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 rapid design and development software 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, or even computer experience, he began using it and would never go back. Now, after trying several other CAD programs, he remains an Ashlar-Vellum loyalist declaring, "Cobalt's ease of use and intuitive nature is amazing. It stands alone."

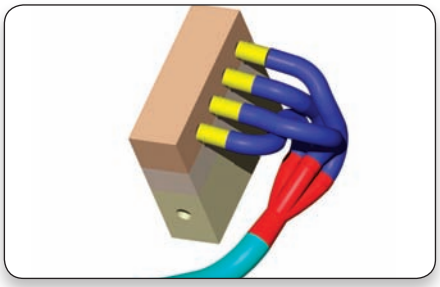
The exhaust system on Roberts' engine is so complex that it required complete freehand design.

"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."

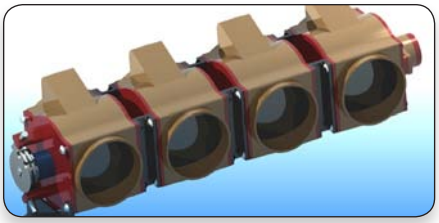
Kelley also appreciates Cobalt's built-in translators and ability to interface with CAM software. While most parts are manufactured by him personally, several, such as a precision sprocket, require specialty manufacturing from as far away as Hungary. For this, the file interchange worked perfectly.

Serving clients worldwide, Roberts' recently-completed engine design was shipped to its owner in Italy, where it was received with high praise. The super-powered engine had over 300 newly designed parts, all modelled 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 and produced a last minute part in 10 minutes. 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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