Champion Racing Engines

Since 1983, Kelley Roberts of Racing Engine Components has been building motorcycle engines to the max. A perfectionist by nature, Roberts doesn't let even the smallest detail go unexplored when immersed in a project.

Thankfully his CAD design solution of choice is Ashlar-Vellum's Cobalt, allowing him the freedom to think through and explore concepts almost as freely as drawing with pencil and paper, but with the trademark precision of Cobalt.

The way Roberts built engines changed by accident when he purchased a used computer with Ashlar-Vellum's 3D design software installed on it. Without realizing what he had, he began tinkering with it. With no previous CAD experience, he began using it and would never go back. Now, as with many Ashlar-Vellum customers, after trying several other CAD programs including SolidWorks, he remains an Ashlar-Vellum loyalist declaring that, "Cobalt's ease of use and intuitive nature is amazing. It stands alone."

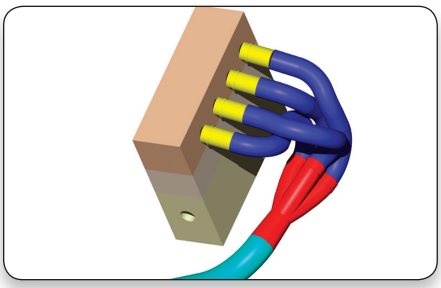
The exhaust system on Robert's engine is so extremely complex that it requires complete freehand design.

" It was a real trick designing that exhaust system. I tell you, this is where Cobalt really comes into its own. Cobalt makes me better than I am."

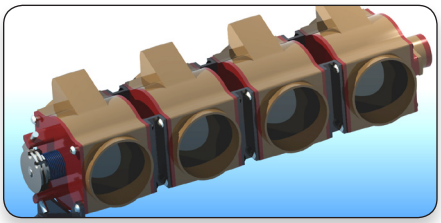
Serving clients worldwide, Roberts' recently-completed engine design was shipped to its owner in Italy, where it was received with much excitement and praise. The super-powered engine was so complex that it had over 300 parts upon completion, all designed in Cobalt. The engine is extremely cutting edge for the motorcycle industry, boasting the smallest possible stand-alone throttle body and maximum air intake, which equates to sheer, unbridled power.

"Without Cobalt I would have created about 2/3 fewer parts. It just wouldn't have been possible, time-wise, to achieve this level of complexity using any other CAD system. For instance, this morning I created a last minute,

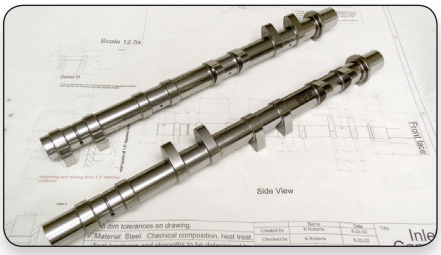
non-essential part in 10 minutes. All that's left is to drill a couple of holes and I'm done. That's not possible in another CAD system."



Roberts used Cobalt to design and calculate the exact amount of inconel, a highly heat-resistant alloy for high performance engines.



Over 300 parts were designed and constructed for this engine assembly. Cobalt assisted where CAM software could not.



Roberts produces these 260HP inlet cam shafts, that are ground and super finished to specification.

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