Piston Accumulators

Threaded Piston Accumulators ■ ACP Crimped Piston ■ Gas Bottles ■ Metric Accumulators & Bottles

Features:
• Heavy Duty Service with Operating Pressures to 5000 PSI
• 1.5” thru 12” Bores with Over Fifty Standard Capacities
• “Fatigue Tested” Designs, 2” thru 7” Bores
• V-O-ring Piston Seals Std
• Serviceable Threaded End Construction
• Certifications Available: ASME, DNV, ABS, AS1210, SELO, CRN, GOST, CE
• Five Standard Seal Options to Handle a Variety of Fluids and Temperatures
• Temperature Ranges -45° to 320°F
Overview

Piston accumulators provide a means of regulating the performance of a hydraulic system. They are suitable for storing energy under pressure, absorbing hydraulic shocks, and dampening pump pulsation and flow fluctuations. The simple, compact, cylindrical design of piston accumulators ensures dependable performance, maximum efficiency, and long service life.

Why Use Piston Accumulators?
- Improves System Efficiency
- Supplements Pump Flow
- Supplies Power in Emergency
- Compensates for Leakage
- Absorbs Hydraulic Shocks
- Wide Range of Sizes
- Lower Gas Permeation Rate
- Extremely High-flow Rates
- High/Low Temperature Tolerance
- High Compression Ratios
- Can Be Used With Remote Gas Bottles
- Can Be Mounted in Any Position
- Failure Mode Is Gradual, Predictable
- Sensors Can Be Fitted for Performance Monitoring
- Less Maintenance

Parker Piston Accumulators...
Your #1 Choice!
Parker is the leading manufacturer of piston accumulators in North America. Parker’s broad offering includes:
- Piston Accumulators for 2000, 3000, 4000 & 5000 PSI
- Gas Bottles for 3000, 4000 & 5000 PSI
- Metric Piston Accumulators for 207, 276 and 345 Bar
- Metric Gas Bottles for 207, 276 and 345 Bar
- A Wide Array of Options and Accessories

Best in Class Capabilities
- Accumulators up to 25" ID and 250 gallons and larger
- Pressure ratings in excess of 20,000 PSI
- Over 40 types of seal options provide compatibility with any fluid and application
- Wide variety of stainless steel and alternative material options
- Extreme temperatures, certified product to -50°F
- Integrated solutions including imbedded valving and controls in accumulator
- Struts and suspension products designed for rugged mobile applications
- Many surface coatings, including epoxies, CARC paints, electroless nickel plating
- Accumulators custom designed for the most demanding markets and global locations
- Unique lockout and tag-out integrated functions
- DOT shipping exemptions for pre-charged vessels

Our Wide Range of Piston Accumulators . . .

Our Piston Accumulator Series
Parker offers standard piston accumulators rated for 2000, 3000, 4000 and 5000 PSI. To make it easier for you to order, we have divided the piston accumulator section into Series 2000 & 3000, ACP Accumulators and Series 4000 & 5000 with separate technical and ordering information. Please consult the factory for a wide variety of accumulators with pressure ratings exceeding 5000 PSI.

Series 3000 7"
Bore Now Available in Non-ASME
ASME certification is a requirement of strength and material traceability (see page 6). Many markets require ASME certification, but not all. It is the function of the system designer to specify whether ASME is or is not required.

We now offer a 7" bore true non-ASME accumulator which meets ASME Section VIII, Division I design requirements while utilizing industry standard materials. When ASME certification is not required, specifying these accumulators can result in moderate savings.

Series 2000 12"
Bore
Parker offers piston accumulators rated for 2000 PSI. When a 12" bore is required with a minimum operating pressure of 2,000 PSI or less, specifying these accumulators can result in moderate savings.
Piston type accumulators are designed with compact, rugged **steel shell and caps**. The steel shell allows heat to dissipate effectively. The bore is micro-finished for extended seal life. The threaded caps allow for easy repair and seal replacement.

The piston seal consists of a unique, five-bladed V-O-ring with back-up washers. This design eliminates seal roll-over and ensures total separation of fluid and gas under the most severe operating conditions.

The V-O-ring also holds full pressure throughout long idle periods between cycles, providing dependable, full pressure storage of hydraulic energy. It ensures safe, reliable absorption of pressure peaks. The piston seal design helps to prevent sudden failure of the accumulator.

The V-O-ring seals are available in a wide variety of compounds to cover a broad range of fluids and operating temperature ranges (see Options).

![Diagram of Piston Accumulator](image)

- **Lightweight piston** design allows fast response to reduce shock in rapid cycling applications. The dished profile of the piston provides extra gas capacity and greater useable volume of fluid.
- **PTFE glide rings** eliminate metal-to-metal contact between the tube and piston, reducing wear and extending service life.
- All piston accumulators are fitted with a standard designed **gas valve** for ease of gas precharging. Series 3000, 3" thru 6" bores, are fitted with standard cored gas valve cartridges (ISO-4570-8V1). The Series 4000 and Series 5000, 3" thru 6" bores, have as standard a gas valve with a 5000 PSI high-pressure valve cartridge. Offered as an option is a high flow gas valve (L07689000K). For 7" thru 12" bore sizes, the high flow gas valve is standard. The high-flow gas valve is available by special request – please consult factory.
- **Steel gas valve protector** reduces the risk of damage to the gas valve from external impact.

**A wide range of port types and sizes** are available. SAE straight thread and SAE flange ports are fitted as standard. NPTF, SAE 4-bolt & special flanges, BSPP, Metric, and ISO 6149-1 ports are available options.
Series 3000 Piston Accumulators
(and 12" units at 2,000 PSI)

Features
- Heavy Duty Service with 3000 PSI Operating Pressure
- 3" thru 12" Bores with More Than 50 Standard Capacities
- V-O-ring Piston Seals
- Serviceable Threaded End Construction
- Five Standard Seal Options to Handle a Variety of Fluids and Temperatures
- ASME/DNV/ABS/AS1210/SELO/CRN/GOST/CE Certifications Available
- Temperature Ranges -45° to 320°F
Materials
- Shell – high strength alloy steel
- Caps – steel
- Pistons – aluminum (3" thru 7"), ductile iron (9" & 12")
- Gas Valve Cartridge – steel
- Gas Valve Protector – steel
- Piston Glide Rings – PTFE
- Piston & End Seals – various polymers
- Piston Seal Backups – PTFE

Specifications

Actual Bore Sizes & Maximum Flow Rates

<table>
<thead>
<tr>
<th>Nominal Bore Size (in)</th>
<th>Actual Bore Size (in)</th>
<th>Max. Recommended Flow*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3.00</td>
<td>220</td>
</tr>
<tr>
<td>4</td>
<td>4.03</td>
<td>397</td>
</tr>
<tr>
<td>6</td>
<td>5.78</td>
<td>1199</td>
</tr>
<tr>
<td>7</td>
<td>7.00</td>
<td>228.6</td>
</tr>
<tr>
<td>9</td>
<td>9.00</td>
<td>1982</td>
</tr>
<tr>
<td>12</td>
<td>11.88</td>
<td>3450</td>
</tr>
</tbody>
</table>

*Note: Based on 120 in/sec maximum piston speed, port & fitting size will become limiting factors for most applications.

Pressure Ratings
Parker Series 3000 piston accumulators are rated at 3000 PSI and a minimum 4 to 1 design factor. Pressures over 3000 PSI, see Series 4000 and Series 5000 accumulators. For pressures over 5000 PSI consult factory.

Fluids
Parker's piston accumulators are compatible with a wide variety of fluids. Standard accumulators (with nitrile seals) may be used with petroleum-based industrial oils or water-based flame resistant fluids. Optional seals compatible with most industrial fluids are available with temperature ranges from -45°F to 320°F (-43°C to 160°C).

Precharge
Units are shipped with a nominal nitrogen precharge as standard. For specific precharge pressures, specify at the time of order.

Auxiliary Gas Bottles
When space does not permit the installation of the required piston accumulator, a smaller accumulator may be used by connecting it to an auxiliary gas bottle(s) that can be located in a nearby spot where space is available. In some cases, a piston accumulator and gas bottle combination may be more economical, especially large capacity sizes. Piston travel, confined to the accumulator, must be calculated with ample margins to store the required fluid.

Pressure Ports
The following ports are supplied as standard on all fluid ends and on the gas end of accumulators ordered for use with gas bottles:

Notes:
1) For flange dimensions, see tables below.
2) On standard 7" & 9" bore accumulators, both SAE Straight Thread and Flange ports are available as standard. Omit port code for SAE #32 Straight Thread, specify "PL" port code for 2" Code 61 Flange when ordering. Flange ports are recommended at operating pressures above 2000 PSI due to pressure limitations of most #32 SAE Straight Thread fittings.

Gas Valves
Two types of gas valves are available on Series 3000 piston accumulators and gas bottles. Units with 3" thru 6" bores, are offered with a cored gas valve cartridge (ISO-4570-8V1) as standard. All 7" thru 12" bore units are supplied with a heavy-duty, high-pressure, poppet-type gas valve cartridge (L07689000K) as standard.

Available Options
If your application requires a piston accumulator, gas bottle, or special option that falls outside of Parker's broad offering, consult your local distributor, Parker representative, or the factory with your specific requirements. Parker has the manufacturing and engineering expertise to design and build piston accumulators to your exacting requirements, from simple modifications of standard units to complete designs. Some example of Parker's past special designs include:
- High Pressures
- Special and Stainless Steel Materials
- Piston Position and Velocity Sensors and Switches
- Water Service
- Non-Standard Capacities
- Extreme Temperatures

Parker Hannifin
Global Accumulator Division
United States
Water Service Option (W)

Piston accumulators are available for use with water as the fluid media. Modifications include electroless nickel plating all surfaces and metal parts. Consult factory for details.

Seal Material Options

<table>
<thead>
<tr>
<th>Seal Code</th>
<th>Polymer</th>
<th><strong>Recommended Operating Temperature Range</strong></th>
<th>Maximum Temperature with Reduced Life</th>
<th>General Application and Compatibility*</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>Buna-Nitrile</td>
<td>-20°F to 165°F</td>
<td>200°F 93°C</td>
<td>Parker's Standard Compound – Compatible with most mineral oil-based fluids</td>
</tr>
<tr>
<td>E</td>
<td>Fluorocarbon Elastomer</td>
<td>-10°F to 250°F</td>
<td>400°F 204°C</td>
<td>Compatible with most mineral oil-based fluids at higher temperatures and some exotic fluids</td>
</tr>
<tr>
<td>D</td>
<td>Ethylene Propylene</td>
<td>-40°F to 250°F</td>
<td>300°F 149°C</td>
<td>Compatible with most phosphate ester fluids and some synthetic fluids</td>
</tr>
<tr>
<td>H</td>
<td>Hydrogenated Nitrile</td>
<td>-25°F to 320°F</td>
<td>350°F 177°C</td>
<td>Compatible with most oil-based and biodegradable fluids, maintains sealing effectiveness at a wide range of temperatures</td>
</tr>
<tr>
<td>Q</td>
<td>Low Temp. Nitrile</td>
<td>-45°F to 160°F</td>
<td>200°F 93°C</td>
<td>Compatible with most mineral oil-based fluids and maintains sealing effectiveness at low temperatures</td>
</tr>
</tbody>
</table>

*Consult local distributor or factory for fluid compatibility information.

** The temperatures listed indicate the operating temperature range of the seals, not the accumulator. For the Minimum Design Metal Temperature (MDMT) of ASME certified accumulators, refer to page 31.

Gas Valve Option (M)

A heavy-duty, high-pressure, poppet-type gas valve is available on 3" through 6" bores as an option (M). Specify when ordering.

Safety Fuse Options (F)

Safety Fuses are used as a safety device on accumulators and gas bottles to prevent over-pressurization of gas due to external heat or hydraulic pressure (set at 140% of maximum system pressure to avoid rupture disk fatigue and premature failure). The rupture disks are calibrated to rupture at a predetermined pressure. Safety fuses are available on most sizes of piston and bladder accumulators and gas bottles. Safety fuses can be installed on all piston accumulators by using the “Fuse Adapter” as shown to the right. 4” bore units and above can be equipped with a fuse port machined in the gas cap by specifying the “Safety Fuse Option” (F) at the time of order in the model code, see “How to Order.” The safety fuse assembly and/or fuse adapter must be ordered separately.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Fuse Assembly1</td>
<td>086471xxxx</td>
</tr>
<tr>
<td>Replacement Rupture Disks</td>
<td>756003xxxx</td>
</tr>
<tr>
<td>Fuse Adapter</td>
<td>1468970002</td>
</tr>
</tbody>
</table>

1 Assembly includes housing and rupture disk, xxxx = pressure setting in 100 PSI increments, i.e., for an assembly with a 2000 PSI setting, order P/N 0864712000.

Note: ASME and CRN units available upon request.
Piston Accumulators
Series 3000

3000 PSI (207 Bar Metric) Piston Accumulators for Oil and Water Service

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Fluid Volume</th>
<th>Gas Volume</th>
<th>A in (mm)</th>
<th>B in (mm)</th>
<th>C in (mm)</th>
<th>E in (mm)</th>
<th>F in (mm)</th>
<th>G in (mm)</th>
<th>Weight lbs (Kg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2N0005D1K (D2K)</td>
<td>5 (0.08)</td>
<td>6 (0.11)</td>
<td>6.76 (172)</td>
<td>1.06 (27)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5 (2.1)</td>
<td></td>
</tr>
<tr>
<td>A2N0010D1K (D2K)</td>
<td>10 (0.16)</td>
<td>11 (0.19)</td>
<td>8.31 (211)</td>
<td>3.38</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5 (2.3)</td>
<td></td>
</tr>
<tr>
<td>A2N0015D1K (D2K)</td>
<td>15 (0.25)</td>
<td>16 (0.24)</td>
<td>9.78 (250)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6 (3.3)</td>
<td></td>
</tr>
<tr>
<td>A2N0029D1K (D2K)</td>
<td>1 Pint (0.48)</td>
<td>29</td>
<td>14.19 (360)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7 (2.6)</td>
<td></td>
</tr>
<tr>
<td>A2N0058D1K (D2K)</td>
<td>1 Quart (0.95)</td>
<td>58</td>
<td>23.19 (589)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10 (4.7)</td>
<td></td>
</tr>
<tr>
<td>A3N0029D1K (D2K)</td>
<td>1 Pint (0.48)</td>
<td>29</td>
<td>10.25 (260)</td>
<td>1.13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14 (6.5)</td>
<td></td>
</tr>
<tr>
<td>A3N0045D1K (D2K)</td>
<td>1 Quart (0.95)</td>
<td>58</td>
<td>16.19 (411)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>18 (8.1)</td>
<td></td>
</tr>
<tr>
<td>A3N0116D1K (D2K)</td>
<td>1.5 Quart (1.42)</td>
<td>90</td>
<td>19.84 (481)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>22 (9.8)</td>
<td></td>
</tr>
<tr>
<td>A3N0183D1K (D2K)</td>
<td>1/2 Gal. (1.90)</td>
<td>116</td>
<td>22.56 (573)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>25 (11.1)</td>
<td></td>
</tr>
<tr>
<td>A4N0116D1K (D2K)</td>
<td>1 Pint (0.48)</td>
<td>29</td>
<td>11.63 (295)</td>
<td>1.13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>19 (9.3)</td>
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</tr>
<tr>
<td>A4N0347D1K (D2K)</td>
<td>1-1/2 Gal. (6.69)</td>
<td>347</td>
<td>16.19 (411)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>28 (12.7)</td>
<td></td>
</tr>
<tr>
<td>A4N0578D1K (D2K)</td>
<td>2-1/2 Gal. (9.47)</td>
<td>758</td>
<td>25.19 (640)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>35 (15.9)</td>
<td></td>
</tr>
<tr>
<td>A6N023D1K (D2K)</td>
<td>1 Gal. (3.79)</td>
<td>231</td>
<td>17.38 (441)</td>
<td>1.13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>35 (15.9)</td>
<td></td>
</tr>
<tr>
<td>A6N0578D1K (D2K)</td>
<td>2-1/2 Gal. (9.47)</td>
<td>758</td>
<td>30.63 (778)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>41 (18.6)</td>
<td></td>
</tr>
<tr>
<td>A6N0924D1K (D2K)</td>
<td>4 Gal. (15.1)</td>
<td>924</td>
<td>43.81 (1113)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>46 (21.1)</td>
<td></td>
</tr>
<tr>
<td>A6N1155D1K (D2K)</td>
<td>5 Gal. (18.3)</td>
<td>1155</td>
<td>52.63 (1337)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>54 (24.5)</td>
<td></td>
</tr>
<tr>
<td>A6N1733D1K (D2K)</td>
<td>7-1/2 Gal. (28.4)</td>
<td>1733</td>
<td>74.63 (1896)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>60 (27.6)</td>
<td></td>
</tr>
<tr>
<td>A6N2310D1K (D2K)</td>
<td>10 Gal. (37.9)</td>
<td>2310</td>
<td>96.63 (2454)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>67 (30.3)</td>
<td></td>
</tr>
<tr>
<td>A7N0578D3KPL (D2K)</td>
<td>2-1/2 Gal. (9.47)</td>
<td>758</td>
<td>27.25 (692)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>83 (37.8)</td>
<td></td>
</tr>
<tr>
<td>A7N1155D3KPL (D2K)</td>
<td>5 Gal. (18.9)</td>
<td>1155</td>
<td>42.25 (1073)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>124 (56.3)</td>
<td></td>
</tr>
<tr>
<td>A7N1733D3KPL (D2K)</td>
<td>7-1/2 Gal. (28.4)</td>
<td>1733</td>
<td>57.25 (1454)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>165 (74.7)</td>
<td></td>
</tr>
<tr>
<td>A7N2310D3KPL (D2K)</td>
<td>10 Gal. (37.9)</td>
<td>2310</td>
<td>72.25 (1835)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>192 (87.0)</td>
<td></td>
</tr>
<tr>
<td>A7N3465D3KPL (D2K)</td>
<td>15 Gal. (56.8)</td>
<td>3465</td>
<td>102.25 (2597)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>260 (117.8)</td>
<td></td>
</tr>
<tr>
<td>A8N0578D3KPL (D2K)</td>
<td>5 Gal. (18.3)</td>
<td>5775</td>
<td>162.25 (4211)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>327 (148.5)</td>
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</tr>
<tr>
<td>A8K045D3KPL (D2K)</td>
<td>10 Gal. (37.9)</td>
<td>10450</td>
<td>48.75 (1238)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>595 (270)</td>
<td></td>
</tr>
<tr>
<td>A8K062D3KPL (D2K)</td>
<td>20 Gal. (75.7)</td>
<td>20620</td>
<td>66.94 (1700)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>758 (344)</td>
<td></td>
</tr>
<tr>
<td>A8K077D3KPL (D2K)</td>
<td>25 Gal. (94.6)</td>
<td>25775</td>
<td>85.06 (2161)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>920 (417)</td>
<td></td>
</tr>
<tr>
<td>A8K093D3KPL (D2K)</td>
<td>30 Gal. (114)</td>
<td>30930</td>
<td>103.18 (2622)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1083 (491)</td>
<td></td>
</tr>
<tr>
<td>A12K077D5K (D2K)</td>
<td>25 Gal. (94.6)</td>
<td>25775</td>
<td>121.37 (3083)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1246 (565)</td>
<td></td>
</tr>
<tr>
<td>A12K093D5K (D2K)</td>
<td>30 Gal. (114)</td>
<td>30930</td>
<td>141.75 (3538)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1346 (606)</td>
<td></td>
</tr>
<tr>
<td>A12K1155D5K (D2K)</td>
<td>40 Gal. (151)</td>
<td>40950</td>
<td>162.25 (4211)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1490 (676)</td>
<td></td>
</tr>
<tr>
<td>A12K1420D5K (D2K)</td>
<td>50 Gal. (189)</td>
<td>50950</td>
<td>181.75 (4558)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1799 (816)</td>
<td></td>
</tr>
</tbody>
</table>

The Minimum Design Metal Temperature (MDMT) for ASME certified 7" and 9" piston accumulators presented in this section is 20°F (-7°C).

Piston accumulators are available with MDMT below -40°F (-40°C). Consult factory for options.

Notes:
- For Water Service add “W” after construction code, see “How to Order” information.
- Standard accumulators are designated D1K in model number, metric are D2K.
- See “Port Options” for complete listing of standard and optional ports.
- ASME/DNV/ABS/AS1210/SECO/GOST/ICE certified accumulators and gas bottles are available.
- When accumulators are to be used with gas bottles, order “Accumulators for Use with Gas Bottles.”
- 3", 4" & 6" bores standard with cored gas valves.
- Poppet type (L07689000K) gas valve available as an option.

Parker Hannifin
Global Accumulator Division
United States
**2000 PSI (139 Bar Metric) Piston Accumulators for Oil and Water Service**

We offer a 2000 PSI accumulator in 12" bore size and a variety of capacities for industries where lower pressure ratings can be used.

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### Models, Capacities & Dimensions

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Fluid Volume</th>
<th>Gas Volume</th>
<th>Oil Service</th>
<th>Weight lbs (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A12K4620K1K (K2K)</td>
<td>20 (75.71)</td>
<td>4620</td>
<td>5000</td>
<td>1048 (475)</td>
</tr>
<tr>
<td>A12K5775K1K (K2K)</td>
<td>25 (94.64)</td>
<td>5775</td>
<td>4000</td>
<td>1193 (541)</td>
</tr>
<tr>
<td>A12K6930K1K (K2K)</td>
<td>30 (113.56)</td>
<td>6930</td>
<td>3000</td>
<td>1338 (607)</td>
</tr>
<tr>
<td>A12K9240K1K (K2K)</td>
<td>40 (151.42)</td>
<td>9240</td>
<td>2000</td>
<td>1628 (738)</td>
</tr>
<tr>
<td>A12K11550K1K (K2K)</td>
<td>50 (189.27)</td>
<td>11550</td>
<td>1430</td>
<td>1918 (870)</td>
</tr>
</tbody>
</table>

### Notes:

- For Water Service add “W” after construction code, see “How to Order” information.
- Most SAE #32 fittings are rated for 2000 PSI. If 2000 to 3000 PSI service is required, two options are available; order accumulator with optional standard 2" SAE Code 61 4-bolt flange port by specifying “PL” code when ordering or order the accumulator with a SAE #24 port or smaller. See “Port Options” for dimensions and “How to Order”.

---

High-Pressure Poppet-Type Gas Valve

3 Mounting Holes

E Thread

G Depth

F Dia.

Bolt Circle

D Hydraulic Port

Threaded Port Configuration

Flange Port Configuration

(See page 35)
Optional Ports
The following ports are available as options on all Series 3000 piston accumulators.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>#5 3&quot;</td>
<td>TA</td>
<td>1/2&quot;</td>
<td>PT</td>
<td>MT</td>
<td>3&quot;</td>
</tr>
<tr>
<td>#6 3/4&quot;</td>
<td>TB</td>
<td>3/4&quot;</td>
<td>PU</td>
<td>MU</td>
<td>3&quot;</td>
</tr>
<tr>
<td>#8 1&quot;</td>
<td>TC</td>
<td>1&quot;</td>
<td>PV</td>
<td>MV</td>
<td>3&quot;</td>
</tr>
<tr>
<td>#10 11/4&quot;</td>
<td>TI</td>
<td>11/4&quot;</td>
<td>PW</td>
<td>MW</td>
<td>3&quot;</td>
</tr>
<tr>
<td>#12 11/2&quot;</td>
<td>TD</td>
<td>11/2&quot;</td>
<td>PJ</td>
<td>MJ</td>
<td>4&quot;</td>
</tr>
<tr>
<td>#16 2&quot;</td>
<td>TE</td>
<td>2&quot;</td>
<td>PL</td>
<td>ML</td>
<td>6&quot;</td>
</tr>
<tr>
<td>#20 21/2&quot;</td>
<td>TF</td>
<td>21/2&quot;</td>
<td>PM</td>
<td>MM</td>
<td>6&quot;</td>
</tr>
<tr>
<td>#24 4&quot;</td>
<td>TG</td>
<td>4&quot;</td>
<td>3&quot;</td>
<td>PN</td>
<td>7&quot;</td>
</tr>
</tbody>
</table>

Note:
- 3000 PSI SAE Code 61 (ISO 6162) Flange dimensions are shown below.
- BSPT and Metric ports available, consult factory.

SAE 4-Bolt Flange Port Dimensions
Standard Pressure - 3000 PSI (207 Bar)

<table>
<thead>
<tr>
<th>Flange Size</th>
<th>SAE Code 61 Flange Dimensions (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>in</td>
<td>A</td>
</tr>
<tr>
<td>11/2&quot;</td>
<td>1/2 - 13</td>
</tr>
<tr>
<td>2&quot;</td>
<td>1/2 - 13</td>
</tr>
<tr>
<td>21/2&quot;</td>
<td>1/2 - 13</td>
</tr>
<tr>
<td>3&quot;</td>
<td>5/8 -11</td>
</tr>
</tbody>
</table>

Note: Some flanges using this bolt pattern are not rated for 3000 PSI.

<table>
<thead>
<tr>
<th>Flange Size</th>
<th>Metric ISO6162 Flange Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm</td>
<td>A</td>
</tr>
<tr>
<td>38</td>
<td>M12</td>
</tr>
<tr>
<td>51</td>
<td>M12</td>
</tr>
<tr>
<td>64</td>
<td>M12</td>
</tr>
<tr>
<td>76</td>
<td>M16</td>
</tr>
</tbody>
</table>

Note: Some flanges using this bolt pattern are not rated for 3000 PSI.
Seal Kits
Seal Kits are available for all piston accumulator models. When ordering seal kits, please supply the complete model and serial numbers from the name plate and specify fluid type and operating temperature.

Parts List
1. Body
2. Hydraulic Cap
3. Gas Cap
4. Piston
5. V-O-ring Piston Seal
5A. V-O-ring Backups
6. PTFE Glide Rings
7. O-ring
7A. O-ring Backup
8. Gas Valve
8A. Gas Valve O-ring
9. Gas Valve Guard
9A. Screw

3000 PSI Seal Kit Numbers (Includes items 5, 5A, 6, 7, 7A, 8A)

<table>
<thead>
<tr>
<th>Material</th>
<th>2&quot;</th>
<th>3&quot;</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>7&quot;</th>
<th>9&quot;</th>
<th>12&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buna-Nitrile (Std.)</td>
<td>RK0200K000</td>
<td>RK0300K000</td>
<td>RK0400K000</td>
<td>RK0600K000</td>
<td>RK0700K000</td>
<td>RK0900K000</td>
<td>RK1200K000</td>
</tr>
<tr>
<td>Fluorocarbon</td>
<td>RK0200E000</td>
<td>RK0300E000</td>
<td>RK0400E000</td>
<td>RK0600E000</td>
<td>RK0700E000</td>
<td>RK0900E000</td>
<td>RK1200E000</td>
</tr>
<tr>
<td>EPR</td>
<td>RK0200D000</td>
<td>RK0300D000</td>
<td>RK0400D000</td>
<td>RK0600D000</td>
<td>RK0700D000</td>
<td>RK0900D000</td>
<td>CF*</td>
</tr>
<tr>
<td>Hydrogenated Nitrile</td>
<td>RK0200H000</td>
<td>RK0300H000</td>
<td>RK0400H000</td>
<td>RK0600H000</td>
<td>RK0700H000</td>
<td>RK0900H000</td>
<td>CF*</td>
</tr>
<tr>
<td>Low Temp Nitrile</td>
<td>RK0200Q000</td>
<td>RK0300Q000</td>
<td>RK0400Q000</td>
<td>RK0600Q000</td>
<td>RK0700Q000</td>
<td>RK0900Q000</td>
<td>RK1200Q000</td>
</tr>
</tbody>
</table>

*CF = Consult Factory

Mounting, Charging & Gauging Accessories
Parker offers a wide variety of mounting, charging and gauging accessories. See “Accumulator Accessories.”

Special Options
If your application requires a piston accumulator, gas bottle, or special option that falls outside of Parker’s broad offering, consult your local distributor, Parker representative, or the factory with your specific requirements. Parker has the manufacturing and engineering expertise to design and build piston accumulators to your exacting requirements, from simple modifications of standard units to complete designs. Some example of Parker’s past special designs include:

- Large Bore
- High Pressure
- Special and Stainless Steel Materials
- Piston Position and Velocity Sensors and Switches
- Special Seals
- Non-Standard Capacities
- Tie Rod Construction
- Special Certifications
- Spring & Weight Loaded
- Extreme Temperatures

Consult the experts at Parker with your next piston accumulator requirement!
## How to Order Piston Accumulators

Piston accumulators and gas bottles can be specified by using the symbols in the chart below to develop a model number. Select only those symbols that represent the features desired, and place them in the sequence indicated by the example at the top of the chart.

### Design Pressure

<table>
<thead>
<tr>
<th>Design Number</th>
<th>Capacity</th>
<th>Type of Construction</th>
<th>Nominal Bore Size</th>
<th>Design Pressure</th>
<th>Design Size</th>
<th>Seal Compound</th>
<th>Hyd. Port Modification</th>
<th>Gas Port Modification</th>
</tr>
</thead>
</table>
| 2310          | 29 cu. in. (0.48 liters) | A, K | 3 inches | 3,000 PSI (All Bore Sizes) | A | 3
| 2000 PSI (12" Bore only) | A | 3
| 2310          | 58 cu. in. (0.95 liters) | A, K | 4 inches | 3,000 PSI (All Bore Sizes) | A | 3
| 2000 PSI (12" Bore only) | A | 3
| 2310          | 70 cu. in. (1.14 liters) | A, K | 6 inches | 3,000 PSI (All Bore Sizes) | A | 3
| 2000 PSI (12" Bore only) | A | 3
| 2310          | 116 cu. in. (1.90 liters) | A, K | 7 inches | 3,000 PSI (All Bore Sizes) | A | 3
| 2000 PSI (12" Bore only) | A | 3
| 2310          | 183 cu. in. (3.00 liters) | A, K | 9 inches | 3,000 PSI (All Bore Sizes) | A | 3
| 2000 PSI (12" Bore only) | A | 3
| 2310          | 24 cu. in. (0.40 liters) | A, K | 12 inches | 3,000 PSI (All Bore Sizes) | A | 3
| 2000 PSI (12" Bore only) | A | 3

### Nominal Bore Size

- **A**: Accumulator
- **B**: Gas Bottle

### Type of Construction

- **N**: Threaded both ends, non-A.S.M.E. maT1 standard on 2", 3", 4", 6", & 7" (3000 PSI fatigue design tested)
- **K**: Threaded both ends, A.S.M.E. maT1 standard, NOT A.S.M.E. stamped on 7" & up
- **L**: Same as K with A.S.M.E. approval stamp 7" & up. Available as special on smaller sizes
- **E**: Threaded both ends, CE marked (1 liter and above) or SEP marked (under 1 liter)

### Options

- **W**: Water Service
- **F**: SAE Fuse Port *
- **G**: SAE Fuse Port *, Water Service
- **M**: L0768900K Gas Valve
- **K**: L0768900K Gas Valve, Water Service
- **P**: SAE Fuse Port* and L0768900K
- **R**: SAE Fuse Port* and L0768900K, Water Service

* Safety fuse assembly not included.

**Note:** ASME and CRN units are available upon request.

### Example of Optional Port Accumulator

To order safety fuse and rupture disk installed on the accumulator add the rupture pressure to the end of the model number.

**Example:** A7LF2310D3KPL-3000.

Rupture disks are available in 100 psi increments starting at 3000 psi.