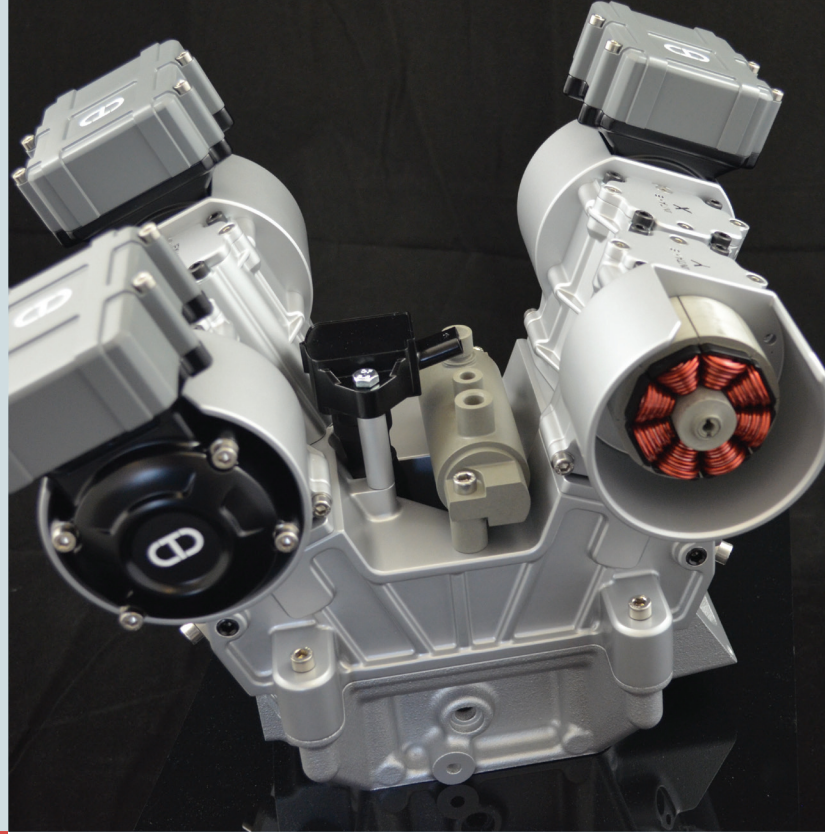


Revolutionary 'Digital' Valvetrain



Case Study

Client: Camcon Automotive
Sector: Automotive
Purpose: Exhibition model
Process: SLA, SLS, Paint and Finishing

As governments and organisations seek to improve performance and efficiencies across all industries, an engineering and product development company has tackled an issue in the automotive industry that others have deemed to be impossible by bringing the last key element of engine combustion under digital control.

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Camcon Automotive was founded in 2009 to develop several revolutionary solutions based on its core solenoid technology. The iVT (intelligent Valve Technology) system allows fully electronic control of valve events, bringing the potential for improved engine operation and reduced CO2 output.

Working with Camcon to deliver this pioneering technology are Furnace Design, a consultancy based near Brighton who are known for their innovative and solutions-based approach to helping clients develop ideas, products and vehicles. When Furnace had completed the design, they turned to Ogle Models to deliver the final part.

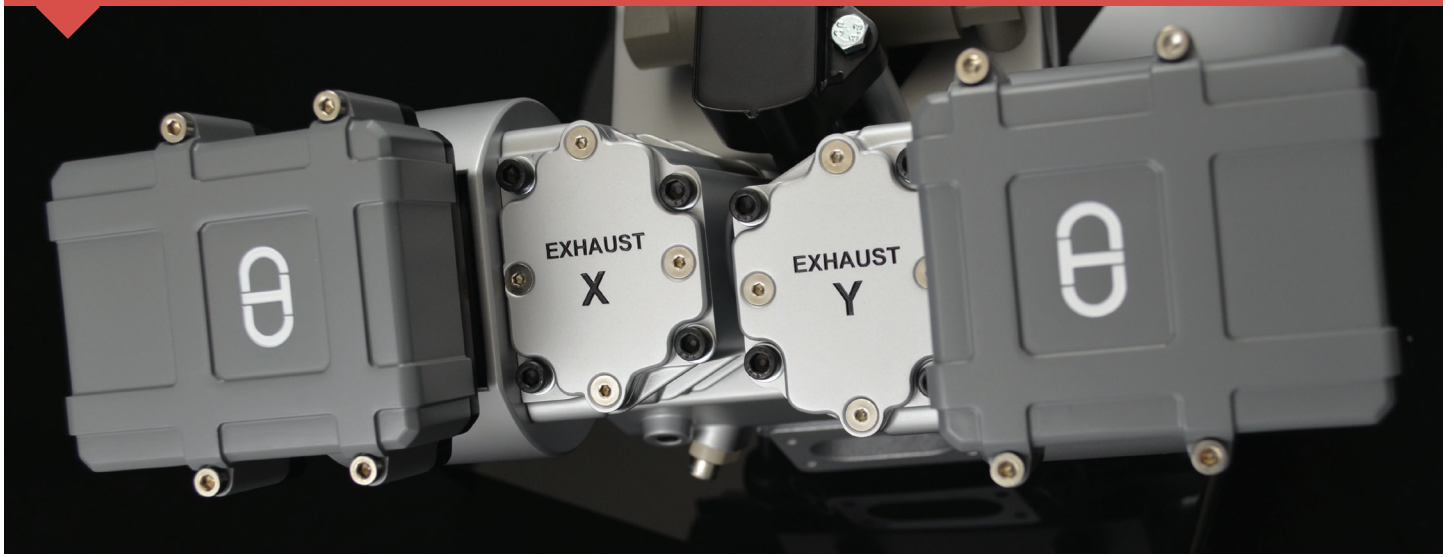
The challenge

As the part was to be used for promotion at trade visits, exhibitions and prospective client meetings, it was imperative that the part looked realistic. This required a high level of paint work to mimic the multiple metallic finishes; cast metal, injection moulded parts and steel. An additional complexity to the paint and finishing of the part was the multiple processes used to produce each element.

Also, to effectively 3D print the part, the CAD needed to be broken down and each component printed separately. This is when Ogle come into their own, having skilled and experienced model makers to ensure the parts fit seamlessly together.

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The main cylinder head was produced using SLS which not only allows for complex geometry but is self-supporting with high tensile strength. The accuracy achieved at Ogle is +/- 0.12mm per 100mm.

Due to the end use of the part, Camcon required parts of the model to be dismantled and reassembled to fully display the complex interior of the model. Ogle achieved this by ensuring that during the finishing process all parts were thoroughly tested for fit.

Tight lead times

When the project was awarded, Matt White, Senior Prototype Engineer at Ogle, said: "It's great for our team to work on such revolutionary projects that we know will end up changing or shaping their industry. It was a pleasure to work with Furnace Design and deliver the part on time and on budget."

Conclusion

As the part is now flying across the globe to appear at various exhibitions, Ogle were keen to obtain feedback on the success of the project. Owen Evans, Director at Furnace Design, said: "We have worked with Ogle before as they are highly regarded within the industry. We knew who to turn to when we needed a complete start-to-finish service and wanted to see the finished part as accurately presented as possible. Ogle were the first port of call. Their team also managed to hit a very tight deadline which was remarkable."

For more information about Camcon, visit www.camcon-automotive.com

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Owen Evans, Director, Furnace Design

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