

“By combining engineering expertise with additive technology we created a **full-size, fully functional prototype** for real world testing.”



project brief

DI Labs was approached by an aftermarket automotive tuning company doing work for European sports cars. They were interested in developing a fully functional prototype of an intake manifold that would accept their supercharger and create forced induction. It was a challenging request due to the extreme heat and pressure of the testing conditions. Add to that a size that is beyond the build capacity of our commercial 3d printers.

To create a solution we re-engineered the design into three separate pieces with a proprietary, integrated joining system that created a permanent seam. The design was robust and took into account our material selection which as glass bead reinforced nylon. Our original part, shown above, was smoothed for aesthetic appeal. Later we also applied VaporFuse Surfacing to the part for moisture resistance and a more polished appearance. Ultimately, this part performed well in real world testing conditions.

services



Design



Prototyping



Finishing

expanded video case study at www.dilabs.cc/manifold



Project Demands

- Must withstand the extreme heat & pressure conditions of real world testing
- Required integrated hardware
- Needed aesthetic appeal which is important to car enthusiasts

DI Labs Solutions

- Re-engineered design to allow a large part to be printed in a smaller print volume
- Used glass bead reinforced nylon material
- Included heat staked brass inserts
- Applied a finishing technology for aesthetic appeal