Bottom Repairable Bladder Accumulators

IMPORTANT - READ FIRST

It is most important that these instructions and the Precharge and Maintenance Manual be consulted before installing and commissioning the Accumulator. Failure to comply with the specified procedures may result in possible injury or death. Accumulators must be installed and commissioned by a trained personnel. Particular attention must be paid to the following.

• Use DRY NITROGEN ONLY to precharge accumulator to the desired precharge pressure to avoid risk of explosion due to dieseling effect.
• A pressure relief valve must be installed in the hydraulic system to prevent accidental over pressurization. Relief pressure should not be more than 10% above the accumulator rated pressure.
• A pressure regulator must always be used on the gas bottle while precharging to avoid accidental over pressurization.
• Check for fluid compatibility with the bladder compound to avoid the risk of bladder failure. Consult factory for any assistance with compatibility before commissioning.
• Accumulator shell and parts are protected from corrosion when petroleum based fluids are used. If accumulators are used in aggressive environments, they must be protected with suitable paint and/or protective coating to prevent from corrosion prior to commissioning.
• Accumulators must be securely installed with suitable clamps and brackets recommended in the Servi Fluid Power Inc. accumulator product catalog to prevent any vibrations that result in damage to the accumulator or the installation.
• When replacing gas valves or valve cores, use only Servi approved parts published in the Precharge maintenance manuals to avoid premature failure.
• Prior to any maintenance being done, relieve all nitrogen precharge pressure and hydraulic pressure as instructed in this manual. Failure to relive pressure before any disassembly may result in possible injury or death.
• Protective Gloves: Chemical resistant gloves if necessary must be used to avoid skin contact with aggressive fluids.
• Eye Protection: Safety glasses must be worn before any maintenance is performed on the accumulator.
• Check the maximum allowable working pressure rating stamped on the shell does not exceed the system maximum working pressure. Use only the recommended tools to perform the maintenance.

Precharging

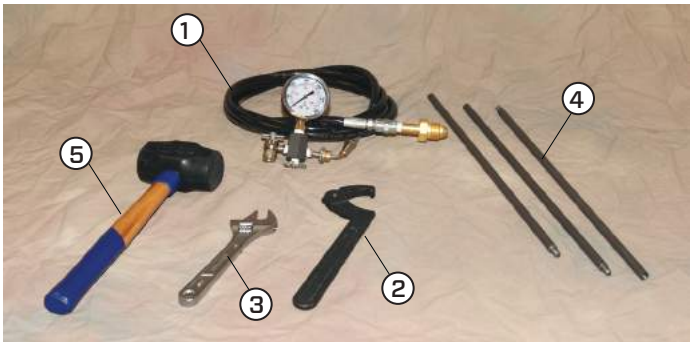
Always use the recommended charging kit and follow the steps in the precharging instruction manual. Incorrect or loss of precharge pressure will reduce the performance of the accumulator as well as potentially damage the bladder.

After precharging check for any leaks through the gas valve or the valve core with soap water. If there is a leak, tighten the valve core or the gas valve to stop the leak. If the leak persist, replace the core or the gas valve as required.

Tighten the lock nut on the fluid port and the jam nut on the valve stem using a wrench.

Installation

Accumulators must be installed securely on the hydraulic system using the recommended brackets and clamps in the catalog. Using only the hydraulic system manifold without any support accessories is not recommended. No welding is allowed on the accumulator. Vertical mounting with fluid port at the bottom is recommended for optimum performance of the accumulator. Allow enough clearance above the accumulator to be able to perform precharge maintenance on a regular basis.



Tool List

Item #	Description
1	Charging Kit
2	Spanner Wrench
3	Crescent Wrench
4	Bladder Pull Rod
5	Rubber Mallet

Parts List

Item #	Description	Item #	Description
1	Accumulator Shell	8	Anti Extrusion Ring
2	Bladder	9	Teflon Back-up
3	Nameplate	10	O-ring
4	Jam Nut	11	O-Ring Back-up (2.5 Gal & Up Only)
5	Gas Valve	12	Spacer
6	Protective Cap	13	Lock Nut
7	Port & Poppet Assy	14	Bleed Plug

Disassembly Instructions for 3000 PSI Bottom Repairable Bladder Accumulators

CAUTION: Always wear safety glasses before conducting any precharge maintenance to avoid risk of eye injury. Maintenance to be preformed by trained personal only.

Before any maintenance is done on the accumulator, ensure there is no residual hydraulic or gas pressure trapped inside the accumulator. Release any hydraulic pressure by opening the bleed valve on the port body. Release any gas pressure using the charging kit.

Only qualified service personnel must perform these maintenance steps.

After disassembly, it is recommended to replace all the rubber parts. All the metallic parts must be thoroughly cleaned with organic solvent.

1) Remove the protective cap and valve seal cap.

2) Using the recommended charging assembly, release all nitrogen pressure until the pressure reads zero on the gauge.

3) Remove the valve core or the gas valve depending on the design of the valve.

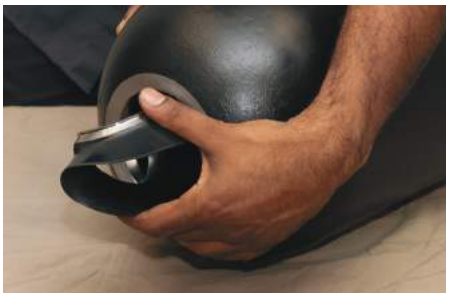
4) Remove the jam nut by holding the valve stem from turning using a wrench. Remove the name plate.

5) Remove bleed plug on the fluid port.

6) Remove the locknut and the spacer. Push the port inside the shell. If the port does not go in freely, there ma be some residual pressure. Consult factory.

7) Remove the seals from the fluid port.

8) Remove the anti-extrusion ring off the port body. Remove the body from the shell. Fold the anti-extrusion ring and remove from the shell.



9) Fold the anti-extrusion ring and remove It from the shell. Care should be taken to prevent accidental pinching in the ring.

10) Remove the bladder by squeezing the air and gently pulling the bladder with hand.

After thoroughly cleaning the metallic parts with organic solvent, check for any damage. Replace the parts if necessary. Inspect the shell for any damage or foreign particles. Thoroughly clean the shell as required. Lubricate the shell with the system fluid that is compatible with bladder rubber compound.

1) Squeeze the bladder as shown to release any air trapped inside the bladder.

2) Install the gas valve adaptor into the valve stem. Torque it to 90 In-Lbs(10 Nm).

3) For smaller size bladders when there is no gas valve present, install the valve core using the valve core tools and torque it to4 In-Lbs (0.45 Nm).

4) Lubricate the bladder with the system fluid. Attach a bladder pull rod to the gas valve shrader thread and pull the bladder gently into the shell.

5) Install the Name plate and jam nut on to the valve stem. Hand tighten the jam nut.

6) Insert the fluid port body followed by the Anti-extrusion ring into the shell.

7) Slide the Anti extrusion ring on the port body. Pull the port out until the Anti-extrusion ring is seated into the shell opening.

8) Using the charging assembly, fill slowly nitrogen pressure up to 25 psi (1.7 bar) to properly position the port and the anti-extrusion into the opening.

9) Use the rubber mallet to position the port by gently tapping if necessary.

10) Install the Teflon back up followed by the O-ring and rubber back-up.

11) Install the spacer and locknut. Tighten the locknut using the spanner wrench.

12) Install the bleeder plug and tighten it with the wrench.

13) Turn the shell around its axis to allow uniform lubrication of the bladder.

14) Follow the instructions and fill the accumulator with desired nitrogen precharge pressure at a slow rate. Using soap water check the gas valve for any leaks. Tighten the core or the gas valve to stop the leak. Replace the core or the gas valve is necessary.

15) Replace the valve seal cap.

16) Replace the protective cap and hand tighten. Tighten the lock nut and the jam nut.

Accumulator Storage

If accumulator is stored for future use after assembling, we recommended to fill the accumulator with a low precharge of 25 psi(1.7 bar) to allow the poppet valve to close and always cover the fluid port with a dust cap to prevent any foreign material entering into the accumulator. Store in a cool dry place if possible. The protective cap must be securely tightened to prevent any damage to the gas valve.

If the accumulator is stored for an extended period of time, before putting in service, release all precharge pressure, pour small quantity of oil through the fluid port into the accumulator and rotate the accumulator to allow the fluid to circulate and lubricate the bladder. This process is very important when water based or low viscosity fluids are used. Follow the precharge instructions to fill the accumulator to the desired precharge pressure.

If the accumulator is stored for longer than 5 years, we recommend to replace the bladder and seals.

Servi Fluid Power does not authorize the use of non-approved parts or automotive type valve cores or gas valves. Only use Servi Fluid Power approved parts.

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