



# BellowsTech

## Edge Welded Bellows and Assemblies

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### Maximum Flexibility in the Smallest Lateral Space

**Axial, Angular, and Lateral Offset Motion**

**Hermetic, All Metal, Pressure Barrier  
and Seal that Flexes**

**Up to 90% Stroke Length**

**Permits Extreme Temperatures**

**Excellent Media Compatibility**

**High Strength Construction**

Order online or request a custom quote  
**[bellowstech.com](http://bellowstech.com)**



# BellowsTech

## Discover the Next Generation in Edge Welded Metal Bellows

BellowsTech, an MW Components company, is a premier US manufacturer of high-quality, dependable edge welded bellows and assemblies. Engineers in aerospace, medical, oil and gas, semiconductor, and UHV industries rely on our bellows for the highest cycle life, responsive design, wide material selection, and leak tight performance. Our expert engineering partnerships produce truly optimized designs for either fast prototyping or full production runs.

We can manufacture in all sizes, shapes, and material combinations to fit your application. With proprietary manufacturing processes, in-house machining, internal tooling design, and other custom solutions, BellowsTech can supply a completed assembly with the best price to performance ratio in the industry. Our company practices lean manufacturing techniques and recognizes the importance of ITAR, RoHs, and DFARS compliance. BellowsTech is ISO 9001:2015 certified and dedicated to overall customer satisfaction.

### Features

- Leak tight up to  $1 \times 10^{-9}$  std.cc/sec helium as required
- Stroke up to 90% of free length
- Wide operating temperature range (-420 to 1300 °F)
- High pressure designs available
- All metal construction
- Over 100 die sizes
- Corrosion resistant
- Highest cycle life



# Hundreds of Applications.... Thousands of Designs

BellowsTech is a key partner/supplier to leading OEM's worldwide. Although we serve various industries, the applications often share similarities. With thousands of designs available to us in our database, we can draw upon a wealth of knowledge and experience and apply this expertise to your application. We excel at new designs with custom capabilities and short lead times.



Misalignment Joints

## Typical Application Types

### Aerospace

- Accumulators
- Aneroids
- Reservoirs
- Vibration Dampeners
- Face Seals
- Volume Compensators



Pulse Dampener

### Oil and Gas

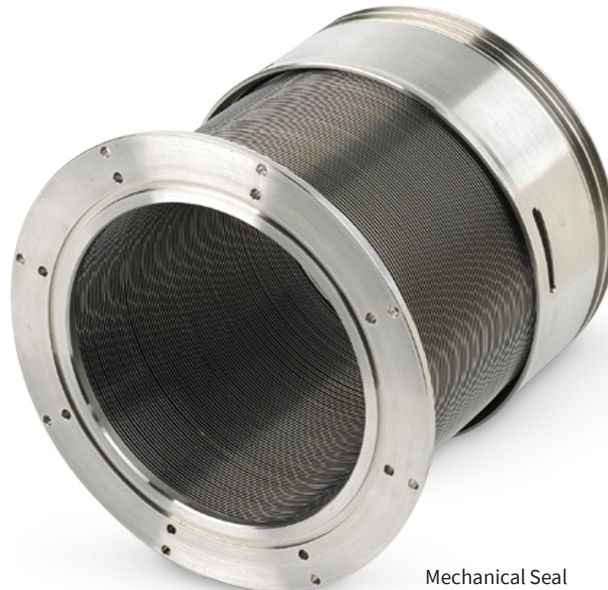
- Sensors
- Leak Detection
- Actuators
- Mechanical Seals
- Valve Stem Seal
- Gas Lift Valves

### Vacuum/Semiconductor

- Feedthroughs
- Beamlines
- Vertical Lift Pedestals
- Couplings
- XYZ Manipulators

### Medical

- Valves
- Pumps
- Pulse Suppression



Mechanical Seal



Microscope Assembly



Seals and Actuators



UHV-Semi



Oil and Gas Artificial Lift Assembly



Select from a wide range of materials based upon your application requirements. Not sure? Our design engineers will help you choose the best possible material options that will fit not only your application but your price points as well.

| Material Type                        | Temperature (°F) | Advantage  |
|--------------------------------------|------------------|--|
| AM350                                | -100 to 800      | High cycle life, low leak rate                   |
| Stainless Steel (316L, 321, 347)     | -420 to 800      | Low cost, low leak rate                          |
| Inconel (625, 718)                   | -420 to 1500     | Corrosion resistance, high temperature endurance |
| Hastelloy® 276C / Haynes 242         | -420 to 1500     | Corrosion resistance                             |
| Titanium (Grade 2) (ASTM-B265)       | -420 to 800      | Extremely lightweight                            |
| *Other alloys available upon request |                  |  |

|             |  |
|-------------|--|
| Size Range  | OD: 0.358" (9.09mm) to 25.59" (660mm)<br>ID: 0.125" (3.175mm) to 23.2" (648mm) |
| Thicknesses | .002" to .020" depending on die size   |

BellowsTech is also able to design and manufacture a full range of diameters and thicknesses in both **round and non-round shapes**.



Rectangular and racetrack-shaped bellows

## Assembly, Refurbishment, and Testing

### Assembly Services

BellowsTech offers a complete range of assembly services, regardless of size, shape, or quantity. Our team of professionals is ready to work with you to design and build your parts reliably, quickly, and inexpensively.

### Specialty Welding Capabilities

BellowsTech offers expert specialty and micro TIG fusion welding capabilities. Using our application of semi-automated, XYZ computer controlled weld paths, we are able to make complex welds with a superior cosmetic appearance, structural integrity, repeatability, and accuracy.

### Value Added Services

- Sub-Component Supply**  
BellowsTech can be your single source provider for all your sub-component needs from manufacture to procurement.
- Engraving**  
Laser applied part identification is offered for serialization, production lot control, bore size identification, part number, and/or special marking. Engraving is typically applied to custom end pieces.
- Helium Mass Spectrometer Leak Testing**  
Verified helium leak proof up to  $1 \times 10^{-9}$  cc He/sec, as required. Our equipment is NIST calibrated.
- Post Weld Proof Pressure Testing**  
Available upon request.
- Machining Services**  
The ability to fabricate machined components allows BellowsTech to provide turnkey bellows assemblies to our customers.



## Bellows Assembly Repair & Refurbishment Services

BellowsTech offers a valuable, cost-effective alternative for your consumable bellows assembly needs. With our unique abilities and industry experience, BellowsTech can often replace the bellows in expensive assemblies and re-use the machined components to save you valuable time and money. Before you discard any bellows assembly, consult us for your consumable bellows replacement needs.

## Committed to Product Quality

Our Quality Control department is “hands on”—inspecting and evaluating each and every part as required and assuring that our raw materials and products pass our stringent performance tests. We operate by the principles of root cause and corrective action and in the true spirit of continuous improvement.

## Convenient Online Ordering

For fast and low cost solutions, BellowsTech offers hundreds of parts online for convenient 24/7 ordering. Choose from a variety of stainless steel edge-welded bellows with A-style end plates, cuff flanges, or ConFlat assemblies. Visit [bellowstech.com/shop](http://bellowstech.com/shop) to order.

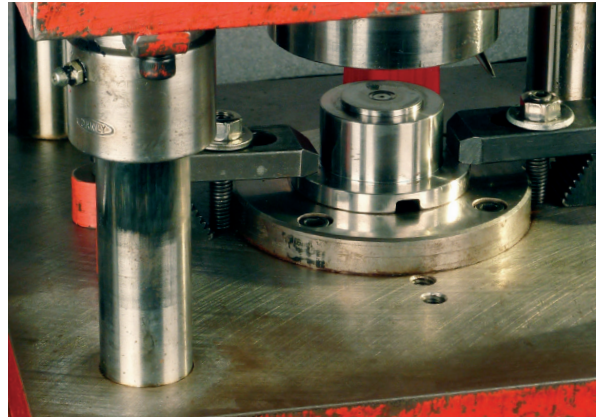
## Custom Solutions – Free Engineering Design Assistance

We specialize in custom bellows and assemblies! If you require design assistance, call 386.615.7530 and ask to speak with one of our Technical Support Engineers or visit our website [bellowstech.com](http://bellowstech.com) and download a free design form. Once submitted, an engineering specialist will contact you within 24 hours for a FREE consultation. We strive to design and fabricate bellows assemblies that are optimized for your specific application, at a reasonable price and lead time.

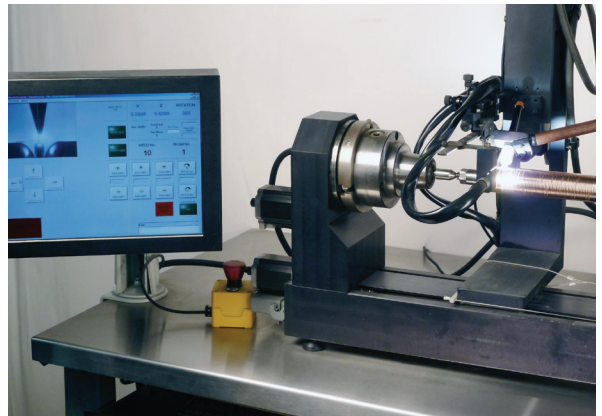


Ultrasonic Cleaning Environment

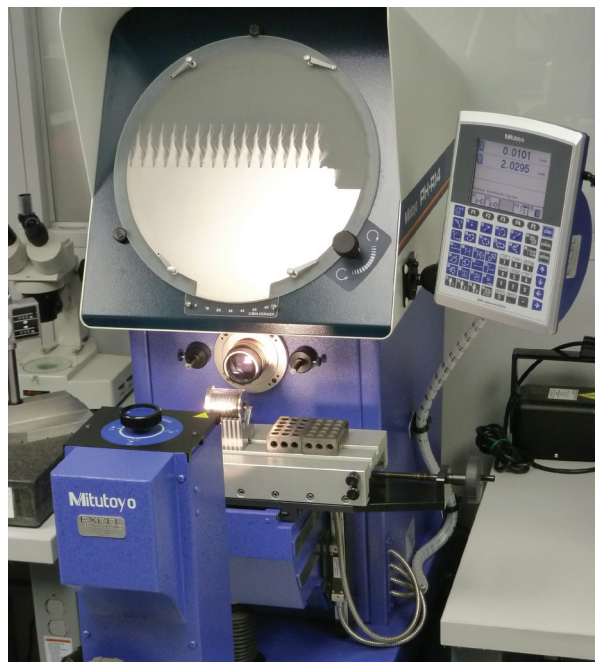
Need a custom product? Call us at 386.615.7530



Diaphragm Fabrication



Automated Welding Vision System



Quality Inspection

# Bellows Design Data Form

## BellowsTech

[bellowstech.com](http://bellowstech.com)

132 Business Center Drive, Suite 9

Ormond Beach, FL 32174

386.615.7530

**Please use this guide to detail your bellows requirement.**

**If you have any questions, please contact us.**

Contact Name \_\_\_\_\_

Company Name \_\_\_\_\_

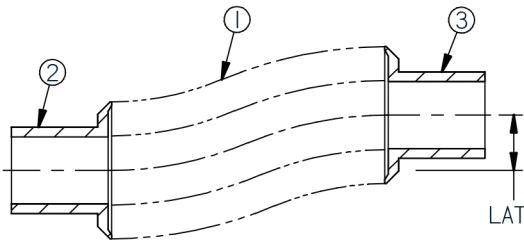
Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

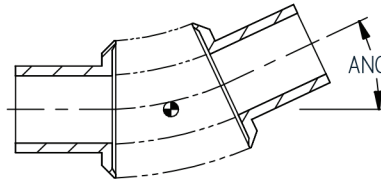
Country \_\_\_\_\_

Telephone \_\_\_\_\_

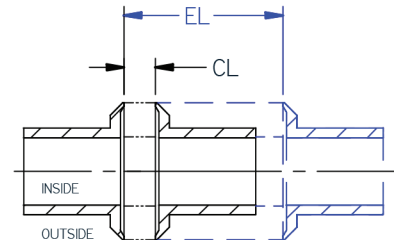
Email \_\_\_\_\_



**Lateral Offset**



**Angular Offset**



**Axial Stroke**

|   |  |  |
|---|--|--|
| 1   | Bellows Core OD max                        |  |
|   | Bellows Core ID min                        |  |
|   | Installed Length Core Only No Flanges (IL) |  |
|   | Free Length Core Only No Flanges (FL)      |  |
|   | Extended Length Core Only (EL)             |  |
|   | Compressed Length Core Only (CL)           |  |
|   | Stroke (EL minus CL)                       |  |
|   | Lateral Offset                             |  |
|   | Angular Offset                             |  |
|   | Pressure Inside Core During Stroke         |  |
|   | Pressure Outside Core During Stroke        |  |
|   | Max & Min Temperatures                     |  |
|   | Target Spring Rate                         |  |
|   | Leak Rate                                  |  |
|   | Corrosive Gas or Liquid, Yes or No, Type   |  |
|   | Stroke Cycles                              |  |
|   | Bellows Material                           |  |
| Shaft Size (if present)   |  |  |
| 2   | Flange One                                 |  |
| 3   | Flange Two                                 |  |
| 2 & 3   | Flange Material                            |  |
|   | Quantity                                   |  |
|   | When are parts needed                      |  |
|   | Target Price                               |  |
| Please provide a sketch of the assembly, or any visual reference. |  |  |

Is this a commercial item? Yes ☐ No ☐ Is this for defense/military purposes? Yes ☐ No ☐

Will BellowsTech ship outside of the USA? Yes ☐ No ☐

Application description \_\_\_\_\_

What is the industry? \_\_\_\_\_

What is the intent? \_\_\_\_\_

# Solutions Offered by Other MW Components Brands



Electroformed Metal Bellows

## Servometer®

Servometer®, an MW Components company, is a preeminent manufacturer of quality-crafted metal bellows, bellows couplings, electrical contact springs, and rigid electroforms using electrodeposition technology. Their electroformed bellows serve in hundreds of mechanical and electrical components and OEM products worldwide from aerospace to semiconductor and are trusted by engineers across the globe for their exceptional performance and reliability. Since 1957, their custom-engineered parts have made “the impossible – possible”, helping solve the most challenging motion control problems.

973.785.4630 | [servometer.com](http://servometer.com)

### Electroformed Metal Bellows

Servometer electrodeposited bellows are available in a wide range of sizes, lengths and materials including nickel, copper, gold, and silver. They can be custom manufactured in various wall thickness for exceptional flexibility and sensitivity. Outer diameters ranging from 0.020 inch to 12.0 inches and convolution lengths as long as 18.0 inches. Off-the-shelf solutions are available for low cost testing.

### Flexible Couplings

Servometer electrodeposited couplings deliver precise positioning under punishing environments without fatigue for today’s most demanding motion control applications. They offer zero-backlash, high flexibility, ultra-sensitivity, and extreme accuracy for reliable 24/7 operation. [Order Online!](#)

### Electrical Contacts

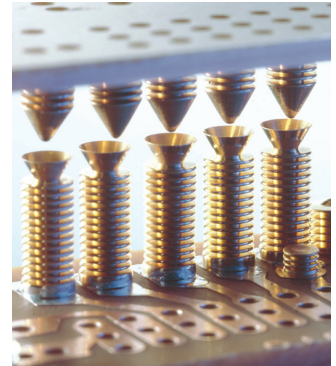
Servometer bellows electrical contacts are an ideal solution as spring contacts on precision circuit boards, relays and switches for enhanced conductivity, and a lifetime of reliable interconnection. Our contacts are gold plated to ensure the utmost reliable signal paths and can easily tolerate buildup and thermal expansion in critical assemblies.

### Electroforms

These precision components can be customized to unusual shapes, miniature sizes, and close tolerances. They are extremely lightweight, exceptionally rugged, and structurally rigid depending upon the application. They are a reliable solution for complex lightweight designs in aerospace, defense, and medical applications.



Flexible Couplings



Bellows Electrical Contacts

## Ameriflex

Ameriflex, an MW Components company, combines exceptional engineering, state-of-the-art manufacturing, extremely close dimensional tolerances, and over 40 years of industry experience to deliver top quality formed metal bellows for any application. Since 1981, Ameriflex has been a wholesale manufacturer of electronic component parts addressing the semiconductor, aerospace, lab and university, power generation, and many other industries. In addition to metal bellows, they also manufacture expansion joints, convoluted tubing, bellows assemblies, and more, to match your exact specifications.

951.737.5557 | [ameriflex.net](http://ameriflex.net)

### Formed Metal Bellows

Formed bellows have wall thickness ranging from a minimum of 0.002 inches to a maximum of 0.056 inches and diameters between 0.125 inches and 40 inches. They come in both single- and multi-ply construction. This large range of options makes them attractive for larger applications like cryogenic and automotive parts. They are also generally limited to a circular or racetrack cross-section, and retooling to change their geometry can be expensive.



Formed Metal Bellows





# About MW Components

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MW Components is focused on accelerating the entire process of delivering custom, stock, and standard parts to virtually any volume and against demanding deadlines. We work to highly complex tolerances. We help simplify the management of any number of different components. And we take a no-compromise approach to quality. With MW Components, you can be sure you'll get the right part to the right specification when and where you need it.

**MW Components. Whatever it takes.**

[mwcomponents.com](https://mwcomponents.com)