



EDGE-WELDED METAL BELLOWS MINI ACCUMULATORS FOR THE SPACE INDUSTRY

- ALL METAL CONSTRUCTION
- WIDE RANGE OF MATERIALS
- CUSTOMIZABLE PORTS AND CONNECTIONS
- OPTIMIZED LIGHTWEIGHT & COMPACT DESIGNS
- COMPATIBILITY WITH VARIOUS PROPELLANTS/FLUIDS



Senior Metal Bellows offers a range of mini accumulators custom engineered to meet the demanding requirements of the space industry. Our mini accumulators leverage edge-welded metal bellows technology, providing unparalleled reliability and performance in extreme environments such as space.

ALL METAL CONSTRUCTION

Designed for demanding applications, our mini accumulators feature all-metal construction, ensuring durability and reliability in the harsh conditions of space. The feature eliminates the use of elastomeric components like O-rings, bladders, or pistons, minimizing common issues such as wear, leakage, and stiction. This removes the need for preventative maintenance, ensuring continuous operation in space.

OPTIMIZED LIGHTWEIGHT & COMPACT DESIGNS

We can optimize the design of our mini accumulators to be lightweight and to take up a small volume, with existing designs weighing less than 200 grams and occupying less than 10 cubic inches of space, making them perfect for mass-sensitive space applications where every gram counts.

WIDE RANGE OF MATERIALS

Our mini accumulators can be fabricated from a variety of materials, including stainless steels, high nickel alloys, and titanium, ensuring compatibility with the unique requirements of space missions.

COMPATIBILITY WITH VARIOUS PROPELLANTS / FLUIDS

These mini accumulators can be customized to be compatible with a wide range of hypergolic and non-hypergolic propellants as well as coolant fluids and hydraulic fluids used in space applications.





Our extensive product range, tailored for space applications, has been utilized in numerous manned and unmanned space systems, launch vehicles, and satellites.

Senior Metal Bellows' mini accumulators represent the pinnacle of engineering excellence, offering unmatched reliability, performance, and versatility for space applications. With our commitment to innovation and expertise in edge-welded metal bellows technology, we are proud to have supported the success of space missions since the Apollo program in the 1960s.

Space Program	SMB Application
Apollo	<ul style="list-style-type: none"> • Electronics Cooling Thermal Compensator & Reservoir • Ground Support Refrigerant Volume Compensator • Hermetically Sealed Protective Switch
International Space Station	<ul style="list-style-type: none"> • Electronics Package Water Condensate Tank • Express Rack Fluid Thermal Compensation Accumulator
Space Shuttle	<ul style="list-style-type: none"> • Environmental Control Life Support System Freon Accumulator • Ground Support Anhydrous Ammonia Accumulator • Potable Water Tanks
O3b mPOWER	<ul style="list-style-type: none"> • Electronics Coolant Accumulator
Artemis & Commercial Space Stations	<p>Developing Solutions for:</p> <ul style="list-style-type: none"> • Potable and Waste Water Tanks • Cryogenic Seals • Rotary Feedthroughs • Thrust Vector Control EHA Reservoirs • Hydrogen fuel cell waste water storage

The logo for Senior Metal Bellows features the word "senior" in a small, lowercase sans-serif font above the word "Metal" in a larger, bold, uppercase sans-serif font. To the right of "Metal" is a stylized icon consisting of three concentric, slightly offset circles. To the right of this icon is the word "Bellows" in a large, bold, uppercase sans-serif font.

senior
Metal Bellows



For any questions or to engage with our technical solution team, please contact us at

Solutions@metalbellows.com