cylinder stroke. Replace piston seals if flow is excessive.

4.2.3.3 – Cylinder is undersized for the load – Replace cylinder with one of a larger bore size.

4.3 Erratic or Chatter Operation

4.3.1 – Excessive friction at rod gland or piston bearing due to load misalignment – Correct cylinder-to-load alignment.

4.3.2 – Cylinder sized too close to load requirements – Reduce load or install larger cylinder.

4.3.3 – Erratic operation could be traced to the difference between static and kinetic friction. Install speed control valves to provide a back pressure to control the stroke.

4.4 Cylinder Modifications, Repairs, or Failed Component – Cylinders as shipped from the factory are not to be disassembled and or modified. If cylinders require modifications, these modifications must be done at company locations or by The Company’s certified facilities. The Cylinder Division Engineering Department must be notified in the event of a mechanical fracture or permanent deformation of any cylinder component (excluding seals). This includes a broken piston rod, tie rod, mounting accessory or any other cylinder component. The notification should include all operation and application details. This information will be used to provide an engineered repair that will prevent recurrence of the failure.

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.

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