

CE Masters Helps Clients Optimize Product Designs Using Pro/ENGINEER®



Leading Dutch Engineering Consultancy Uses PTC Products to Automate the Design Process



DID YOU KNOW

CE Masters, Gorinchem, The Netherlands

Established in 1993, CE Masters is a leading mechanical product development company based in the Netherlands. Clients rely on CE Masters for top-notch 3D engineering design work that includes both consultancy services, as well as the expertise of its highly skilled design engineers who can also work on-site at clients' locations.



The Challenge: Deliver Exceptional Value-Added Engineering Services

With the emergence of 3D CAD in the early 1990's, CE Masters found that their market had a need for experts who could help leading manufacturers get more out of their 3D CAD systems. CE Masters discovered that many of these firms needed to improve not only the mechanical development of their products, but also their entire development process.

The Solution: The Pro/ENGINEER Family of 3D CAD Tools

Most of the engineering consultants at CE Masters have well over a decade of experience with Pro/ENGINEER, the 3D product design software solution from PTC. This experience, together with their extensive knowledge of other integrated PTC products, enables CE Masters to offer unparalleled design services, including analysis and simulation. CE Masters has standardized on Pro/ENGINEER as its design tool of choice.

The Result: Getting Products to Market Faster, with More Time for Innovation

Seeing that its customers were spending considerable time on repetitive design tasks, engineers at CE Masters developed a number of unique product configurators that enable clients to automate the design of different product variations. These configurators, based—among others—on Automation GATEWAY® software, make repetitive tasks routine, so that customers can simply start up Pro/ENGINEER, retrieve a design, and have it configured to customized specifications, automatically. As a result, CE Masters' clients are delivering products to market more quickly, and freeing up more time for design innovation.

Mechanical Product Development and Consultancy

In the early 1990's, with 3D CAD (computer-aided design) emerging as a powerful new design tool, many manufacturers were excited about the new technology, but unsure of how best to use it. Thus, in 1993 CE Masters was founded as a design consultancy whose mission was to help companies use 3D CAD to maximize their product design and engineering strategies, and ultimately get more profit from their investments in CAD design tools. Since then, CE Masters has grown to become a leading mechanical product development company in the Netherlands, serving many well-known companies who require exceptional product development expertise.

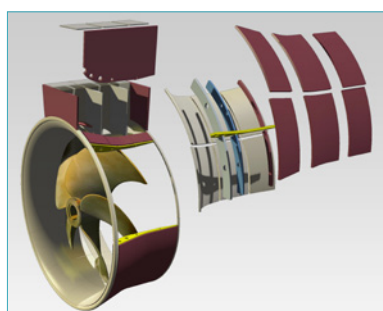
While CE Masters provides consulting services to companies performing their own design, they are also experienced technicians. As such, they deploy engineers with advanced knowledge of Pro/ENGINEER to work side-by-side with clients to create better designs and better processes. When they start an engagement, CE Masters often finds that many of its clients are already using Pro/ENGINEER, not only because of its ease-of-use and affordability, but also because of its comprehensive possibilities to realize high-quality assembly designs.

Sander de Regt, Business Leader at CE Masters, explains: "There are several ways you can develop products using 3D CAD. We help clients figure out which method is most efficient in developing their new products. I'll describe [below] two examples of how we can help our customers, not only by developing best-in-class products for them, but also by creating a more efficient product development process."

"Using all the capabilities of PTC products, we develop—or help our customers develop—new and advanced products. And, because of a more efficient design process, they can deliver their products to market faster."

– Sander de Regt, Business Leader,
CE Masters

Optimizing a Ship's Propeller



For Van Voorden, CE Masters developed flexible, intelligent Pro/ENGINEER assemblies for both the ship's propeller and nozzle, which can be easily adapted to customer needs. The associative, related NC CAM data for milling the casts gives Van Voorden a competitive advantage in the manufacturing phase.

One of CE Masters' customers is Van Voorden—a Dutch company that makes ship propellers that are renown in the maritime world for their high efficiency, low noise levels, and excellent material quality. The design and engineering of a ship's propeller aims both for the highest efficiency, which has substantial influence on fuel costs, and for the lowest possible production of sound and vibrations. Each propeller is unique, and requires its own custom design.

Sander de Regt states, "Van Voorden asked us how they could automate the development of the propellers. At CE Masters, we look at the whole process and we find ways to increase the quality of that process."

Working with CE Masters and tools from PTC, Van Voorden developed a unique and highly advanced expert system for the design and analysis of ship propellers. With this system, new designs are achieved through a mix of knowledge from previously made propellers and new assessments. Now, Van Voorden can recommend a specific propulsion system during the early stages of a ship's design.

Product Preparation Reduced from One Week to One Hour

CE Masters built a product configurator that enables Van Voorden to parametrically develop a new propeller using formulas in Pro/ENGINEER. Now, thanks to Pro/ENGINEER, working together with Pro/NC's advanced and associative capabilities, Van Voorden can manufacture sand castings quickly, using automatically generated tool paths. For Van Voorden, this automation has reduced product preparation time—from specifications through manufacturing data—from nearly a week to about an hour. CE Masters was also able to help Van Voorden reduce manufacturing time via an improved process for casting the propeller with better models, and by developing measuring equipment to reduce the grinding time required to shape the propeller blades.

"We always create an intimate, effective and long-term relationship with our customers," comments de Regt. "This relationship with Van Voorden has lasted almost 11 years now. Each time they need more or updated automation, they ask us to help them."

Trailers of Every Shape and Size



CE Masters helped Kraker Trailers design a variety of custom-built trailers from a single, intelligent Pro/ENGINEER model. Repetitive tasks are now automated, giving Kraker designers more time to innovate.

Another CE Masters' customer is Kraker Trailers, a European leader in trailer design and manufacture. Working with Kraker Trailers, CE Masters uncovered that Kraker's engineers were spending an excessive amount of time on repetitive tasks. Since each Kraker trailer is custom-built, the development process was being repeated again and again, specific to each customer's needs.

"With each new trailer order, Kraker's engineers would get the model and make a copy of the model, then try to transform it to the customer's needs," explains de Regt. "Since the engineers at Kraker were occupied with these repetitive tasks, they didn't have any capacity for innovation and new product development."

Consequently, CE Masters worked with Kraker Trailers to develop a product configurator based on Automation GATEWAY. Now, with just one push of a button, Pro/ENGINEER is started, the model is retrieved, and then quickly configured to the customer's needs, which have been recorded on a Microsoft Excel® spreadsheet.

"There are almost 600 different trailer configurations available because each customer wants different tires, a different wheel-set, a different kind of floor, different dimensions," states de Regt. "Now, we can automate this."

Kraker Trailers has used this technology as a competitive advantage by featuring a "design your own trailer" section on their website.

Advanced Capabilities in an Easy-to-Use Environment

The experts at CE Masters use Pro/ENGINEER themselves because of its advanced parametric capabilities and its ability to build rock-solid assemblies by making use of top-down design methods. For these reasons, CE Masters recommends Pro/ENGINEER to its clients.

By creating unique product configurators that capture the various options in their clients' product designs, CE Masters has harnessed their deep expertise in Pro/ENGINEER, and automated the process to simplify repetitive and cumbersome tasks. These configurators are used to create very intelligent Pro/ENGINEER models, which are accessed by generating a link between Microsoft Excel and Pro/ENGINEER.

Sander de Regt concludes, "We have broad experience with all the PTC products, such as Pro/CABLING™, Pro/PIPING™, Pro/MECHANICA®, and almost all the other modules including Mechanism and MDO. It's a beautiful package; it's beautiful software."

Companies like Van Voorden and Kraker Trailers realize that, by working with skilled experts from CE Masters and by designing with PTC CAD tools, they can reduce time-to-market and potentially lower their design and production costs. By implementing a product configurator from CE Masters as part of their design process, they also regain lost engineering time, which they can use to innovate and develop new products.