HP MULTI JET FUSION SIMPLIFIES PRODUCTION OF RACE CAR MANIFOLD

Data courtesy of Heli Racing, printed by Zigg Zagg NV

CUSTOMER AT A GLANCE

Heli Racing is an amateur sports racing team based in Belgium. Since the 2016 racing season, Heli Racing has invested in a newer, faster car that combines their current fuel-efficient diesel engine with the performance of a fast touring car. With this car, they will return to the Belgian Gentleman Drivers Club (BGDC) and Belcar's Belgian Endurance Championship.

THE CHALLENGE

The Heli Racing car, a BMW 120d, incorporated a manifold made with two Injection Molded half-parts glued together. This manifold—a standard industrialized part from BMW—did not meet racing requirements: It would burst during the race when the glue joint between the two half-parts was not strong enough to resist pressure and thermal conditions.

INDUSTRY	Mobility and Transportation
SECTOR	Motorsports
MATERIAL	HP 3D High Reusability PA 12
POST-PROCESSING	Bead blasting

RESULTS

Using 3D scanning methods and reverse engineering, the manifold has been replicated digitally and improved with some technical adjustments.

The manifold was 3D printed in just one part to prevent problems with glue sealings. The 3D printed manifold performed very well during racing, where it withstood a pressure of 3 bar and temperatures of up to 80ºC.

3D printing with HP Multi Jet Fusion technology also resulted in:

- **Enhanced performance:** The 3D printed manifold withstood a pressure of 3 bar and high race temperatures of up to 80ºC.

- **Reduced number of parts:** Rather than relying on a two-part manifold that is held together by glue, the HP MJF manifold was 3D printed as only one part.

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