



Speeding Ahead

DIMENSION 3D PRINTER HELPS KOENIGSEGG DEVELOP SUPERCAR WITH A TORQUE OF 920NM

“Simply put, our Dimension 3D Printer saves time, money and allows us to work more freely.”

– Christian von Koenigsegg, CEO

CASE STUDY



Koenigsegg developed this Koenigsegg CCXR, the first green supercar, with help from its Dimension 3D Printer.

Manufacturing and assembling each of the components of a Koenigsegg car is very labor-intensive, as more than 300 carbon fiber parts make up each high-tech supercar. The best method of designing a new car is to test the parts virtually and as true-to-life prototypes. By testing throughout the development cycle, Koenigsegg’s designers can determine which designs yield the best possible results.

The team of six starts the development process by designing each individual part on its CAD system. They then print a high-density plastic model of each component to carry out various testing scenarios. If changes to the part are required, they can be made manually and then scanned from the altered model component. This scan is then used to make a new CAD model, which can be printed again for further testing.

Previously, Koenigsegg outsourced the 3D printing of its prototypes to a service bureau. This stop/start approach proved to be disruptive to the process and typically added on days to the cycle, halting the development of the car. It also added to the cost and administration of the development process, which reduced Koenigsegg's overall efficiency. The company needed to speed up its prototyping in order to evaluate different versions of a design more quickly and effectively.

Immediate Benefits

Koenigsegg realized that having a 3D printer on-site would speed up the prototyping process and therefore the development of its cars. After evaluating all 3D printers and judging each one on performance, available materials, price and size, Koenigsegg purchased a Dimension® SST 1200es™ 3D Printer.

“Dimension was an obvious choice for us as it not only allows us to modify and print prototypes quickly but also provides us with the option to use them as end use parts in our cars,” said Christian von Koenigsegg, founder and CEO at Koenigsegg Automotive AB. “Once the Dimension 3D Printer was up and running, our engineers started using the machine straight away. The benefits were clear immediately. The process of printing prototypes onsite and testing each component has sped up the development of the car design by an estimated 20 percent.”

Heightened Design Creativity

The Dimension is now used in-house for design prototyping of the supercars as first planned. The printer can be used by Koenigsegg for everything from printing engine parts to designing interior fixtures. It can also be used for tooling, fixtures and studies and on component mountability and serviceability. A key benefit of the Dimension 3D Printer is that the prototype parts produced can also be used as working parts in the end product.

“Since purchasing the Dimension 3D Printer, the turnaround time for getting a component right in terms of design has decreased enormously, it now only takes a few days instead of a number of weeks,” said von Koenigsegg. “Our designers and engineers can quickly establish a part’s suitability for the supercar without stifling their creative flow.”

The Dimension 3D Printer has aided in the design of Koenigsegg’s latest model, the Agera. Every engineer now has access to the printer, which has not only sped up the design process and allowed the team to be more creative and push the boundaries of supercar development. For example, printing and testing prototypes for the air inlets assisted Koenigsegg’s engineers in developing a supercar with a staggering torque of 920nm reached at 5000rpm.

Von Koenigsegg sums up the impact of the Dimension, “Simply put, it saves time, money and allows us to work more freely.”



Christian Von Koenigsegg, CEO at Koenigsegg, with one of the supercars.



Front bumper drill fixture used to test the design.



Mounting the label fixture onto the CCX series.

How Did Dimension Compare to Traditional Prototyping Methods for Koenigsegg?

COST	TIME
40% saved	20% saved



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