

## CASE STUDY: Dimension Helps Kirby Morgan Dive In

"At the extreme depths many of our customers are required to work, there is no room for error," said Pete Ryan, senior engineer, Kirby Morgan Dive Systems Product Development. "Divers require us to provide safe, reliable, underwater breathing equipment, sometimes tailored specifically to their needs."

*"In the past, we were unable to fill custom product requests in such a short time period. The modified regulator we developed for the U.S. Military displayed the major speed and efficiency improvements you can achieve with the introduction of an in-house Dimension 3D printer."*

Pete Ryan  
Senior Engineer  
Kirby Morgan Dive Systems

With a rich history of providing cutting edge equipment, Kirby Morgan Dive Systems, Inc. thrives on delivering innovative, fail-safe products to the diving community. From commercial diving helmets to scuba regulators, Kirby Morgan dive systems are frequently designed to accommodate unique diving applications and extreme environments.

Kirby Morgan receives time sensitive requests from a variety of organizations, requiring rapid product design and redesign. Delivering the high-quality product Kirby Morgan has built its reputation on within a tightened time frame can be a major challenge. Kirby Morgan's dive systems are precision crafted to withstand the intense rigors of any diving environment. Designs must be thoroughly tested to ensure the highest levels of quality and reliability are achieved, regardless of deadline.

For years, Kirby Morgan outsourced the production of 3D models to service bureaus. The shipping and turnaround time needed to produce 3D models made it difficult to move through the design phase quickly and efficiently.

### The Dimension Solution

Kirby Morgan was in search of a more time-efficient process to build accurate, cost-effective 3D models used in the development of its dive systems. By bringing 3D printing capabilities in-house, they sought to cut model production time and to obtain complete control over the product design process. "Dimension was the obvious choice for us," Ryan said. "The durability and accuracy of the models produced meets our high standards and the purchase price of the Dimension 3D Printer was highly competitive."



*"Some of our new product designs and improvements require us to move ahead pretty quickly. The designs we create often require a lot of adjustments, handwork and multiple 3D models before a final version has been approved."*

Pete Ryan  
Kirby Morgan



Kirby Morgan has experienced significant improvements in its design process since the purchase of the Dimension 3D printer. When the U.S. Military requested a modified regulator with a higher level of breathing performance than the standard unit Kirby Morgan was producing, the Dimension 3D printer was put to the test. The design team needed to build and test two new components for the regulator, and the military requested delivery of the regulator as soon as possible.

With the Dimension 3D printer, Kirby Morgan was able to maintain its high standard of quality while meeting the U.S. Military's request for fast delivery. Kirby Morgan created several models of the two new components, evaluated the models, made modifications and had the special regulator finished and delivered to the U.S. Military in just one week - cutting weeks off the standard completion time required when Kirby Morgan outsourced 3D model production.

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The Dimension 3D printer has consistently provided Kirby Morgan with durable models that can be tested and retested during the evaluation process. The 3D printer also has increased the production team's efficiency during the design process by enabling them to cut model production time and the time required for the product review process.

"We now have a much higher level of control over the timing of the product design phase," Ryan said. "Since adding the Dimension 3D printer, we have averaged a 50 percent reduction in time spent on product design."

Dimension 3D printing can quickly fine tune designs and cut weeks - even months - from your development schedule. Now, with the ability to evaluate more design iterations, you can test form, fit and function right from a desktop.

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