

Experts in rubber engineering

MARTIN'S
RUBBER COMPANY

Since 1865



Alternative
solutions for a
leakage problem
in a V6 racing
engine

**UNUSUAL
SOLUTIONS
TO SOLVE
A UNIQUE
PROBLEM**

WE DARE TO DO THE DIFFICULT



Combining industry-specific knowledge with expertise in rubber engineering – whilst collaborating with engineers on site – allows us to think past the usual solution to a problem and design something to fit within a unique range of parameters.

THE CHALLENGE:

To provide an alternative solution for a leakage problem in a V6 racing engine, where space made the standard solution untenable and heat from the exhaust system caused a potential hazard.

THE OUTCOME:

Ginetta are renowned for, and extremely proud of, their heritage as a successful British race car brand.

Each car that Ginetta produces is built in their Yorkshire-based factory, with many of the components hand-crafted on site to ensure excellence throughout the entire vehicle. Ginetta's G60-LT-P1, developed for the LMP1 class of the FIA World Endurance Championship, was ready for testing at the beginning of 2019. However, powered by the AER P60B turbocharged P6 engine, there was a problem with airbox leakage ahead of the turbo; a critical failure in a vehicle that needed to be reliable for endurance racing. The problem was further complicated by a lack of space within the airbox; this prevented the standard internal fixing solution whilst the close proximity to the exhaust system raised concerns over heat, making material selection for the product a critical factor.

Employing our product design consultancy services, engineers from Ginetta presented the problem to us and worked with our engineering team who recommended an alternative solution;

a moulded boot fitting around the outside of the air filter outlet, with a bonded metal ring to provide a secure fixing to the input section of the turbo. A critical factor was the lip seal over the compressor inlet, which needed to be as light and as small as possible, without compromising the effectiveness of the seal.

We used 2D and 3D CAD design to present our solution, then produced a tool and prototype parts for testing prior to full manufacture.

Ginetta now have a reliable, secure solution for their leaking airbox without compromising the design of the main component.

Andy Lewis, Head of Aerodynamics at Ginetta, was thrilled with the solution and had this to say: *"It works really well, the fitment over the compressor inlet is a good seal and doesn't deform too much when bolted in position and the large diameter around the airbox fits nicely. No burning from the heat of the exhaust headers too."*

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Andy Lewis,
Head of Aerodynamics at Ginetta





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