Ford

Benteler

F1 Racing

Porsche

Industry Spotlight

Automotive Component Design

Z Corp. 3D Printers are used for everything from concept creation to production planning, allowing design engineers to speed and improve the development process.

PROBLEM

The automotive industry has historically used rapid prototyping as an integral tool in the design process. However, outsourcing high-end prototypes is expensive, and can cause a strain on design lead times. The fast-paced design cycles in the automotive industry require a rapid prototyping solution that can produce almost any geometry with a variety of material properties, quickly and inexpensively.

Z Corp. 3D Printers Improve:

- **Internal Communication:** Z Corporation 3D printers enable design teams to efficiently iterate on product concepts early in the design process, enabling multiple renditions to be visualized and critiqued by a variety of functional teams within an organization.

- **Functional Testing:** Utilizing Z Corporation's range of infiltration resins, automotive design engineers are able to conduct functional testing on parts printed on a Z Corp. printer. Infiltrated parts can be machined, drilled and tapped. Additionally, infiltrants can be used to significantly improve the durability, humidity resistance and high temperature properties of Z Corp. parts during airflow, vibration and other rigorous testing.

- **Casting:** Z Corporation's ZCast™ Direct Metal Casting process allows engineers to pour metal directly into a mold printed on a Z Corp. 3D printer, eliminating the need for a pattern. Additionally, Z Corp. parts can be used as patterns in the traditional investment casting and sand casting processes for the production of metal prototype parts.

- **Production Planning:** Automotive companies use Z Corp. parts to walk the product line and ensure that they have the right tools at each station to complete production in the most efficient way possible.

Cylinder head printed on the Z810 Large Format 3D Printer.

Intake manifold (ZCast mold and metal part) produced using the ZCast process.