Series “BA” Bladder Accumulators

Maintenance Instructions

• 10 cu. in. through 15 Gallons
• 250 bar & 350 bar Standard
• 3,000 & 5,000 PSI Standard
• Bottom & Conventional
  Top Repairable

Installation

All accumulators shipped from the factory will be precharged to a nominal pressure in order to seat the poppet valve on the hydraulic port. In this case the precharge will not be listed on the label. However, in some cases they will be shipped with a nitrogen charge, the value of which will be marked on the label/nameplate.

Keep the hydraulic port covered to keep out foreign material until ready to make the hydraulic connections.

The accumulator should be mounted within 25° of vertical with the hydraulic port on the bottom. It should also be rigidly mounted using appropriate mounting hardware, which is shown in the Accumulator Accessories section of this catalog. The hydraulic circuit, which contains a connection to the accumulator, should be designed so that it automatically discharges all hydraulic fluid from the accumulator when the equipment is turned off.
Installation
Most accumulators shipped from the factory carry a nominal pre-charge. However, in some cases they will be shipped with some amount of nitrogen charge, the value of which will be stamped on the nameplate.

Keep the hydraulic port covered to keep out foreign material until ready to make the hydraulic connections.

The accumulator should be mounted within 25° of vertical with the hydraulic port on the bottom. It should also be rigidly mounted using appropriate mounting hardware, which is shown in the Accumulator Accessories section of this catalog. The hydraulic circuit, which contains a connection to the accumulator, should be designed so that it automatically discharges all hydraulic fluid from the accumulator when the equipment is turned off.

Example 1

![Diagram of basic safety equipment for a single accumulator with permanently connected safety valve and gauge, gauge control port, manually operated shut-off device, pressure release device and return line to the reservoir. Safety components may be connected by lines and/or installed in a safety block. The accumulator must always be protected with sufficient discharge capacity. If a check valve prevents flow back to the pressure source (pump), a shut-off device is not required for safety reasons but may be appropriate for service and maintenance.]

Example 2

![Diagram of configuration with additional pressure release device which opens automatically in the case of circuit break down.]

Configuration with additional pressure release device which opens automatically in the case of circuit break down.
Example 3

Configuration with a 3/2-way-directional-control which simultaneously serves to isolate the accumulator from the pressure line and release pressure to the return line. The safety valve is permanently communicating with the pressure line, therefore also protecting the circuit. The accumulator is either protected by the safety valve or connected to the return line.

Example 4

The above configuration shows a group of several accumulators connected with a single pressure line which is permanently connected with a gauge and a safety valve. Each individual accumulator may be isolated from the pressure line by a shut-off device and released by a pressure device to a return line for maintenance purposes. An external control gauge connected to a quick coupling allows observation of the pressure at the fluid port of each individual accumulator.
Example 5

Configuration similar to example 1 but with several accumulators each equipped with a safety block. Each safety block includes a safety valve, shut-off device, pressure release device and ports for the pressure line, the return line, gauge, control gauge and the accumulator itself. This configuration meets all safety requirements even for several pressure sources.

Example 6

Configuration for a transfer type accumulator with additional gas bottles. Safety equipment for filling procedures is not shown.
Pre-Charging

Use only an inert gas such as nitrogen for precharging piston accumulators. Do not use oxygen or shop air. included.

If water pumped nitrogen is not available, oil-pumped nitrogen may be used. (C.G.A. Standards: Nitrogen gas bottles for water pumped nitrogen has a right-hand valve thread which requires charging and gauging assembly †144595XX00 for units up to 3000 PSI. Oil-pumped nitrogen requires a left-handed valve thread (use †144596XX00).

It is recommended to use charging and gauging assembly as shown in Figure 1 (Part †144595XX00, right-hand thread; Part †144596XX00, left-hand thread), and in Figure 4 Part †087100XX00 for 1-15 gallon & Part †087102XX00 for 10-150 cu. in. accumulator rated for 3,000 PSI or less. For accumulators rated for 5,000 PSI, as well as the 25-40 gallon, 3,000 PSI accumulators, use assembly shown in Figure 6 (Part †870816XX00). If other equipment is used, make sure it is compatible with the gas valve assembly and nitrogen source. All components must be rated for a pressure at least as high as the nitrogen source. It is strongly recommended that the nitrogen bottle used have the appropriate pressure high pressure regulator (not included).

Make sure nitrogen supply is shut off. Attach hose to nitrogen bottle. If accumulator has a gas valve as shown in Figure 8A or 8B, follow steps A through L and skip steps F and J. If accumulator has a gas valve as shown in Figure 9, follow steps A through L and skip steps E and I.

Accumulators having gas valve per Figure 8A or 8B

(A) Remove gas valve guard and gas valve cap.

(B) Back gas chuck “T” handle all the way out (counterclockwise) before attaching charging assembly to accumulator gas valve.

(C) Close bleed valve.

(D) Making sure not to loop or twist the hose, attach swivel nut to gas valve and tighten (10-15 in. lb.) (11.5-17 cm kg).

(E) Turn gas chuck “T” handle until the gauge starts showing the pressure in the accumulator. Do not turn the “T” handle all the way down, as it will damage the valve core.

(F) For gas valves as shown in Figure 9, hold gas valve at point “C” with one (1) wrench while unscrewing hex nut at point “D” with a second wrench. This will open the poppet inside the gas valve. Note: Three (3) turns will fully open the valve.

(G) Crack open nitrogen bottle or regulator valve and slowly fill accumulator. Caution: If the precharge is not done slowly, the bladder may suffer permanent damage. Shut off when gauge indicates 100 PSI above desired precharge. (Note: It is recommended that precharge pressure be at least 25% of maximum system pressure.) Damage to bladder may occur if this ratio is not maintained or exceeded. For shock suppression applications, precharge is usually set at about 65% of system pressure. When the accumulator is used to supplement pump flow, auxiliary power supply or leakage compensation, precharge is usually set at approximately 90% of minimum system pressure.

(H) Let the precharge set for 10 to 15 minutes. This will allow the gas temperature to stabilize. If the desired precharge is exceeded, close nitrogen bottle valve, then slowly open bleed valve. Do not reduce precharge by depressing valve core with a foreign object. High pressure may rupture rubber valve seat.

(I) When finished precharging accumulator, turn “T” handle all the way out on gas chuck, then open bleed valve. not

(J) For gas valves as shown in Figure 9, with a wrench, tighten hex nut at point “D” to close internal poppet (5-8 ft. lbs.) (5.7-9.2 cm kg).

(K) Hold gas valve to keep from turning, loosen swivel nut, remove assembly. Check for precharge leak using a common leak reactant.

(L) Replace gas valve cap (10-15 in. lbs.) (11.5-17 cm kg) and guard. (Gas valve cap serves as a secondary seal.)

† “XX” Denotes to gauge pressure.
For accumulators rated for 5000 PSI, use gaging assembly in Figure 7 (Part #871372XX00) and follow steps 8 through 14.

### 3000 PSI RATED UNITS

1. Remove gas valve guard and gas valve cap.
2. Close bleed valve and turn “T” handle all the way out.
3. Attach gaging assembly to gas valve or to gas valve extension and tighten swivel nut (10-15 in. lb.) (11.5-17 cm kg), when using gaging assembly in Figure 1.
4. Install gas valve o-ring on the gas valve, and attach gaging assembly to valve stem. Tighten assembly (25-30 in. lb.) (29-35 cm kg) when using gaging assembly in Figure 4.
5. Turn “T” handle all the way down, which will depress core in gas valve and check pressure.
6. To remove gaging assembly, turn “T” handle all the way out and then open bleeder valve.
7. Hold gas valve from turning, loosen swivel nut and remove assembly.
8. Remove gas valve guard and gas valve cap.
10. Attach gaging assembly to gas valve and tighten swivel nut (10-15 in. lb.) (11.5-17 cm kg).
11. Referring to Figure 9, hold gas valve at point “C” with one (1) wrench while unscrewing hex nut at point “D” with a second wrench. This will open the poppet inside the gas valve. Note, four (4) turns will fully open poppet. Check pre-charge pressure.
12. With wrench, tighten hex nut at point “D” to close internal poppet (10-15 in. lb.) (11.5-17 cm kg).
13. Hold gas valve at point “C” with a wrench and remove swivel nut assembly.
14. Replace cap on gas valve (10-15 in. lb.) (11.5-17 cm kg) and install gas valve guard.

### Removal of Accumulator From Hydraulic System

Shut equipment down and make certain that hydraulic pressure at the accumulator is at zero.

Remove gas valve guard and gas valve cap.

### 3000 PSI RATED UNITS

Accumulators rated for 3000 PSI will have a gas valve as shown in Figure 8A or 8B. For these units, attach gaging assembly (Part #085122XX00) or (Part #087103XX00) for 10 - 150 cubic inch, and (Part #087101XX00) for 1-15 gallon.

Open bleed valve and release all the gas pressure. Detach gaging assembly and, using valve core removing tool (Part #582441XX00), remove valve core.

Remove accumulator from hydraulic system.

### Pre-charge Checking Procedure

Using appropriate valve in the hydraulic system, discharge all oil from accumulator.

For accumulators rated for 3000 PSI, either use gaging assembly in Figure 2 (Part #085122XX00) or gaging assembly in Figure 5 (Part #087101XX00) and follow Steps 1 through 7.

**Maintenance**

Little maintenance is required for a bladder accumulator. If there is external leakage, tighten all connections. If leakage continues, remove accumulator from system and replace faulty components. After original installation, check pre-charge once during first week to see that no leak has developed. Thereafter, check pre-charge monthly. Check pre-charge if the system is acting sluggish.

If pre-charge is low, check gas valve for leakage and recharge. If there is no gas in bladder and fluid appears at gas valve, unit must be removed and bladder replaced.

**Bladder Accumulators**

Catalog HY10-1630/US

**Maintenance Instructions**

Remove accumulator from hydraulic system. If there is no gas in bladder and fluid appears at gas valve, unit is at zero.

Remove gas valve guard and gas valve cap.

For accumulators rated for 5000 PSI, use gaging assembly in Figure 7 (Part #871372XX00) and follow steps 8 through 14.

### 3000 PSI RATED UNITS

1. Remove gas valve guard and gas valve cap.
2. Close bleed valve and turn “T” handle all the way out.
3. Attach gaging assembly to gas valve or to gas valve extension and tighten swivel nut (10-15 in. lb.) (11.5-17 cm kg), when using gaging assembly in Figure 1.
4. Install gas valve o-ring on the gas valve, and attach gaging assembly to valve stem. Tighten assembly (25-30 in. lb.) (29-35 cm kg) when using gaging assembly in Figure 4.
5. Turn “T” handle all the way down, which will depress core in gas valve and check pressure.
6. To remove gaging assembly, turn “T” handle all the way out and then open bleeder valve.
7. Hold gas valve from turning, loosen swivel nut and remove assembly.
8. Remove gas valve guard and gas valve cap.
10. Attach gaging assembly to gas valve and tighten swivel nut (10-15 in. lb.) (11.5-17 cm kg).
11. Referring to Figure 9, hold gas valve at point “C” with one (1) wrench while unscrewing hex nut at point “D” with a second wrench. This will open the poppet inside the gas valve. Note, four (4) turns will fully open poppet. Check pre-charge pressure.
12. With wrench, tighten hex nut at point “D” to close internal poppet (10-15 in. lb.) (11.5-17 cm kg).
13. Hold gas valve at point “C” with a wrench and remove swivel nut assembly.
14. Replace cap on gas valve (10-15 in. lb.) (11.5-17 cm kg) and install gas valve guard.

### Removal of Accumulator From Hydraulic System

Shut equipment down and make certain that hydraulic pressure at the accumulator is at zero.

Remove gas valve guard and gas valve cap.

### 3000 PSI RATED UNITS

Accumulators rated for 3000 PSI will have a gas valve as shown in Figure 8A or 8B. For these units, attach gaging assembly (Part #085122XX00) or (Part #087103XX00) for 10 - 150 cubic inch, and (Part #087101XX00) for 1-15 gallon.

Open bleed valve and release all the gas pressure. Detach gaging assembly and, using valve core removing tool (Part #582441XX00), remove valve core.

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Using appropriate valve in the hydraulic system, discharge all oil from accumulator.

For accumulators rated for 3000 PSI, either use gaging assembly in Figure 2 (Part #085122XX00) or gaging assembly in Figure 5 (Part #087101XX00) and follow Steps 1 through 7.

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If pre-charge is low, check gas valve for leakage and recharge. If there is no gas in bladder and fluid appears at gas valve, unit must be removed and bladder replaced.

**Pre-charge Checking Procedure**

Using appropriate valve in the hydraulic system, discharge all oil from accumulator.

For accumulators rated for 3000 PSI, either use gaging assembly in Figure 2 (Part #085122XX00) or gaging assembly in Figure 5 (Part #087101XX00) and follow Steps 1 through 7.
Disassembly of Bottom Repairable Accumulators

Figure 1. Once the accumulator has been removed from the equipment, the accumulator body should be secured in a vise, preferably a chain vise. If a standard jaw vise is used, brass inserts should be used to protect the accumulator hydraulic port assembly from damage. Clamp on wrench flats only when using a jaw vise to prevent accumulator from turning.

Figure 2. Remove bleeder plug (if the accumulator is equipped with one) on hydraulic port assembly. Using a spanner wrench, remove lock nut from the hydraulic port assembly; use an adjustable wrench on the flats located on the port assembly to prevent port assembly from rotating.

Figure 3. Remove spacer, then push the hydraulic port assembly into the shell prior to Step 4.

Figure 4. Insert hand into the accumulator shell and remove the o-ring backup, o-ring, metal backup. Separate the anti-extrusion ring from the hydraulic port. Fold anti-extrusion ring to enable removal of anti-extrusion ring from shell.

Figure 5. Remove hydraulic port plug from accumulator shell.

Figure 6. Remove jam nut from bladder valve stem. Secure valve stem from twisting with an appropriate wrench applied to the valve stem flats.

Figure 7. Fold bladder and pull out of accumulator shell. A slight twisting motion while pulling on the bladder reduces effort required to remove bladder from shell. If bladder is slippery, hold with a cloth.

Clean & Inspect

Cleaning: All metal parts should be cleaned with a cleaning agent. Seals and soft parts should be wiped clean.

Bladder: Inflate bladder to normal size. Wash bladder with a soap solution. If soap solution bubbles, discard bladder. After testing, deflate bladder immediately.

Disassembly of Conventional Top-Repairable Accumulators

The conventional top-repairable accumulator uses a gas-end adapter which is retained in the shell with an anti-extrusion ring exactly like those used in port assemblies (see Figure 10).

1. Make sure the gas is relieved from the accumulator. (See Removal of Accumulator from System).

2. Remove jam nut from bladder gas valve stem using a 1-5/16” socket wrench.

Maint.

Parker Hannifin
Global Accumulator Division
United States

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3. Using a spanner wrench, remove outer lock nut on the gas end adapter.
4. Push the gas end adapter complete with the bladder into the shell.
5. Insert hand into accumulator, remove the o-ring back-up, o-ring and metal back-up. Separate the anti-extrusion ring from the gas end adapter.
6. Fold the anti-extrusion ring and remove from shell. See Figure 4.
7. Remove gas end adapter from shell.
8. Remove bladder from shell.
   NOTE: Conventional top repairable accumulators may be repaired by removing the bladder from either the hydraulic end or the gas end of the accumulator.

Clean & Inspect
Cleaning: All metal parts should be cleaned with a cleaning agent. Seals and soft parts should be wiped clean.
Bladder: Inflate bladder to normal size. Wash bladder with a soap solution. If soap solution bubbles, discard bladder. After testing, deflate bladder immediately.
Hydraulic Port: Inspect assembly for damage; check the poppet plunger to see that it spins freely and functions properly. In cases where the accumulator is used with water, check assembly for rust and/or defective plating. If rust is detected, clean with commercial rust remover. If parts are pitted, replace with new components. If protective plating is damaged, replace with new components.
Seals: Check anti-extrusion ring and soft seals for damage and wear; replace all worn or damaged seals with original equipment seals from the Accumulator Division.
Shell: After shell has been cleaned with a cleansing agent, check the inside and outside of shell. Special attention should be given to the area where the gas valve and hydraulic assembly pass through the shell. Any nicks or damages in this area could destroy the accumulator bladder or damage new seals. If these areas are pitted, consult factory.

Bladder Assembly in Conventional Top-Repairable Accumulators
1. Spray the inside of the accumulator shell with a liberal amount of clean system hydraulic fluid to lubricate and cushion the bladder. Make sure the entire internal surface of the shell is lubricated.
2. With all air completely exhausted from bladder, collapse bladder and fold longitudinally in a compact roll.
3. Install the gas end adapter on the bladder and secure with jam nut.
4. Install bladder into accumulator shell.
5. Insert gas end adapter.
6. Fold anti-extrusion ring and place inside accumulator.
7. Reaching inside the accumulator, insert the gas end adapter through the anti-extrusion ring and pull into place. The steel surface on anti-extrusion ring should face outward.
8. Holding the gas end adapter in place, fill accumulator with approximately 50 PSI nitrogen. This will hold the gas end adapter in place.
9. Install the metal backup, o-ring and o-ring backup.
10. Install the outer spacer.
11. Install the outer locknut.

Hydraulic Port Assembly Installation
1. Holding the hydraulic port assembly by the threaded end, insert the poppet end into the shell fluid port. Lay complete assembly inside shell.

   Figure 11. Fold anti-extrusion ring to enable insertion into the shell. Once the anti-extrusion ring has cleared the fluid port opening, place the anti-extrusion ring on the poppet assembly with the steel collar facing toward the shell fluid port.

3. Pull the threaded end of the port assembly through the shell fluid port until it seats solidly into position on the shell fluid port opening.

4. Figure 12. With port assembly firmly in place, install valve core into the bladder stem. Slowly pressurize the bladder, using dry nitrogen with sufficient pressure (approximately 40-50 PSI) to hold poppet assembly in place so both hands are free to continue with assembly.

5. Figure 13. Install metal backup washer over hydraulic port assembly and push into the shell fluid port to bottom it out on anti-extrusion ring.

6. Install o-ring over hydraulic port assembly and push it into the shell fluid port until it has bottomed out against washer. CAUTION: Do not twist o-ring.

7. Install o-ring backup over hydraulic port assembly and push until it bottoms against o-ring (1-40 gallon sizes and 5K only).

8. Insert spacer with the smaller diameter of the shoulder facing the accumulator shell.

9. Figure 14. Install the lock-nut on the hydraulic port assembly and tighten securely. This will squeeze the o-ring into position. Use appropriate wrench on flats of port assembly to insure the unit does not turn.

10. Thread bleeder plug into the hydraulic port assembly.

11. Position accumulator so that fluid (same fluid as used in the system) can be poured into the accumulator (add approximately 10% of the accumulator capacity). This fluid will act as a cushion when the accumulator is pre-charged with gas.

12. Pre-charge accumulator to desired pressure. See pre-charge instructions. Install accumulator on machine.
Accumulator Parts
Description

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<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>Shell</td>
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<tr>
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<td>Bladder</td>
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<td>3</td>
<td>O-ring</td>
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<td>4</td>
<td>Valve Core</td>
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<td>5</td>
<td>Lock Nut (Jam)</td>
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<td>7</td>
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<td>O-ring (Gas Valve)</td>
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<td>Back-up Washer (Stem)</td>
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<td>30</td>
<td>O-ring (Stem)</td>
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Suggested Approximate Torque Values

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<th>Description</th>
<th>Torque Values</th>
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Bladder Assembly Part Numbers

Seal Type

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<th>Accumulator Size</th>
<th>-01 Nitrile (NBR)</th>
<th>-04 Hydrin</th>
<th>-06 Butyl</th>
<th>-08 EPR</th>
<th>-28 Fluorocarbon</th>
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<tr>
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<td>707030</td>
<td>706032</td>
<td>706033</td>
<td>706034</td>
<td>706036</td>
</tr>
<tr>
<td>5000 PSI - Ref. Figure F Contains items 2,7,25 &amp; 26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 1/2 Gal.</td>
<td>0850695025</td>
<td>0856656025</td>
<td>0850705025</td>
<td>0851055025</td>
<td>0851045025</td>
</tr>
<tr>
<td>5 Gal.</td>
<td>0850695050</td>
<td>0856656050</td>
<td>0850705050</td>
<td>0851055050</td>
<td>0851045050</td>
</tr>
<tr>
<td>10 Gal.</td>
<td>0850695100</td>
<td>0856656100</td>
<td>0850705100</td>
<td>0851055100</td>
<td>0851045100</td>
</tr>
<tr>
<td>15 Gal.</td>
<td>0850695150</td>
<td>0856656150</td>
<td>0850705150</td>
<td>0851055150</td>
<td>0851045150</td>
</tr>
</tbody>
</table>

*See page140 for items 14-20.
**Contains items 2,3, & 4 as shown in Figure A. ***Contains items 2,3,4,18,19,25 & 26.

Gas Valve Assembly Part Numbers

Seal Type

<table>
<thead>
<tr>
<th>Size</th>
<th>Pressure</th>
<th>Buna-Nitrile -01</th>
<th>Butyl -06</th>
<th>Fluorocarbon -28</th>
<th>EPR -08</th>
<th>Hydrin -04</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - 150 C.I.</td>
<td>3000 PSI</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>1 - 15 Gal.†</td>
<td>3000 PSI</td>
<td>L074210001</td>
<td>L074210003</td>
<td>L074210005</td>
<td>L074210007</td>
<td>L074210009</td>
</tr>
<tr>
<td>25 - 40 Gal.▲</td>
<td>3000 PSI</td>
<td>L074400001</td>
<td>L074400003</td>
<td>L074400005</td>
<td>L074400007</td>
<td>L074400009</td>
</tr>
<tr>
<td>1 - 15 Gal.▲</td>
<td>5000 PSI</td>
<td>L074400001</td>
<td>L074400003</td>
<td>L074400005</td>
<td>L074400007</td>
<td>L074400009</td>
</tr>
</tbody>
</table>

Accumulator Parts Description

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shell</td>
</tr>
<tr>
<td>8</td>
<td>Oil Port Assembly</td>
</tr>
<tr>
<td>9**</td>
<td>Poppet &amp; Plug Assembly</td>
</tr>
<tr>
<td>10</td>
<td>Oil Port (Machined)</td>
</tr>
<tr>
<td>11</td>
<td>Lock Nut Outer</td>
</tr>
<tr>
<td>12</td>
<td>Valve Poppet</td>
</tr>
<tr>
<td>13</td>
<td>Piston Poppet</td>
</tr>
<tr>
<td>14</td>
<td>Spacer</td>
</tr>
<tr>
<td>15</td>
<td>Anti-Extrusion Ring Assembly</td>
</tr>
<tr>
<td>16</td>
<td>Elastic Stop Nut</td>
</tr>
<tr>
<td>17</td>
<td>Spring Stop Nut</td>
</tr>
<tr>
<td>18</td>
<td>O-ring</td>
</tr>
<tr>
<td>19</td>
<td>O-ring Back-up</td>
</tr>
<tr>
<td>20</td>
<td>O-ring Back-up Metal</td>
</tr>
<tr>
<td>22***</td>
<td>Bleeder Plug</td>
</tr>
<tr>
<td>23</td>
<td>Dust Cap Oil Port</td>
</tr>
<tr>
<td>27</td>
<td>O-Ring (SAE Bleed Plug)</td>
</tr>
</tbody>
</table>

* Oil Port Assembly contains items 10 through 23.
** Port & Poppet Assembly contains items 10, 12, 13, 16, 17, 22 & 23.
*** Bleeder Plug for SAE straight thread port assemblies will also contain an o-ring (Item 27).

Accumulator Repair Tools

1. Bladder Pull Rods—(Bladder Type Accumulator) Pull Rods are available in single or multiple lengths for different size accumulators. The pull rods attach to the gas valve of the bladder for ease of assembly into shell during reassembly.

2. Core Tool—The core tool is used to remove and reinstall the valve core. It is also used to ream valve seat and repair threads.

3. Spanner Wrench—Fits all standard size bladder accumulators. Used to remove hydraulic poppet assembly from accumulator shell.

Accumulator Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pull Rod (1 Qt-2½ Gal)</td>
<td>085109 0250</td>
</tr>
<tr>
<td>Pull Rod (5 Gal)</td>
<td>085109 0500</td>
</tr>
<tr>
<td>Pull Rod (10-11 Gal)</td>
<td>085109 1000</td>
</tr>
<tr>
<td>Pull Rod (15 Gal)</td>
<td>085109 1500</td>
</tr>
<tr>
<td>Core Repair Tool</td>
<td>582441 0000</td>
</tr>
<tr>
<td>Core Installation Tool</td>
<td>300987</td>
</tr>
<tr>
<td>Spanner Wrench</td>
<td>085110 0000</td>
</tr>
</tbody>
</table>

Oil Port Assembly Part Numbers

<table>
<thead>
<tr>
<th>3000 PSI Accumulators</th>
<th>Seal Type</th>
<th>Port &amp; Poppet Assemblies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-01 Buna-Nitrile</td>
<td>-04 Hydrin</td>
</tr>
<tr>
<td>10 Cu. In. 3/4&quot; NPT - Male</td>
<td>L076741*01</td>
<td>L076749*01</td>
</tr>
<tr>
<td>10 Cu. In. SAE #8</td>
<td>L076741*02</td>
<td>L076749*02</td>
</tr>
<tr>
<td>1 Pt. - Qt. 3/4&quot; NPT</td>
<td>L075031*01</td>
<td>L075039*01</td>
</tr>
<tr>
<td>1 Pt. - Qt. SAE #12</td>
<td>L075031*02</td>
<td>L075039*02</td>
</tr>
<tr>
<td>150 Cu. In. 1&quot; NPT</td>
<td>L074151*01</td>
<td>L074159*01</td>
</tr>
<tr>
<td>150 Cu. In. SAE #16</td>
<td>L074151*02</td>
<td>L074159*02</td>
</tr>
<tr>
<td>1 Gal. 1/2&quot; NPT</td>
<td>L074161*01</td>
<td>L074169*01</td>
</tr>
<tr>
<td>1 Gal. SAE #20</td>
<td>L074161*02</td>
<td>L074169*02</td>
</tr>
<tr>
<td>1 Gal. 1/2&quot; SAE Split Flange</td>
<td>L074161*03</td>
<td>L074169*03</td>
</tr>
<tr>
<td>21/2 - 15 Gal. 2&quot; NPT</td>
<td>L074171*01</td>
<td>L074179*01</td>
</tr>
<tr>
<td>21/2 - 15 Gal. SAE #24</td>
<td>L074171*02</td>
<td>L074179*02</td>
</tr>
<tr>
<td>21/2 - 15 Gal. 2&quot; SAE Split Flange</td>
<td>L074171*03</td>
<td>L074179*03</td>
</tr>
<tr>
<td>21/2 - 15 Gal. 1/2&quot; NPT</td>
<td>L074171*04</td>
<td>L074179*04</td>
</tr>
</tbody>
</table>

* = “0” (Std.) Oil Service  * = “S” Water/Chem. Service
### Oil Port Assembly Part Numbers

<table>
<thead>
<tr>
<th>330 Bar Accumulators</th>
<th>Seal Type</th>
<th>Port &amp; Poppet Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulator Size</td>
<td>-01 Buna-Nitrile</td>
<td>-04 Hydrin</td>
</tr>
<tr>
<td>0.16 Liter</td>
<td>3/4&quot; NPT Male</td>
<td></td>
</tr>
<tr>
<td>0.16 Liter</td>
<td>SAE # 8</td>
<td></td>
</tr>
<tr>
<td>0.5 - 1 Liter</td>
<td>3/4&quot; NPT</td>
<td></td>
</tr>
<tr>
<td>0.5 - 1 Liter</td>
<td>SAE # 12</td>
<td></td>
</tr>
<tr>
<td>2.5 Liter</td>
<td>1&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>2.5 Liter</td>
<td>SAE # 16</td>
<td></td>
</tr>
<tr>
<td>2.5 Liter</td>
<td>Metric 33 x 2</td>
<td></td>
</tr>
<tr>
<td>4 Liter</td>
<td>1-1/4&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>4 Liter</td>
<td>SAE # 16</td>
<td></td>
</tr>
<tr>
<td>4 Liter</td>
<td>1-1/4&quot; SAE Code 62</td>
<td></td>
</tr>
<tr>
<td>4 Liter</td>
<td>Metric 42 x 2</td>
<td></td>
</tr>
<tr>
<td>10 - 50 Liter</td>
<td>2&quot; BSPP</td>
<td></td>
</tr>
<tr>
<td>10 - 50 Liter</td>
<td>SAE # 24</td>
<td></td>
</tr>
<tr>
<td>10 - 50 Liter</td>
<td>1-1/2&quot; SAE Code 62</td>
<td></td>
</tr>
<tr>
<td>10 - 50 Liter</td>
<td>Metric 48 x 2</td>
<td></td>
</tr>
</tbody>
</table>

* = “0” (Std.) Oil Service  * = “S” Water/Chem. Service

Consult Factory
### Accumulator Sizing and Selection Software
Parker offers leading edge application assistance, in the form of the InPHorm Accumulator Sizing and Selection Software or visit www.parker.com/accumulator for more information. For further product application assistance, contact Parker's Accumulator Technical Support Group at (815) 636-4100.

### Accumulator Seals
Bladder accumulators are available for use with many operating medias. Fluid should be a non-dangerous liquid as well as precharged with an inert gas such as nitrogen.

### Water & Chemical Service Option (W)
Bladder accumulators are available with a water and chemical resistance options. The (W) designation includes an internally Skotchkoted shell and stainless steel port assembly. The Skotchkote offers added protection against more corrosive fluids. Consult factory for details.

### Bladder Storage
The shelf life of bladders under normal storage conditions is 1 year. However, this period can be extended to 2 years, if the storage conditions are improved.

Normal storage condition consists of the bladder being heat sealed in a black plastic bag and placed in a cool dry place away from sun, ultraviolet and fluorescent light that can cause the bladder to weather check and dry rot, which appear on the bladder surface as cracks.

Extended life can be achieved by having the bladder charged with nitrogen to its full size, and placing it in a heat sealed 5 mil thick black plastic bag. The air in the plastic bag shall be purged using nitrogen prior to sealing. The bag must then be placed in an appropriate size cardboard box, sealed and kept in a cool and dry place away from sunlight and ozone producing equipment.
**"U" Bolts for Piston & Bladder-Type Accumulators**

<table>
<thead>
<tr>
<th>Accumulator Models (3000 PSI)</th>
<th>&quot;U&quot; Bolt Part Number</th>
<th>Dimensions</th>
<th>Wt. (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pint</td>
<td>0862090000</td>
<td>1/2 3-11/16 4-1/16 3-5/8 2</td>
<td>3/8-16</td>
</tr>
<tr>
<td>1 Quart</td>
<td>0854380000</td>
<td>1/2 4-5/8 5-1/8 4-1/2 3</td>
<td>1/2-13</td>
</tr>
<tr>
<td>1 Gallon</td>
<td>0854390000</td>
<td>5/8 6-3/4 7 6-1/8 3-3/4</td>
<td>5/8-11</td>
</tr>
</tbody>
</table>

**Bladder-Type Accumulator**

Bladder-type accumulators should be mounted vertically with the hydraulic port down.

**CAUTION:** Bladder-type accumulators should never be mounted more than 25° angle from the vertical.

**Base Bracket Assembly for Bladder Accumulators**

<table>
<thead>
<tr>
<th>Accumulator Models</th>
<th>Base Bracket Assembly Part Number</th>
<th>Dimensions</th>
<th>Wt. Lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gal. (3K)</td>
<td>1449100000 10.3 7.87 3.62 4.75 8.87 3.85 1.58 0.65 x .87</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2½ - 15 Gal. (3K)</td>
<td>1448720000 10.3 7.87 4.84 6.75 8.87 3.85 1.58 0.65 x .87</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**Clamp Brackets for Small Bladder Accumulators**

<table>
<thead>
<tr>
<th>Bladder Size Cubic Inches</th>
<th>Part No.</th>
<th>Dimensions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8700110238</td>
<td>4.25 3.35 4.29 2.25 / 2.41 1.58</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>8700110358</td>
<td>5.00 3.94 5.62 3.50 / 3.62 2.28</td>
<td></td>
</tr>
</tbody>
</table>
### Clamp Brackets for Bladder-Type Accumulators

<table>
<thead>
<tr>
<th>Bladder Size</th>
<th>Clamp Part No.</th>
<th>Dimensions</th>
<th>Wt. Lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1 Qt., 150 C.I. (Figure A)</td>
<td>1466230000</td>
<td>4.5</td>
<td>3.9</td>
</tr>
<tr>
<td>1 Gal. (Figure A)</td>
<td>1449080000</td>
<td>6.8</td>
<td>6.3</td>
</tr>
<tr>
<td>2½ - 15 Gal. (3K) (Figure B)</td>
<td>1449070000</td>
<td>9.0</td>
<td>8.5</td>
</tr>
<tr>
<td>2½ - 15 Gal. (5K) (Figure B)</td>
<td>1349200000</td>
<td>9.5</td>
<td>8.5</td>
</tr>
</tbody>
</table>

**Figure A**

**Figure B**

**Clamp**