

# **CASE STUDY:** Aerospace Structure

OSG has utilized both Third Wave Systems products, AdvantEdge and Production Module, to build their line of UVX-Ti tools. Using Third Wave Systems products, OSG was able to study cutting phenomena and evaluate cutting tool geometries. OSG uses this information gathered from Third Wave Systems products to help their customers understand machining practices that exhibit the best tool performance.



### Approach:

- » Use AdvantEdge to verify the cutting characteristics of Titanium
- » Use Production Module to study forces during Titanium machining operations
- » Use knowledge from simulations to determine the best tool design for chip and temperature control, stability and high material removal rates

### Software:

» Third Wave Systems NC optimization product, Production Module

#### **Results:**

- » UVX Series End Mills
- » OSG developed a new grinding technology to maintain blade strength while offering the benefits of variable helix and variable flute
- » Ti alloy aircraft landing gear
- » Reduce roughing time by 35%

Conventional Variable Helix & Flute Balance of Tool Strength & Stability

Load leveling opportunity to reduce cycle time.

Damaging force spikes removed.



Feed rates optimized across toolpath.

Third Wave Systems is the premier provider of validated material physics-based modeling solutions and services. The physicsbased machining simulation software products and services are used to optimize machining processes, giving engineers access to more information than trial-and-error tests and allowing them to make better decisions. Third Wave Systems' modeling products and services are used by progressive companies to dramatically reduce costs of machined components, accelerate design cycles, improve part quality and get to market faster.

## SEE MORE. KNOW MORE.