



## Aerospace

### High Pressure Maintenance-Free Accumulators

Eaton designs and manufactures Blefab® brand 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, preventing 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  $1 \times 10^{-7}$  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

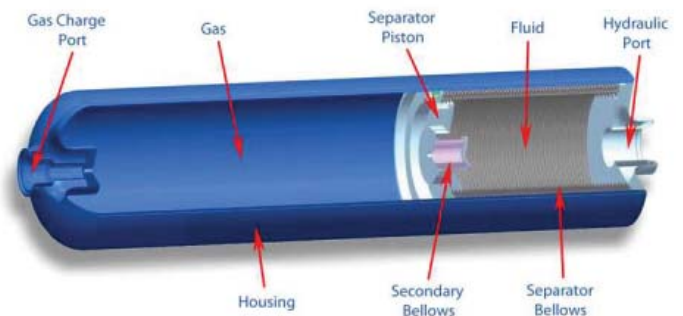
- Gas Pressure
- Retention System

##### Meets Transportation and Handling Requirements

- IATA Dangerous Goods Regulations
- Federal Regulations Code 49CFR



- Indefinite Shelf Life



##### Meets Qualification Standard ARP 4378

##### Meets (Military) Fragmentation Requirements

##### Design Range

- Volume (Typical)
  - 12 in<sup>3</sup> to 400 in<sup>3</sup>
  - 200 cc to 6,500 cc
- Temperature (Typical)
  - 175°F to 480°F
  - -60 °C to 250°C
- Pressure (Practical Limit)
  - Up to 5,000 psi
  - Up to 35 MPa

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