OILAIR maintenance

INSTRUCTION MANUAL FOR THE PISTON ACCUMULATOR

INSPECTING THE CONDITION OF DELIVERY

After unpacking the accumulator, inspect it for possible damage caused during the transit.

1. Inspect both the end caps and the gas valve for tightness.
2. Check the precharge tag. The accumulator is either precharged to 25 psig(1.7 bar) for shipping purpose or charged to a pressure specified on the purchase order.
3. Check that the working pressure indicated on the accumulator name plate is equal to, or greater than the maximum pressure of the system.

PROTECTION & PRECAUTIONS

1. Protective Gloves:

   Use chemical resistant gloves, if needed, to avoid prolonged or repeated skin contact from the cleaning solutions or solvents.

2. Eye Protection:

   Use safety glasses before performing any maintenance on the accumulator.

OTHER PRECAUTIONS

DO NOT operate the accumulator beyond the allowable working pressure and temperature limitations attached to the product.

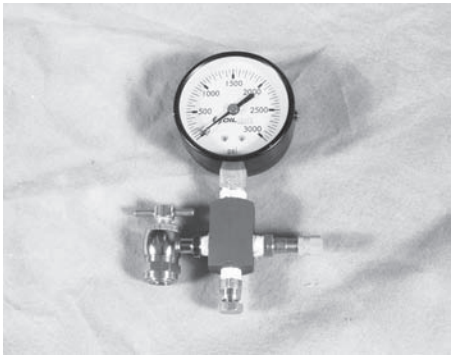
DO NOT weld any thing to the accumulator. Use only the tools recommended in this manual to perform the maintenance procedures.

Use only DRY NITROGEN for charging accumulator. NEVER USE OXYGEN OR AIR, due to risk of explosion.

Use only valve cores approved for accumulator service and NEVER USE AN AUTOMOTIVE TYPE VALVE CORE.

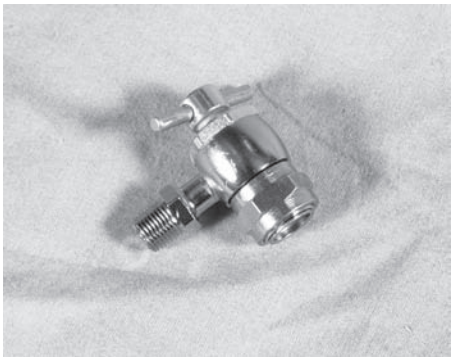
Failure to read & follow these instructions can cause rapidly discharging gas and/or hydraulic fluid which may result in property damage, serious personal injury or death.

Charging Kit
CG-3000

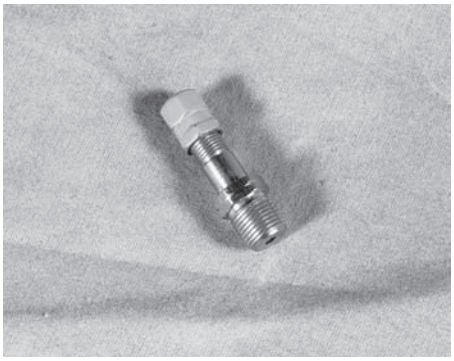


Charging Head Assembly
CG-3013

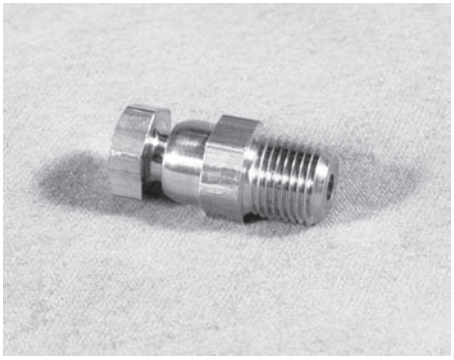
Hose Assembly
CG-3010



Air Chuck
CG-3002



Tank Valve
CG-3005



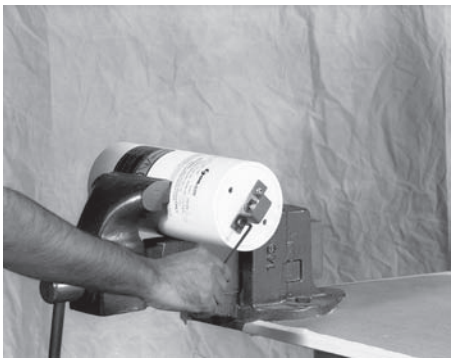
Bleed Valve
CG-3009

Instructions for disassembling the accumulator.

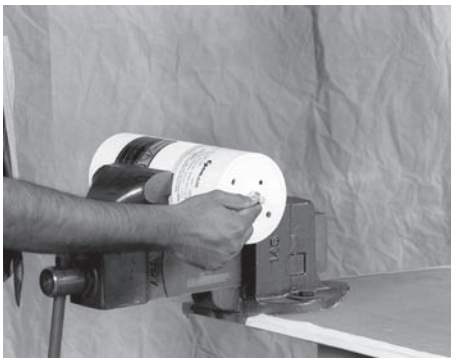
Release all the hydraulic system pressure in a safe manner (eg: bleed valve or automatic discharge valve installed in the system). Remove the accumulator from the hydraulic system and place horizontally in a vice or a clamping device. Protect the clamping jaws with wood or rubber so as not to damage the accumulator.

Tools required

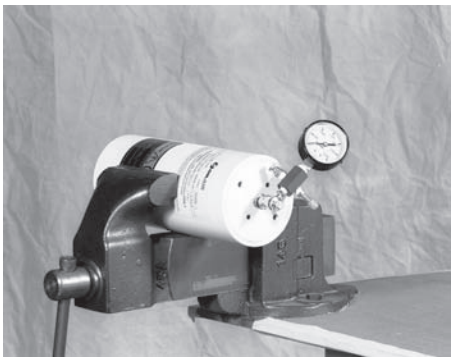
P/N:	PA4-502	End Cap Spanner Wrench for PA4 Model Accumulators
P/N:	PA6-502	End Cap Spanner Wrench for PA6 Model Accumulators
P/N:	CG-3000	Charging & Gauging Assembly



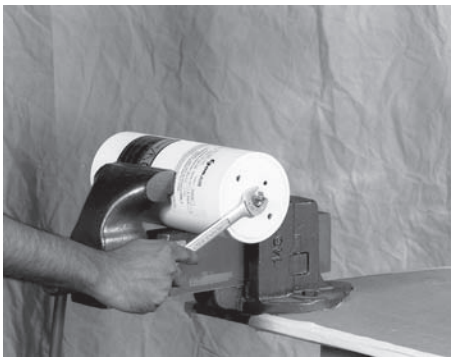
1. Remove valve guard from the accumulator.



2. Remove the valve sealing cap from the valve adapter.

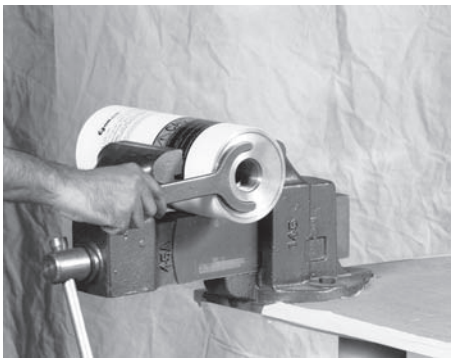


3. Connect the charging and gauging assembly to the valve adapter and release all the nitrogen precharge pressure from the accumulator until the gauge reads zero.

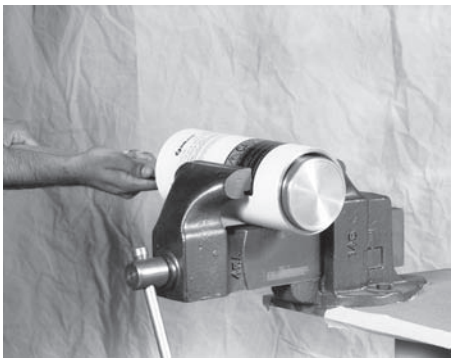


4. Remove the valve adapter and the crush washer from the gas end cap.

5. Remove the gas end cap with the end cap wrench.



6. Remove the fluid end cap with the end cap wrench.



7. Remove the piston carefully by means of a wooden stick. Care must be taken not to damage the inside honned surface finish of the accumulator.

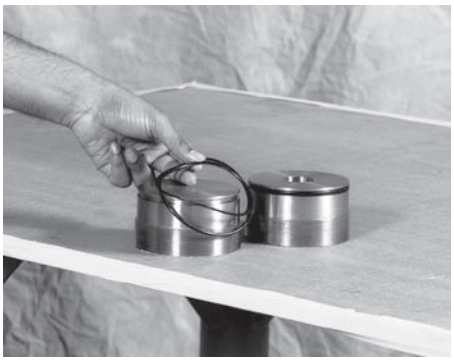
Cleaning & Inspection

Remove all the seals from the end caps and the piston. Clean the cylinder, end caps and the piston with an organic solvent. Inspect all the parts for any visual damages. The honed bore of the cylinder must be free from any scratches or other imperfections which may result in leakage due to improper sealing by the piston. Check that there is no corrosion on any of the parts. Replace all parts that are considered defective. All the seals for end caps and piston must be replaced.

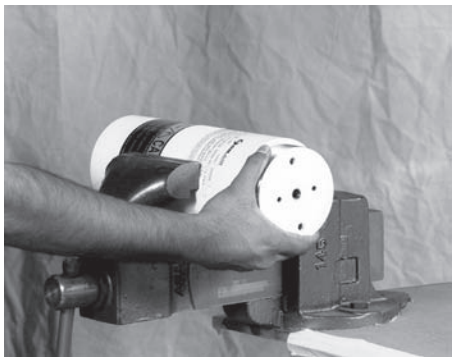
1. Lubricate the piston seal energizers with the system fluid or a similar product and assemble into piston groves. Make sure the energizer seats properly in the grove.

2. Lubricate the Teflon seal and slide it over the energizers installed in the piston groves. Do not stretch the seals more than necessary. Make sure the seals snaps properly over the energizers.

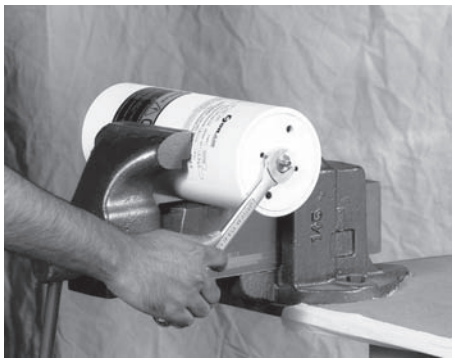
3. Assemble the piston into the lubricated cylinder (cup should face the gas side of the cylinder) by pushing it carefully avoiding any cocking. If necessary tap piston with a rubber mallet. Care must be taken not to damage the piston seals during entry into the cylinder.



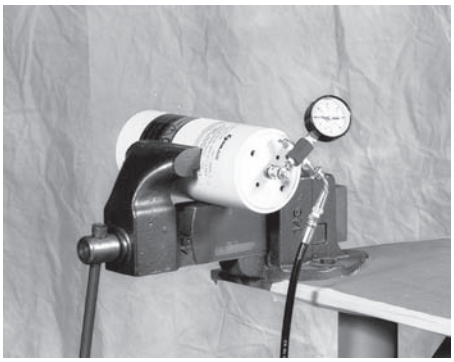
4. Lubricate the "O" Rings and the back-up rings and assemble them into the "O" ring groves of both the end caps. The Back-Up rings must be behind the "O"-Ring closer to the threads.



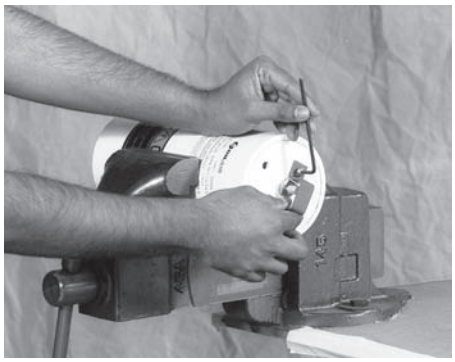
5. Screw the gas end cap to the gas side and the fluid end cap to the fluid side of the cylinder and tighten. Lubricate the threads if necessary for ease of assembly



6. Mount the gas valve with the crush washer assembled to it. Tighten to 90 In-Lbs.



7. Using a charging & gauging assembly, precharge to the desired pressure at a moderate rate. USE DRY NITROGEN only. Check the valve for leaks with snoop or soap water.



8. Remove the charging assembly, install valve cap and protective valve guard. Accumulator is ready for use.

PRECHARGING Instructions

OILAIR maintenance

IMPORTANT

USE DRY NITROGEN GAS ONLY to precharge the accumulator.

Check the precharge tag attached to the accumulator. The accumulator will either be precharged to 25 psig(1.7 bar) for shipping purpose or to the pressure specified on the purchase order. If the accumulator does not have the correct precharge, it must be precharged to the required level using only DRY NITROGEN GAS, before it is installed in the hydraulic system.

Precharge pressures vary according to the application and operating conditions. Please seek technical support from the factory if you are not sure about the correct precharge. Incorrect Precharge pressure can lead to reduced accumulator performance, and damage the piston and the cylinder. It is very important to have the correct precharge. As a guidance, the following values can be used.

Energy Storage:
90% of the minimum system pressure
Pulsation dampening:
70% of the system mean operating pressure
Shock absorption
75% of the system working pressure.

Precharge must never be below 25% of the maximum system pressure.

Always use a pressure regulator valve on the nitrogen bottle when the accumulator shell pressure is lower than the gas pressure in the nitrogen cylinder.

Whenever you have to replace the gas valve core, replace it with a valve core approved for accumulator service. NEVER USE AN AUTOMOTIVE TYPE VALVE CORE.

CHECKING PRECHARGE

Check the precharge pressure only after the hydraulic pressure has been completely released. When a new accumulator is installed, the precharge pressure should be checked to ensure that there is no leakage. This should be performed once during the first week of operation, and then every six months thereafter. Under high cycling or high temperature conditions, the precharge should be checked once every month.

INSTALLATION:

1. The accumulator can be mounted vertically (Recommended) with the fluid port at the bottom and gas port at the top or it can also be mounted horizontally.
2. Use OilAir support brackets specifically designed for accumulator mounting. Fluid port must not be used to support the accumulator. Do not weld any support to the accumulator.
3. Allow sufficient clearance at the gas valve to enable use of OilAir charging assembly for precharge maintenance at regular intervals.
4. An automatic discharge valve fitted between the accumulator and the system pressure line is recommended.

Precharging Instructions

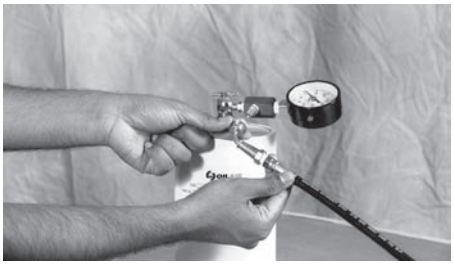
Use DRY NITROGEN ONLY to precharge the accumulator. NEVER USE OXYGEN OR AIR, due to risk of explosion. To read precharge pressure in an accumulator, the hydraulic pressure should be zero.

1. Remove the valve guard installed on top of the gas valve.

2. Remove the valve sealing cap.

3. Close the bleed valve on the charging and gauging assembly. Retract the T-handle on the air chuck by turning counter clockwise direction.

4. Install Charging and Gauging Assembly on the accumulator by screwing the air chuck to the gas valve Hand tighten sufficiently to prevent any leakage. Turn the T-handle on the air chuck clockwise to depress the valve core. Connect the hose to the nitrogen bottle regulator.



5. Remove the seal cap from the gas charging tank valve and connect the swivel connector on the hose assembly. Hand tighten sufficiently to prevent leakage.*

6. Retract the T-handle on the air chuck by turning counter clockwise to close the valve core. Open the bleed valve to bleed of nitrogen in the hose. Disconnect the charging assembly from the accumulator and the gas bottle.

* *Open the regulator valve on the nitrogen bottle carefully to let nitrogen flow at a slow rate into the accumulator. Proceed to charge untilthe accumulator reaches desired precharge pressure. Close the regulator and let the nitrogen stabilize and obtain gauge reading. Adjust thepressure if necessary.*

7. Check for leakage through the valve core by soap solution or snoop. If the core is leaking, then retighten the valve core. If leakage persists then replace the valve adapter.

8. Replace the valve seal cap and the valve guard. Check precharge pressure once in the first week of operation, and then every six months during normal working or every month during high cycling or high temperature condition.

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Printed in USA Bulletin #MMP97

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