CASE STUDY:

In-House Manufacturing with Knight Powersports

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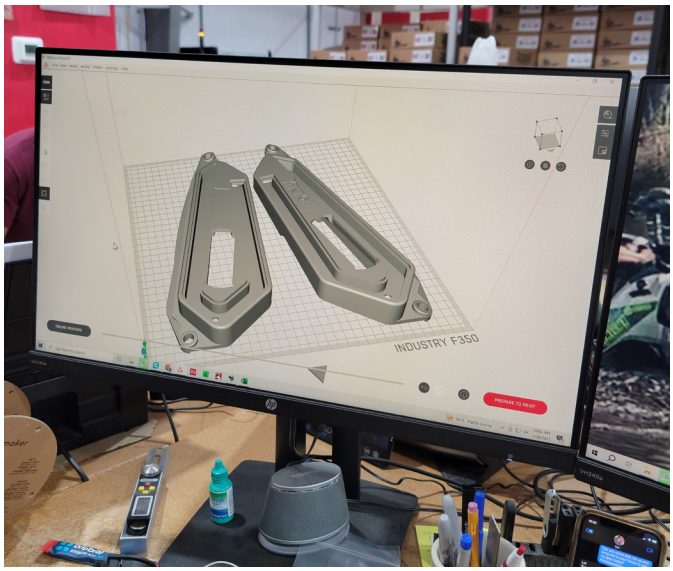
Introduction

Knight Powersports came into existence in 2010 when Joe Sgroi, still in college at the time, conceived his inaugural product. The genesis of this idea stemmed from his financial constraints; he lacked the funds to fix the issue at hand. Joe, with his resourcefulness, opted to share his design on public forums, eventually leading to its production. In 2015, Joe made the pivotal decision to leave his job and embark on the journey of founding Knight Powersports. He recognized an unmet demand in the market for his innovative designs. Joe Sgroi's father played a significant role in establishing the company and contributed to the design of the Powersports website.

At the outset, Joe operated the company with just two 3D printers, primarily used for prototyping and small parts. The concept of large-scale production did not initially factor into his plans. While injection molding had been his go-to method, he found it expensive and time-consuming for design adjustments. Joe's introduction to 3DGence came when he received samples from another 3D printer OEM. This OEM has a great product but it was too costly for what Joe was looking for. Driven by the cost-effectiveness and the capabilities of 3DGence machines, he decided to make the transition. The need for a production-ready machine became evident as the delay in receiving sample parts or orders from injection molding services kept increasing. Given Knight Powersports' modest size, the ability to manufacture products rapidly was crucial as they lacked the vast warehousing capacity of larger corporations. Moreover, Joe wanted to explore product design on a larger scale, a challenge his existing 3D printing setup couldn't fully achieve.

Joe's encounter with 3DGence revolutionized his perception of additive manufacturing and its production potential. The industrial-grade 3DGence printer offered high reliability, capable of running overnight uninterrupted and through weekends. Integrating Solidworks as their design software, they opted for the F350 model for its robust construction and intelligent features, minimizing downtime and production costs. Its user-friendly interface made it accessible even to those with limited experience in additive manufacturing. **Since purchasing their first F350, Joe has increased to one F350 and four F421 machines and is looking to add the new F1000 large format printer in the near future to continue his growth into new markets and product segments.**

Saving Time and Money



Currently, Joe employs his 3DGence machine for both end-use parts and prototypes. Knight Powersports primarily serves customers in the Florida-Georgia Line region where ATV riding, particularly "mud riding," is a popular pastime. Mud riding competitions involve racing through muddy terrain, creating a particularly challenging environment for the vehicle's materials. Thankfully, Joe's strong customer relationships have played a vital role in product development.

One of the company's flagship products is a can holder designed explicitly for mud-riding ATVs. This unique holder covers the top of the can, a feature absent in existing market offerings. Furthermore, an adjustable mechanism on the bottom ensures a snug fit, preventing cans from jostling around.

Initially conceived for injection molding, this can holder was instrumental in Joe's decision to acquire his 3DGence printer. Multiple design iterations made injection molding prohibitively expensive. Joe recognized the need for a cost-effective method to design, prototype, and create various part versions. Traditional injection molding required ordering quantities ranging from 500 to 5000 units, with lead times spanning months. For a small business like Knight Powersports, this proved impractical due to inventory constraints and limited design flexibility.

Additive manufacturing through 3DGence enables Knight Powersports to offer customizable products with a swift turnaround. They can produce and test customized products in house within a day, promptly satisfying customer needs. The automated printing capability of 3DGence significantly reduces product development time, enabling their employees to focus on creating new niche-specific designs.

Additionally, Knight Powersports has shifted its operations to 3D printing products and assembling them in-house. Despite the additional assembly step, this approach yields substantial cost savings by eliminating the need to order large quantities of inventory upfront.

This flexibility allows them to swiftly evaluate a product's market performance, facilitating a more cost-effective product life-cycle analysis. Consequently, the company has streamlined its operations, identifying "keepers" and products that should be discontinued more efficiently.

If you want to learn more about 3DGence and their printers or how Additive Manufacturing can help your business, contact us.

To learn more about Additive Manufacturing and what solutions might be right for you, contact us:

CIMQUEST

Address: 3434 US-22 #130, Branchburg, NJ 08876
Phone: (866) 277-8778
Email: info@cimquest-inc.com

For all your Powersports Accessory needs, contact:

KNIGHT
POWERSPORTS PRODUCTS

Address: 3212 Shafto Rd, Tinton Falls, NJ 07753
Phone: (732) 737-7761

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