

Autodesk Inventor helps Titan Motorsport to the front of the grid



Titan Motorsport implements Mechanical Desktop 4 to design engine components that the company manufactures for racing cars. Race-cars and rally cars are highly modified thoroughbreds that require a variety of custom designed parts to enhance their engine performance. Titan Motorsport specialise in this and use Autodesk Inventor to achieve maximum efficiency and time-saving in the design phase.

Titan Motorsport started life in 1967 as Charles Lucas Engineering, named after its founder. The company designed, manufactured and raced single seater racing cars called Titans. In the early 1970s, the company changed its name to Titan Cars and continued designing and manufacturing complete racing cars. It also started manufacturing engine components for racing cars and preparing race engines for customers.

By 1976, the decision was made to concentrate on the engine side of the business. Engine preparation and the design and production of engine components became the core products. To reflect this, the company name was changed to Titan Motorsport. Titan Motorsport is a private company, wholly owned and run by the two directors, Oz Timms and Diana Thomas.

Titan Motorsport has used AutoCAD since they traded in their drawing boards for their first CAD system. And they still use AutoCAD today, now bundled with Autodesk Inventor Suite. Terry Slipper, Titan Motorsport's head of design, said, "When we upgraded to AutoCAD Release 14, we decided to go to 3D Solid Modelling, so we took Mechanical Desktop. It was a revelation." Autodesk Inventor has now taken Titan Motorsport to another level.

"The first job we used it on was a race-car sump. We designed it and emailed the model to one of our pattern makers, who was able to generate the tooling paths and machine the pattern directly from the model. In a very short time we had received a proof casting and realised we were weeks ahead of our normal schedule for a job like this."

Autodesk Inventor eliminated several stages from the process, not only saving time but also reducing the number of opportunities for errors. Terry Slipper explained, "Before we introduced Autodesk Inventor, the designer would start off with a concept visualised in 3D and express it in 2D drawings. In the case of a cast component, the drawings were sent to the pattern-maker who had to convert them back to a 3D concept. Throughout this process there were many opportunities for errors to creep in. One big advantage we've found with 3D solid modelling using Autodesk Inventor is that whatever we design on the screen is exactly how the product turns out."

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Titan Motorsport discovered that 3D solid modelling with Autodesk Inventor has brought further advantages. Terry Slipper said, "With 3D solid modelling, you have something to show the customer before the product is actually made. You can have a complete assembly model of the product available for project discussions with the customer. And the customer can see exactly what he's going to get. That's a big advantage."



Being able to re-use data without having to draw every component afresh every time brings significant time savings too. Terry Slipper said, "We design many cast components and we have separate drawings for casting and machining details. Previously, we would draw the casting detail and then start from scratch again to draw the machining detail. Using Autodesk Inventor, we can create the casting drawing and then, to create the machining detail, simply edit the casting drawing. You might complete the first drawing in about 60 percent of the time you'd take to draw it manually,

but the real time saving comes when you move on to the second drawing. You might complete it in only 30 percent of the time it used to take. The ability to re-use data cuts drawing time dramatically. Also, as you work through the various iterations of a design, you can save each version. So, if you decide that an earlier iteration was better, you can go straight back to it. You can't do that with a manual drawing."

As each new version of Autodesk Inventor was released, Titan Motorsport upgraded to it. Terry Slipper said, "The tool is so good that we're happy to upgrade each time". The company now has three seats of Autodesk Inventor Suite.

Autodesk Inventor was supplied to Titan Motorsport by Micro Concepts, who arranged training and continue to provide support. Mark Mills of Micro Concepts described the training programme. "We provided Titan Motorsport our five-day implementation course, which is based on Autodesk's four-day training course with the addition of an extra day at the customer's site. The day is particularly valuable, as it is taken after a few weeks, because by then the customer has had some experience of working with the software for real and we can deal with any questions or issues that have arisen." Terry Slipper said, "We always take full maintenance from Micro Concepts. We wouldn't be without it. They're very good vendors. We've had assistance from them on lots of occasions, so full maintenance has been really worthwhile for us."

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Titan Motorsport has moved into the design and manufacture of components for road cars, which involves going from small batches of 200-500 parts per year to production runs of several thousand per year. To satisfy these long production runs without compromising the fast reaction time that motorsport demands, the company recently started a second production facility, an independent company called Titan Automotive, on the same site in St Neots, Cambridgeshire. Titan Automotive is wholly owned and run by its four directors - Oz Timms, Diana Thomas, Terry Slipper and Paul Littleddyke. Together, Titan Motorsport and Titan Automotive employ a total of about 38 personnel.

To learn how Micro Concepts, together with Autodesk Inventor, can help make your company become Number 1 in your market – call 01223 716200 or visit www.microconcepts.co.uk