

Introduction

Bladder accumulators provide a means of regulating the performance of a hydraulic system.

They are suitable for storing energy under pressure, absorbing hydraulic shock, dampening pump pulsation and flow fluctuations.

Bladder accumulators provide excellent gas and fluid separation ensuring dependable performance, maximum efficiency, and long service life.

Why use a Bladder Accumulator?

- Improves your systems efficiency
- Supplements your pump flow
- Supplies extra power in an emergency
- Compensates for any system leakage
- Absorbs hydraulic shocks
- Accepted world wide
- High/ Low temperature tolerance
- Extremely safe (can not disassemble under pressure)
- Quick response
- Wide range of compounds for a variety of fluids

Accumulator Function

The design of the Stauff bladder accumulator makes use of the difference in the compressibility between a gas (nitrogen) and a liquid (hydraulic fluids). The bladder contained in the shell is pre-charged with nitrogen gas to a pressure determined by the work to be done.

After pre-charging, the bladder occupies the entire volume of the shell, from there the work can be split into three steps.

Step 1. When the hydraulic fluid enters the accumulator, the nitrogen contained in the bladder is compressed and its pressure is increased.



- Step 2.** The compression of the bladder stops when the pressure of the fluid and nitrogen are equal (balanced). During this step the bladder is not subject to any abnormal mechanical stress.
- Step 3.** On demand, as system pressure falls, the accumulator's stored fluid is returned to the system under pressure applied by the compressed nitrogen. On completion of the hydraulic system functions, the accumulator reverts to step 1.