



# Transformational Efficiency

SKORPION ENGINEERING ACCELERATES DEVELOPMENT OF LUXURY CAR PROTOTYPES WITH 3D PRINTING

*“In the context of the end-to-end manufacturing workflow, the level of time-saving with 3D printing isn’t merely improvement or progression, it’s transformational.”*

*– Italo Moriggi, Skorpion Engineering*

## CASE STUDY



With Stratasys 3D printing, Skorpion Engineering can produce robust prototypes within 24 hours, streamlining the overall production time of vehicles.

Since Skorpion Engineering’s start, 3D printing has been at the nucleus of the business, establishing the company as a pioneer in advanced automotive prototypes for luxury brands. Today, the company depends on its arsenal of Stratasys PolyJet™ and FDM® 3D Printers for high-performance prototypes, adopting innovative prototyping methods to help luxury brands bring their concepts to life quickly while maintaining a competitive edge.

As a rapid prototyping service provider, Skorpion Engineering is a pioneer of advanced automotive prototypes, incorporating 3D printing throughout its production process to ensure customers receive maximum performance, accuracy and turnaround time.

## Fast Customization

The company's PolyJet and FDM 3D Printers provide a varied range of both external and internal automotive prototypes, from door handles to full-size seat frames. Recently the company 3D printed a life-size car bumper, a part which automotive manufacturers traditionally outsource in clay. However, since the fragility of clay parts leave them prone to potential damage during transit, outsourcing costs invariably skyrocket and lead-times quickly escalate from weeks to months. In addition, if iterations are required, this greatly impacts the wider supply-chain and delays the production of the vehicles.

To overcome these barriers, Skorpion Engineering 3D printed the 1.4 m / 4.6 ft bumper on its Stratasys Fortus 900mc™ 3D Printer. This reduced turnaround time by a massive 50% compared to traditional methods, enabling it to get the part to its customer quicker than ever before.

"This ability to streamline our turnaround time enables our customers to undergo aesthetic and functionality verification significantly faster. This directly impacts their overall production cycle and helps accelerate their time-to-market," said Italo Moriggi, General Manager, Skorpion Engineering.

3D printed in Stratasys' ABSplus™ thermoplastic material, the bumper offered the same mechanical characteristics and expected performance as the final part, while also offering weight savings compared to its clay counterpart. As a result, this produced an aerodynamic prototype with improved part performance while undergoing functional tests. "In the context of the end-to-end manufacturing workflow, the level of time-savings with 3D printing isn't merely improvement or progression, it's transformational," said Moriggi.

## Precise Prototypes

The company 3D prints precise internal automotive prototypes that exactly match the final parts. In another recent project, the company 3D printed a highly accurate vehicle dashboard. Previously, this would have been produced in clay, which often resulted in a rudimentary model that did not meet Skorpion Engineering's exact standards.

Utilizing its Connex3™ 3D Printer, the company combined varying textures of rigid and soft material to produce a highly detailed prototype in one print, reducing turnaround time by 50%. This level of precision has been key to unlocking wider design freedom.

"3D printing by its very nature, enables us to create customized parts with complex geometries in a fraction of the time over traditional methods," said Moriggi. "3D printing allows us to optimize parts and indicate how our customers can best overcome engineering challenges early in the design stage, saving them both time and capital."

## Driving Concept Car Production

After successfully streamlining customers' prototyping requirements, Skorpion Engineering is discovering more benefits of 3D printing, including the unparalleled capabilities of 3D printing final production parts.

"3D printing has been integral to our ability to compete with traditional rapid prototyping service providers and transform our customers' product development cycles. With our experience, coupled with our Stratasys 3D printers, we are now looking to extend our service to the production of high-endurance final manufactured parts, and produce a fully-functional concept car within the next five years," said Moriggi.



Utilizing its Stratasys 3D Printers, Skorpion Engineering produces high-endurance prototypes 50% faster compared to traditional methods while offering improved part performance.

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