



Bellows Accumulators

OVERVIEW

Metal bellows accumulators are used in a variety of industries to store the energy of a liquid or gas. Edge welded bellows technology is an ideal fit for this application, due to its media compatibility and stroke length capability. Edge welded bellows can also be manufactured in a variety of wetted materials to match the application's media compatibility requirements. With the right material, metal bellows can operate from cryogenic temperatures to 1500 degrees F. Hydraulically formed, or hydroformed, bellows can typically travel about twenty of their free length. Edge welded metal bellows have the ability to travel ninety percent; thus, edge welded bellows can accomplish the same movement in smaller sizes and lighter weight assemblies.

Bellows accumulators can have pressure internal or external to the bellows assembly. This design factor should be defined early in the design phase since the assembly will ideally receive internal pressure. Understanding the differential pressure between the inside and outside of the assembly also helps engineers to determine the proper size and length of the bellows accumulator.

BellowsTech has engineering design experience in a multitude of applications resulting in manufacturing a variety of accumulator sizes and shapes. With over eighty standard diaphragms to choose from, engineers have the ability to select the right size for the application. BellowsTech is also capable of manufacturing bellows up to 96" in length. Guides and over-travel stops can be integrated into the design. In order to prevent "squirm," guides ensure that the bellows assembly is moving in the intended direction. Over-travel stops can prevent bellows expansion from over-pressure conditions.



TYPICAL INDUSTRIES

Aerospace

Oil/Gas/Petrochemical

Test

BENEFITS

Media Compatibility

Wide Operating Temperature Range

Eliminates Springs and O-Rings

SPECIFICATIONS

Material	Stainless Steels, Alloys, & Titanium avail. Consult Factory
Thickness	From 0.002" and up every 0.001"
Standard Leak Rate	From $<1 \times 10^{-9}$ std CC He/sec (check material)
Size Ranges	
Outside Diameter	0.358" (9.0932mm) to 22.205" (564mm)*
Inside Diameter	0.198" (5.029mm) to 19.921" (505.99mm)*
Shapes	Round; Non-Round avail. Contact Factory
Length	Up to 96" (244 cm)

Why Choose Edge Welded Bellows?

Of the three major metal bellows technologies, edge welded metal bellows have the highest stroke length, reaching 90% of its free length. This flexibility allows for increased expansion and contraction of the bellows. Edge welded bellows can be exposed to extreme temperatures and media with a wide selection of materials. Both the inside and outside of the bellows can be exposed liquids and gases. Edge welded metal bellows also have a high cycle life to produce repeatable results and round or square shapes.