At U.S. Dynamics Corporation (USD) our mechanical and electrical engineering staff has been providing innovative solutions for over 40 years. Teamed with craftsmen and precision machining capability we can support contract manufacturing, system integration and system upgrades for the medical, pharmaceutical, semiconductor, industrial, aerospace and defense industries.

Our specialty is low volume and high complexity. We include value-added engineering services on every project. This includes total system integration, precision machining, custom tube bending, UHP orbital welding, custom coil winding, potting and encapsulation, clean room assembly, design, fabricate, assemble and test.

Please direct all inquiries via e-mail to sales@usdynamicscorp.com

U.S. Dynamics has UHP Orbital Welding and Tube Bending Capabilities for Gas and Chemical Delivery Systems

**UHP Orbital Welding Services**

USD specializes in the co-design, fabrication and full system integration of Ultra High Purity gas and chemical delivery systems for the chemical, bio-pharmaceutical, and semiconductor markets. USD’s partnership approach along with fully trained and certified personnel can design, fabricate, assemble and test your system. The result is a reliable system delivered to the customer. USD will build to print and build to specification from customer documentation. USD’s quality is unmatched; meeting or exceeding customer specifications.

**Custom Design / Build Solutions:**

- Fully and Semi - Automated Gas Cabinets
- Gas Panels
- Manifolds
- Filtration Skids
- Weldments and Sub Assemblies
- OEM Process Equipment
- High Purity Distribution Systems
USD’s Certifications and Capabilities:
- A.S.M.E. Section IX Certified
- IBM Spec 15481 Certified
- Orbital Welders Qualified and Tested by Certified Consultants and Inspectors
- Certified Swagelok Tubing and Fitting Installers
- Helium Leak Testing
- System Modifications and Retrofit
- Custom Tube Runs and Interconnects
- All Preparation and Welding Procedures Performed Per Code with Continuous Quality Control

ISO 9001 Compliant
- Raytheon Six Sigma Certified
- Orbital Welding from 1/8” to 1/2” Dia.
- Clean Room Assembly
  - Class 100 - 10,000
- Computer Controlled Welding Process
  - Swagelok Model M100 Welder

Class 100 - 10,000 Clean Rooms

Tube Bending and Pipe Bending Services:
USD specializes in low volume, highly complex assemblies that usually require multiple disciplines and value added engineering.

A major semiconductor company requested a custom motor coil winding assembly for a laser lithography machine. The assembly required a precision shaped stainless steel tube that was used for the cooling of the motor windings and an intricately machined base plate. USD, looking at how the assembly of each item impacted the next, understood that the tube, when mounted to the base plate, could not affect the flatness or perpendicularity of the base plate. At the same time, the tube needed to fit interference free with the electrical coils.

Solution: USD analyzed the requirements and developed the fixtures and manufacturing approach that resulted in a flawless assembly. In order to produce a cooling tube that was consistent enough in shape, which a CNC process could not accomplish, USD designed an elaborate system of mandrels, levers and rollers to produce the form fitting cooling tube. The end fittings were then soldered in the tubes using silver solder.

The tube bending capabilities of USD are a value added service that we can integrate with other technologies to produce precision mechanical or electro-mechanical assemblies.