



*Benefits:
Helping Our Customers Succeed*

NAVSEA Success Story

Prototype to Production: Developing & Fabricating a Complex Titanium Weld Assembly

Challenge: Major Military & Defense Contractor had a requirement for a part that had a complex fluted / bellmouth geometry. They did not have experience with titanium and didn't understand the characteristics of this material such as the elasticity. The challenge was to form and fabricate simultaneously to make a (high tolerance) tapered shape weldment.

- **Solution:** Carver Machine Works' solution was to first build a prototype out of aluminum to determine how to best fixture the weldment. Concurrently we worked with the titanium material, of the same figment that the final design would be made of, to mitigate risk. This methodology enabled us to develop a process that was used to fabricate a part that exceeded customer expectations. We developed a fixture to produce an aluminum prototype by managing the weld distortion which was then applied to building the first beta unit out of titanium which was perfect!

• **Result:** The developed process transitioned smoothly into production insuring our customer that our manufacturing techniques could ensure they received exactly what they ordered. We fulfilled the immediate production requirements as are expecting more follow on orders. Extensive document control guarantees consistency with all future orders.

