



CASE STUDY: BIOLASE ENLISTS DINSMORE'S ADDITIVE MANUFACTURING EXPERTISE TO REPLACE URETHANE CAST PARTS

BIOLASE, Inc. is an Irvine, California based medical device company that supplies laser systems and dental imaging equipment, including CAD/CAM scanners. Dinsmore began working with the BIOLASE product development team to replace a crucial part in their soon-to-be-launched medical device. The part, previously made using urethane casting, was replaced using Carbon's M Series 3D printers. To make higher volumes of parts with urethane requires manufacturers to make multiple master tools which have a limited run life of 25-30 cast parts per tool and a 3 month shelf life. Carbon's Digital Light Synthesis™ technology and advanced materials allowed for accurate, on-going production and ultimately improved both economics and time to market for the new product.

Dinsmore's engineering team chose to develop the part using Carbon's RPU 60 material to meet form and fit requirements, which also exceeded the performance requirements of strength and rigidity.

The BIOLASE team plans to **produce thousands of the part each year** and was eager to get into production faster and with a lower the bill of materials (BOM) compared to conventional manufacturing methods.

"We've served the medical industry for more than ten years, and pride ourselves on being able to help our customers get their products to market faster. Our work with the BIOLASE team and Carbon's DLS technology allowed us to showcase our team's expertise in design for prototyping and additive manufacturing. We're excited to continue to work with customers across industries and find new application opportunities for Carbon's new additive manufacturing technology and materials."

Jay Dinsmore,
CEO and Founder
of Dinsmore Inc.



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"While urethane casting worked in the past, the process still didn't meet our requirements for cost and manufacturing turnaround time. The speed of Additive Manufacturing, along with this new material, gave us a high-quality part, at reasonable cost, that could be produced at scale."

Julio Cely,
Mechanical Engineer, BIOLASE



They had previously produced the part using urethane casting, a traditional manufacturing method for low-volume urethane polymer parts. The turnaround time for urethane cast parts can typically be five to eight weeks, and although cheaper than injection molding, any iterations on part design can be costly and time consuming.

Dinsmore's expertise in Design for Prototyping® and Additive Manufacturing allows customers to iterate on part design within days. Dinsmore's engineers were able to iterate on the part and get the final design approved by the BIOLASE product development and quality teams within two weeks from the project's kick off. Beyond the reduction in turnaround time by roughly 70%- increasing their go-to-market speed- BIOLASE also expects to save more than \$10,000 per year in BOM costs.

3D manufactured clip used in the medical device developed by BIOLASE

