

# Eagle uses HP Jet Fusion 3D printer for premium quality Jaguar car parts



**Classic-car specialist Eagle E-Types needed to find a way to manufacture low-volume Jaguar E-Type components at less cost but with the highest standards**

## INDUSTRY

Classic car restoration

## SECTOR

Prototype and component printing

## OBJECTIVE

Cut overheads on low-volume parts while maintaining quality

## APPROACH

Use HP world-leading 3D printing technology to manufacture classic-car components durable enough and attractive enough for Eagle's audience of collectors

## TECHNOLOGY | SOLUTION

HP Jet Fusion 4200 Industrial 3D Printing Solution

## MATERIAL

HP 3D High Reusability PA 11, HP 3D High Reusability PA 12, HP 3D High Reusability PA 12 Glass Beads, ESTANE® 3D TPU M95A



## Introduction

Originally released in 1961, the E-Type was manufactured until 1975. It's one of the classic sports cars. And that makes it highly sought after by collectors. Eagle E-Types is the UK's leading restorer of classic Jaguar E-Type sports cars.

The company meticulously restores each car it procures over the course of around 4,000 hours. It also upgrades each E-Type to a modern-day standard of quality, while staying true to the style and ethos of the original design. The BBC's Top Gear has called Eagle E-types "probably the best built handmade car in the world."

But the company faced a challenge. It had to find a way to manufacture specialist parts in small quantities without incurring the prohibitive costs involved in re-tooling large-scale industrial processes designed for much bigger manufacturing runs.

After extensive research, the company turned to Graphite Additive Manufacturing Ltd and the HP Jet Fusion 4200 Industrial 3D Printing Solution.



### Challenge

A key challenge for Eagle E-Types was its low volume component requirements. The business only creates four or five E-Types per year. On top of this, there are five model variations, each being either left or right-hand drive. Each model has entirely different technical specifications.

Because of this, the company uses certain bespoke parts in very small numbers — perhaps even just one per year. Normal manufacturing methods such as laser cutting, machining and moulded parts require production of a reasonable quantity to be economically viable.

Eagle E-Types had to find a way to make the parts, many of which were for the interior of the vehicle where the driver would see them, more affordably. But quality was still of the upmost importance. Everything in these restored classic cars had to look and feel perfect.

“We’ve been impressed by the improvement in how these parts look since using HP 3D printing, as well as their durability”.

- Paul Brace, director at Eagle

### Solution

For the past four years, Eagle has worked closely with Graphite Additive Manufacturing Ltd., a UK-based 3D Printing Service Bureau which produces one-off models or production runs of functional parts for businesses.

To fix this problem, Eagle E-Types and Graphite Additive Manufacturing turned to the HP Jet Fusion 4200 Industrial 3D Printing Solution. Designed to produce the highest-quality, functioning parts — for prototyping and production purposes — this HP 3D-printing solution offered a streamlined, efficient and clean working experience.

It was also highly configurable and able to produce short manufacturing runs without incurring the prohibitive overheads of traditional subtractive technologies. And whereas with previous technology, Graphite Additive Manufacturing Ltd. had to mix materials and load the machine by hand, HP Jet Fusion 3D 4200 simplifies the workflow with automated material mixing and loading systems.

For Graphite Additive Manufacturing Ltd., HP has helped to cut down an entire day’s work into a period of 30 minutes. With increased automation, HP technology also reduces Graphite Additive Manufacturing Ltd.’s use of materials during production, allowing it to reclaim and reuse excess material.





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- George Brasher, UK&I Managing Director at HP

### Result

HP’s 3D printed parts allow Eagle to order single units economically, as the digital 3D model is easily adjusted and the final part swiftly printed. This means that, if required, every part can be an evolution of the last with no cost implication from the change other than the shipping.

Since using HP Jet Fusion 3D 4200 technology for the air conditioning and heating air ducts within its E-Type cars, Eagle has benefitted from a significant reduction in turnaround times, streamlined processes and greater flexibility to meet customers’ unique demands.

“We’ve been impressed by the improvement in how these parts look since using HP 3D printing, as well as their durability,” said Paul Brace, director at Eagle. “The heating ducts need to be attractive enough to sit on the dashboard, and these parts match the exceptional quality of our classic cars. With HP technology, we get the desired finish first time.

Additional benefits we’ve seen include the wider scope for shapes that we can now create using 3D printing, and the weight reduction in materials on offer. This adds value for customers who are keen to keep parts as lightweight as possible.”

“We’re thrilled that the customisation offered by HP technology allows Eagle flexibility and efficiency when designing its market leading bespoke vehicles. The ability of 3D printing to produce custom-made, high-quality car parts provide a host of solutions for the automotive sector, and we’re excited to see how it helps shape the future of car manufacturing in the coming years,” commented George Brasher, UK&I Managing Director at HP.

The HP Jet Fusion 3D 4200 offers customers an easy-to-use solution that scales with its business, and an integrated, end-to-end process that delivers both functional prototypes and final parts.



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