

## Installation

- The accumulator in a hydraulic circuit should be placed as near as practical to the source of shock or potential energy requirement.
- Normally an accumulator should be installed in a vertical position with the oil connection facing down. If space is not available, it may be installed horizontally, however, reduced life may occur. Bladder type accumulators have an increased risk of the bladder bag floating (in the horizontal position), which traps usable fluid inside. The bladder can be pinched by the poppet valve closing, which may rupture the bladder. Horizontal position requires more care when draining the fluid from the accumulator.
- When installing an accumulator using “U” bolt type clamps, care should be exercised so as not to distort the accumulator with excessive tightening force.
- Welding hangers to the accumulator is not recommended. Mounting brackets are available from Stauff (See pages A53 - A56).
- The hydraulic fluid used must be kept free of foreign matter to prevent damaging the accumulator wall. For maximum seal life, the fluid should be filtered to 10 micron or less.
- It is not advisable to change the hydraulic fluid from that for which the accumulator was originally purchased for without checking its compatibility with the seal and bladder materials.

## PRE-CHARGING PROCEDURE

### General Information

- The condition of the accumulator is primarily determined by periodic checking of the pre-charge pressure.
- Hydraulic Accumulators are pressure vessels and only qualified personnel should perform maintenance.
- Drain all fluid completely from accumulator before performing any maintenance.
- **DO NOT** weld or braze directly on the accumulator shell.
- **DO NOT** use automotive type valve cores as high pressure accumulator gas valves.
- The most accurate pre-charge readings can only be taken when fluid pressure is at “0 psi”.
- Always observe the maximum working pressure and operating temperature ranges.

**Do not use oxygen for pre-charging the Accumulator!**

## Pre-Charging Bladder Accumulators

1. Isolate the accumulator from the system and make sure hydraulic fluid pressure is zero.
2. Remove gas valve protection guard and valve cap from the accumulator.
3. To charge the accumulator, use a charging hose and gauge assembly similar to Stauff Charging Kit # STA-CK-1 rated for 3,000 psi maximum (higher pressure kits are available).
4. Before using the charging assembly (Figure 1.) make sure that valve **A** is completely open (counter-clockwise), that bleed valve **B** (Figure 1.) is closed (clockwise) and that the non-return valve **C** (Figure 1.) is capped.
5. Connect the charging unit to the gas fill valve on the accumulator by means of knurled cap **D** (Figure 1.).
6. Fit the gas valve adaptor (included in Stauff charging kit) to the nitrogen bottle, make sure that the gas valve on the nitrogen bottle is closed (Figure 2.) then attach gas hose to the gas valve adaptor on the nitrogen bottle.
7. Connect the other end of gas hose to the non-return valve **C** (Figure 1.), after taking off it's cap.
8. Turn valve **A** (Figure 1.) clockwise until it stops (**Do not over Torque**)
9. SLOWLY open valve on nitrogen bottle (Figure 2.) and allow the gas to flow to the accumulator. Gauge should begin to register pressure.
10. Once the desired gas pre-charge pressure has been reached, close valve on nitrogen bottle (Figure 2.).
11. Open valve **A** (Figure 1.) (fully counter-clockwise) bleed the trapped pressure in the gas line to zero by means of bleed valve **B** (Figure 1.), open valve **B** (turn counter-clockwise) until gauge reads 0 psi.
12. Remove hose from non-return valve **C** (Figure 1.) and replace cap.
13. Close the bleed valve **B** (Figure 1.) and wait a few minutes for pressure to stabilize.
14. Screw valve **A** (Figure 1.) clockwise until pressure can be read on gauge. This should be slightly higher than the required pressure.
15. Adjust pressure by means of bleed valve **B** (Figure 1.), when desired pressure is attained, confirm that valve **B** is completely closed (clockwise). Open valve **A** (Figure 1.) completely (counter-clockwise). Now remove the charging unit by means of knurled cap **D** (Figure 1.), then remove charging unit.
16. Replace gas valve cap and protective guard on accumulator.
17. Accumulator is now ready for use.

**NOTE: Allow accumulator to rest approximately 10-15 minutes after gas pre-charging. This will allow gas temperatures to adjust and equalize. Recheck gas pre-charge pressure and adjust if necessary. Check accumulator gas valve for any leaks with soapy water. Always wear safety glasses.**

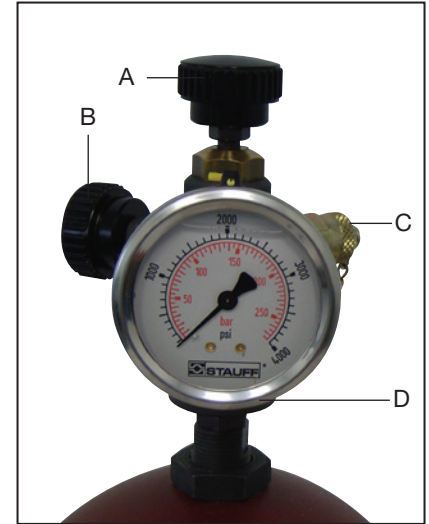


Figure 1.



Figure 2.

## Checking Pre-Charge Pressure

### General Information

The condition of the accumulator is primarily determined by periodic checking of pre-charge pressure. Only qualified personnel should perform any maintenance on accumulators. Nitrogen gas pre-charge pressure should be checked at least once during the first week of operation to assure that no leak has developed. The pre-charge

pressure and ambient temperature should be recorded at installation. If there is no loss of gas pre-charge pressure, it should be rechecked in approximately 4 months. Thereafter, it should be checked annually. Check pre-charge if the system is acting sluggishly. If pre-charge is low, check the gas valve for leakage and recharge.

### Pre-charge Checking Procedure for Bladder Accumulators

1. Use appropriate valving in the hydraulic system, to discharge all hydraulic fluid from accumulator.
2. To check or adjust pre-charge pressure, HYDRAULIC PRESSURE MUST BE REDUCED TO 0 PSI. Pre-charge pressure should be checked periodically. Charging and checking should be done with an accumulator gauge assembly kit similar to Stauff Part # STA-CK-1.
3. Remove gas valve protection guard and valve cap as per pre-charge procedure instructions.
4. Attach gauge assembly to accumulator gas valve.
5. Make sure bleed valve B (Figure 1.) is closed, depress gas valve core by turning valve A (Figure 1.) clockwise. Gas pressure can now be read on gauge.
6. To reduce pressure, open bleed valve B (Figure 1.) carefully, allowing gas to escape until desired pressure is obtained.

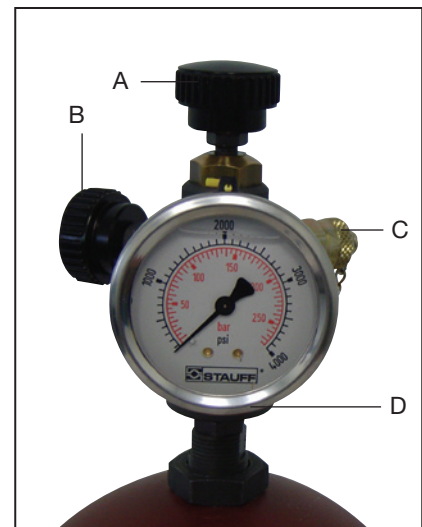


Figure 1.

**NOTE: Allow accumulator to rest approximately 10-15 minutes after gas pre-charging. This will allow gas temperature to adjust and equalize. Recheck gas pressure and adjust if necessary. Check accumulator gas valve for any leaks with soapy water. Always wear safety glasses.**