



## Volume Compensators

### OVERVIEW

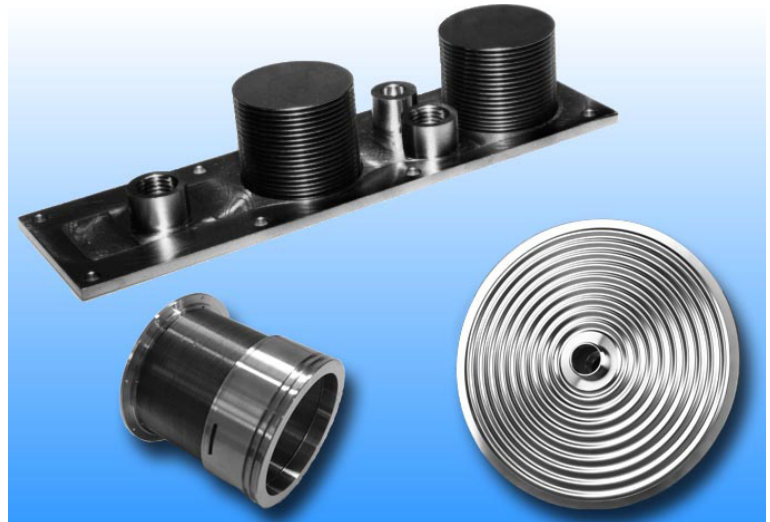
With changes in pressure or temperature, metal bellows can be used to compensate for the volumetric changes of the liquid or gas through expansion and contraction. Whether a liquid is heated or a cryogenic tank is being filled, edge welded bellows can bridge the gap between thermal or pressure differentials to ensure that the system remains operational. BellowsTech can integrate custom machined components or standard threads and fittings. For outdoor or industrial environments, BellowsTech will incorporate a housing for the bellows for protection.

Edge welded bellows technology can be pressurized internally and externally. For example, in sub-sea vehicles, bellows can be combined with sensors to compensate for the differential pressure of the sea water and hydraulic fluid.

Edge welded bellows can be manufactured in miniature sizes and offer a high stroke length. Light-weight materials can be used to minimize overall system weight.

Let BellowsTech know the pressures expected to be measured, and our engineering staff can assist with a designed to your specifications. BellowsTech can also offer liquid filling services to compensate for external pressures.

With a variety of materials, sizes and configurations, BellowsTech edge welded bellows can be designed to meet your requirements.



### TYPICAL INDUSTRIES

Cryogenics

Test Systems

Process Equipment

### BENEFITS

High Stroke Capability

Extreme Temperatures

Excellent Media Compatibility

### SPECIFICATIONS

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