CASE STUDY

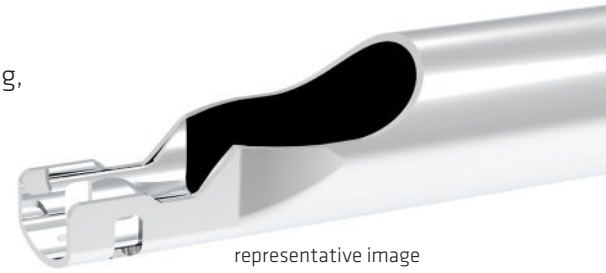
Advanced Energy Device Engineered with Ultra-Precise Tubing Tolerances for Superior Performance

CUSTOMER SITUATION

A global surgical technology company needed an external partner to help develop and manufacture tubing for an advanced energy device with measurably better performance than other leading devices. The customer was seeking to tighten both straightness and clamp-related tolerances by up to 50% to deliver superior burst pressure and sealing speed, which required a technical leap forward in already extreme tolerances.

The company selected Viant based on:

- **Recognized tubing quality** as the foundation of reliable, high-performing, minimally invasive surgical devices
- **Quick-turn tube fabrication** to quickly iterate and refine the design within its Tube Fabrication Center of Excellence
- **Manufacturing capacity and ability to scale,** ramping up production using automated equipment for fast-growing product volumes



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VIANT SOLUTION

Viant facilitated the design and managed the production of the inner and outer tube. Viant's deep engineering and process expertise drove development to optimize critical areas of the tube to reach the extreme tolerances needed to achieve the desired performance. The Viant team designed a custom tube-straightening system that enabled a 50% increase in straightness tolerance. The team also was able to reduced dimensional variation by 33% to improve clamp force, which delivers increased burst pressure and sealing strength.

Viant's unique Tube Fabrication Center of Excellence offers tube manufacturing and fabrication under one roof, allowing for maximum control and efficiency as the project moved from one process to the next. Viant was able to optimize the metallurgical processes from raw strip to downstream processes to balance performance, manufacturability, and value. An integrated laser and forming cell minimized tolerance stack-up by maintaining part datum throughout the process, and automated optical inspection helped to maintain process control.

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RESULTS

Viant collaborated with the customer to realize the design intent, successfully achieving dramatic tightening of the already extreme tolerances. The team also developed a robust process control plan and inspection methods to ensure consistency. In addition, the inner and outer tube sets were launched on time.

When demand for the product skyrocketed, Viant was able to meet a 350% increase in forecasted weekly volume - successfully achieving year 3 volumes midway through year 2. This successful project paved the way for multiple additional projects with this customer.

50%
INCREASE
IN STRAIGHTNESS
TOLERANCE

33%
DECREASE
IN DIMENSIONAL
VARIATION

MET 350%
INCREASE
IN WEEKLY VOLUME

VIANT™
WE'RE IN IT FOR LIFE.