

High Pressure Maintenance-Free Accumulators

Eaton designs and manufactures accumulators which incorporate high precision edge-welded metal bellows. Such accumulators are known as maintenance-free, which are precharged with gas at the factory and do not require subsequent re-charging. The bellows form a hermetic seal, pre-venting the interchange of the charge gas and the (hydraulic) fluid, resulting in a leak-free assembly over the life of the system.

A High Pressure Maintenance-Free Accumulator (HPMFA) is capable of handling the bottoming cycles that are the result of a hydraulic system's shift from a normal operating mode to a shut down (discharge) condition.

Features & Benefits

Reduced Weight & Through-Life/Maintenance Costs

- No charge lines
- No charge valves
- No pressure gauges
- No panels
- No inspection windows
- The use of helium results in reduced size, weight and expense

Designed for the Highest Cycle Lift Possible (300,000 MCTF est.)

- Performance not dependent on charge pressure
- Capable of handling more bottoming cycles than conventional designs
- No pressure across bellows when hydraulically discharged

"Fit and Forget"

- Can be installed in inaccessible locations
- No pre-flight or post-flight inspections
- Can be installed in any position/orientation

Fast Response Time

- Minimum friction between separator and housing
- Light moving mass
- Unaffected by temperature

Sealed for Life

- Factory pre-charged
- Leak tight to 1×10^{-7} std. cc/sec helium
- No re-charging/maintenance
- Hermetic Seal prevents ingress of air, water, debris and other contaminants into fluid
- Eliminates field mistakes due to re-charging

All Metal Construction

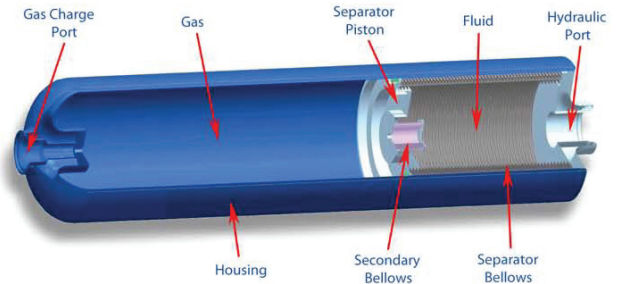
- Compatible with all hydraulic fluids
- Extreme temperature limits
- No elastomeric seals
- No need to overhaul
- No leakage due to extreme temperature changes
- No gas leakage into hydraulic system

Can Monitor Conditions from Fluid Side

- Gas pressure
- Retention system

Meets Transportation and Handling Requirements

- IATA Dangerous Goods Regulations
- Federal Regulations Code 49CFR



Design Range

Volume (Typical):

12 in³ to 400 in³
200 cc to 6,500 cc

Temperature (Typical);

175°F to 480°F
(79°C to 250°C)

Pressure (Practical Limit):

Up to 5,000 psi (34.5 MPa)

Indefinite Shelf Life

Meets Qualification Standard ARP 4378

Meets (Military) Fragmentation Requirements



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