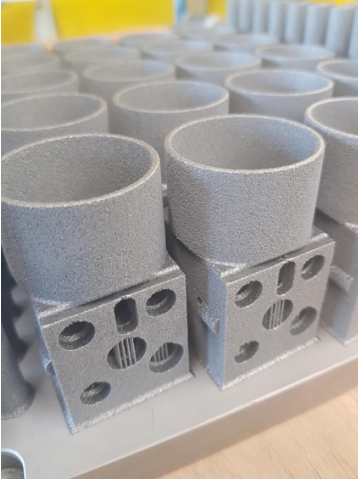


Case Study: Hydraulic Actuator Case (DISPAL® S260 AM)



In the competitive landscape of automotive and motorsport engineering, the pursuit of superior performance, efficiency, and weight reduction is unrelenting. This case study delves into the transformative journey of a Hydraulic Actuator project, where the main drivers were a 30% reduction in weight, streamlined manufacturing steps, and a substantial 2:1 reduction in assembly.

Industry: Automotive, motorsport

Material used: DISPAL® S260 AM

Challenge: Traditional materials, especially steel, proved limiting in meeting the industry's demands for enhanced performance.

Solution:

- **Material Innovation:** DISPAL® S260 AM emerged as a game-changer, replacing conventional steel. This strategic shift addressed the weight reduction imperative without compromising the structural integrity required for high-performance hydraulic actuators.
- **Fine and Homogeneous Microstructure:** The fine and homogeneous microstructure, enriched with copper (Cu) and magnesium (Mg), ensured not only exceptional wear resistance but also mitigated deformations even under the most demanding high-temperature conditions experienced in the highly demanding environment of motorsports.

Outcomes:

1. **Weight Reduction:** The adoption of DISPAL® S260 AM facilitated a remarkable 30% reduction in the weight of the Hydraulic Actuator. This not only contributed to enhanced vehicle dynamics but also played a pivotal role in achieving superior fuel efficiency.
2. **Manufacturing Efficiency:** Thanks to DISPAL® S260 AM it was possible to reduce the manufacturing steps for making this component. DISPAL® S260 is designed for wear resistance and does not require any surface coating that would be otherwise required if using a softer aluminum.
3. **Assembly Reduction (2:1):** in this case Additive Manufacturing allows for functional integration of 2 components in one, further reducing manufacturing and assembly for an efficient production line of components that has no equal.

This case study underscores the potential for materials like DISPAL® S260 AM to redefine industry norms, offering weight reduction, manufacturing efficiency, and assembly streamlining without compromising on performance. It's a testament to the transformative power of material science in driving advancements in high-performance automotive components.