



HYDROFORMED BELLOWS ASSEMBLIES

Duraflex, Inc.'s Hydroformed Bellows are recognized in the industry as the benchmark for high quality and precision. Bellows can be hydroformed from either welded or seamless tubing.



WALL THICKNESS of close tolerance welded tubing is fabricated from .004" to .036" material. Seamless tubing wall thicknesses range from .002" to .020".

INSIDE DIAMETER of Bellows ranges for from ¼" – 24".

LENGTH of Bellows Hydroformed is restricted to a single bellows live length of 36".



NUMBER OF CONVOLUTIONS is dictated by the motion requirements of the application and can range from one convolution to several hundred within a given length.

MULTIPLE PLY bellows configurations can be created to increase pressure ratings or reduce the effect of vibration induced fatigue in both seamless or welded tubing.

MATERIALS COMMONLY HYDROFORMED INCLUDE



- **300 Series Stainless Steels** | T-304(L), T-316(L), T-321, T-347
- **409 Series Stainless Steel**
- **Inconel** | 600, 601, 617, 625
- **Copper Base Alloys** | Beryllium Copper, Phosphor Bronze, Copper Alloy 102/110, Brass 70-30, 80-20
- **Monel 400**
- **Nickel 200**
- **Titanium** | Grades 1, 2, 40
- **Aluminum** | 3003, others
- **Hastelloy** | B, B2, C, C-22, C-276





HYDROFORMED BELLOWS ASSEMBLIES

SPECIAL GEOMETRIES or “non-traditional” hydroformed shapes can be created that drastically differ from the typical omega shaped convolution designs. These can range from shaped cones to elliptical or even rectangular net shape products.

END CONFIGURATIONS range from blind closed ends to typical open tube or bellows necks, as desired. Custom end forms can be created out of similar or dissimilar machined components and joined to the bellows utilizing the most appropriate joining method.

TOOLING is available for almost every Inside Diameter whole number and half size from ¼” to 24”. Special tooling can be designed for unique sizes.

ASSEMBLY options include value-added fabrication and assembly of mating components.

JOINING METHODS for mating componentry includes TiG and MicroTiG welding, Resistance Welding, Laser Welding, Plasma Welding, Brazing, Epoxing and Press Fitting.

INSPECTION can be provided in both Non-Destructive or destructive Metallurgical formats depending on the application. Inspection services include x-ray, dye penetrant testing, SPC, PPAP and 1st Article submittals, metallographic analysis, helium mass spec leak testing, pressure testing, etc – as required for the application.

CERTIFICATIONS include ISO 9001:2000, AS 9100B, ASME Section IX, TUV, MIL and many others.

COMPREHENSIVE DESIGN can be performed by Duraflex taking a project from its application concept to prototype to production concurrently with the customer.

BELLOWS LIFE can be predicted utilizing a variety of predictive and modeling software. Professional Engineer certification and stamping can also be provided, if required.

FINISHING OPERATIONS include Electro polishing, LOX Cleaning, Certified Clean Room cleaning and packaging and a variety of other special cleaning or packaging options.

