

Productive

SolidCAM

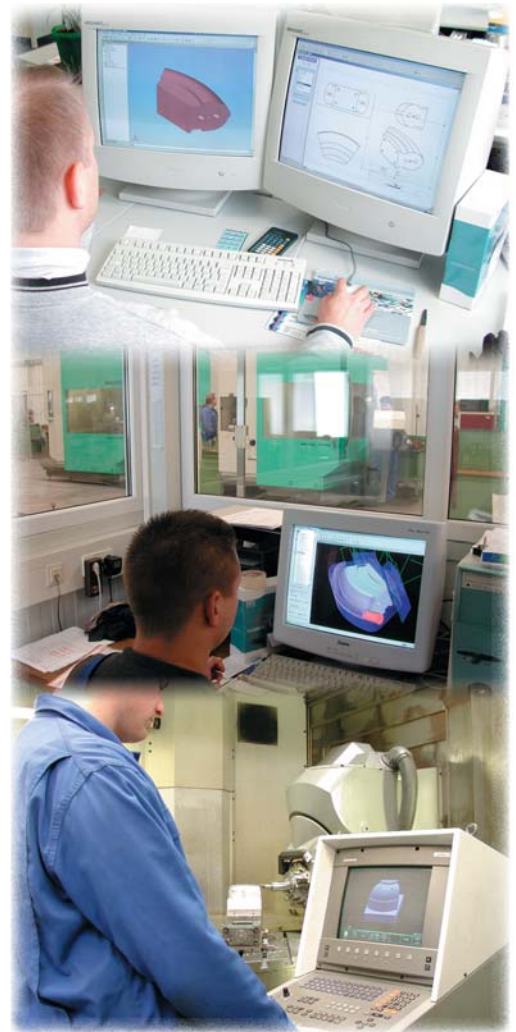
A Dynamic Duo ...

Dreiling Mechanical Engineering accelerates time-to-market with SolidCAM and SolidWorks

Although an efficient 3D CAD system is essential for all companies doing mechanical engineering and contract manufacturing with in-house fabrication, it is still only half of the story. Companies who want to reduce turnaround times, minimize sources of errors and increase flexibility, require a closed process chain with tight data links between CAD and CAM. To date, integrated CAD/CAM systems have been typically expensive and complex to use. Now there is an alternative. With SolidCAM as the integrated CAM-Engine for SolidWorks, SolidWorks users have access to a new SolidWorks Gold Partner solution for CAM, certified since the beginning of 2003. SolidCAM provides efficient and reliable NC programming inside SolidWorks, even with complex 5-axis operations, as can be testified by Dreiling Maschinenbau in Geisleden, Germany.

What is the key to success for a manufacturing company? Although no magic formulas exist, there are a few fundamental principles. A qualified and motivated team is unquestionably vital – nothing functions without it. But how does one find and retain such precious gems? For Engelbert Dreiling, founder and CEO of the mechanical engineering firm in Geisleden, Germany, “among other things, the nuts and bolts include a mod-

ern corporate infrastructure.” The new premises, occupied by the company since August 2000, are equipped with modern machinery and offer a nice 3000 m² expanse for production and assembly, administration and above all, the design department so important for corporate strategy. The guaranteed short routes between design and manufacturing encourage both functional and personal interaction. The proximity of design, manufacturing and assembly in the new plant, however, is not only optimal in a spatial sense. The new Dreiling site in the Geisleden industrial park has also grown together and matured in terms of



In short: SolidWorks and SolidCAM are not only time and cost savers, but also a quality enhancing “dream team” for manufacturing companies, with in-house production. The complete integration of 3D CAD and 3D CAM shortens the path between product idea and the actual production machining. Even the generation of complex CNC-code for 5-axis machining takes place in record time. Thanks to the toolpath verification features, the CNC-programming is almost foolproof. And, when the design model changes, only a few mouse clicks are needed to update and synchronize the CAD and CAM.



Engelbert Dreiling, founder and CEO of Dreiling Maschinenbau firm in Geisleden, Germany: “...a modern infrastructure is the nuts and bolts.”

Engelbert Dreiling GmbH

Since 1982, Engelbert Dreiling has been successfully establishing itself as a flexible and capable full-service provider in the areas of mechanical engineering, plant engineering, fixture manufacturing and tool making. An additional specialty of the ISO-9001 certified company is the assembly, maintenance and repair of machinery and production facilities. About 500 current customers particularly value the company's unique

CAD/CAM proficiency, its manufacturing expertise, its top-equipped pool of CNC machine tools and its modern welding shop. Of Dreiling's current staff of 62, half a dozen qualified designers look after the practical adaptation of challenging product ideas with the help of modern 3D CAD/CAM systems. (www.dreiling-maschinenbau.de)



Easy jobs are for others: to the extensive pool of CNC machinery, several 5-axes machining centers are added. The process chain at Dreiling is complete through the perfect integration of CAD and CAM, as well as production-ready NC programming. This does not only minimize turnaround times but also increases flexibility.

Information Technology. The focus is CAD and CAM, or more precisely, SolidWorks and SolidCAM.

“For a very long time, we’ve been concentrating on the design and assembly of machines, facilities, special machinery, appliances and tools,” says Mr. Dreiling. “We are not just an extended workbench, but a full-service partner”, he adds, explaining that his company “is continually striving to meet the growing customer requirements.” Above and beyond reducing costs and turnaround times, increasing quality and flexibility, the demands from customers range, for example, from simple design tasks to comprehensive product development. Although design has always been a concern at Dreiling, the standards – quantitative as well as qualitative – have been rising at a brisk pace for years. “It became clear to us

four or five years ago that we were not going to get very far in the long-term with the 2D CAD system used at the time,” explains Mr. Dreiling. “Even then, the trend was clearly heading towards 3D. On top of this, more and more customers were making their design data electronically available.” The

problem was that Dreiling had some 500 customers, including well-known companies such as Audi, REGE, INA, Faber Kabel, ContiTech, Bombardier-Rotax, Bosch, Honsberg Lamb, Köster, Mahle, Rautenbach and Felsomat. These clients work with a variety of different CAD systems, therefore a type of



Jörg Rudig, head of the CAM Competence Center at DPS Development and Manufacturing Software Solutions in Wiesbaden, Germany: “...the best cost-performance 3D CAD/CAM solution...”



Markus Gebhardt, manager of mechanical production, Engelbert Dreiling Mechanical Engineering, Geisleden: “... NC programming at the push of a button.”

SolidWorks

SolidWorks Corporation, a Dassault Systèmes S.A. (Nasdaq: DASTY, Euronext Paris: #13065, DSY.PA) company, develops and markets software for mechanical design, analysis, and product data management. Founded in 1993, SolidWorks’ mission is to unleash the power of 3D for everyone in product development and foster a collaborative user community. In seven years of delivering the product, SolidWorks has shipped more than 250,000 total seats of software worldwide. SolidWorks has offices around the globe and sells, distributes, and supports its products through a worldwide reseller network. (www.solidworks.com)

DPS GmbH

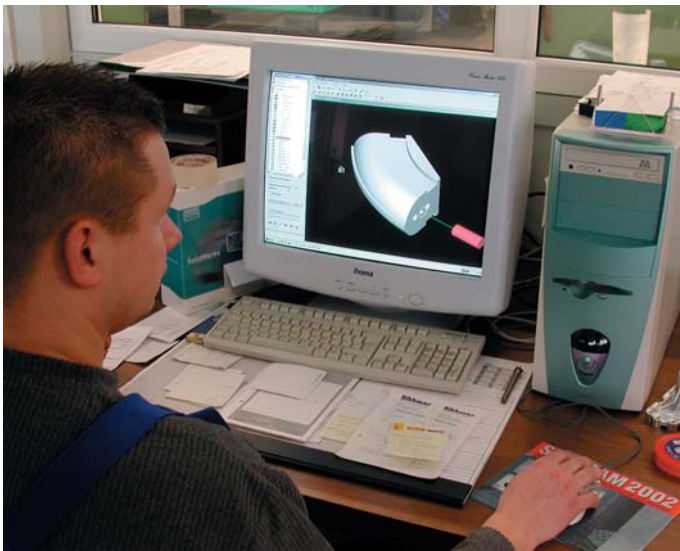
With its headquarters in Stuttgart (Leinfelden-Echterdingen), DPS developed into Germany’s largest authorized SolidWorks dealer in 2002, when sales volume increased by more than 30% and customer count rose to around 850. The root of this success has been the steady concentration on innovative Windows-based state-of-the-art solutions for the product development process in the fields of mechanical engineering, industrial design, mould construction and tool making.

With a staff of 50, DPS has a team at its command that is as qualified as it is proficient, in diverse areas such as goal-oriented consulting, efficient support, intelligent software development or successful training in the areas of CAD, CAM, CAE and PDM/EDM.

DPS locations: Munich * Stuttgart * Wiesbaden * Dortmund * Hamburg * Dresden * Berlin.
(www.dps-software.de)

CAD data powerhouse was required to allow compatibility to the heterogeneous clientele. Another challenge was posed by the application of modern CNC machine tools, which are only as productive and cost-effective as their NC programming permits. In brief: no machining can take place without an NC program. The machining centers employed by Dreiling, with 5-axis operation capability, require NC pro-

grammers with adequate expertise or, preferably, an effective CAM system. “We’ve been using SolidCAM for NC programming since 1999 and we use it for the CNC programming of all our machining centers,” says Markus Gebhardt, manager of mechanical production. “I would not want to be without SolidCAM, particularly for the programming of our 5-axis DMG machines (Deckel-Maho-



The 3D advantage: SolidCAM was developed for the machinist looking for a CAM system that combines ease-of-use with powerful functionality. In addition to the numerous functions and innovative machining strategies for 3D models, SolidCAM enables also the realistic verification of the generated toolpath.

Gildemeister). Once you are familiar with SolidCAM, everything proceeds rapidly. With SolidCAM's toolpath verification we're able to create fairly ideal machining jobs. The advanced post-processors deliver high quality and process-safe CNC-programs."

A definite improvement is that the CNC-department can work directly with the design models created by the CAD staff. In this best-case scenario the design and NC programming use a common product-data model without any data-loss, conversion or data translators.

Granted, integrated CAD/CAM systems have been available for years, but for the most part, they are either design-oriented or tend to be predestined for NC programming, depending on their origins. In addition, most of the time these solutions only function efficiently in the hands of specialists, as both CAD design and the creation of NC programs from CAD data, require specific expertise. Designers who do NC programming or machinists able to do CAD design are scarce. Up until now, there has been a lack of CAD/CAM systems that can do

justice to both "worlds" and those that do make the grade, generally carry a correspondingly high price-tag.

"Costs are obviously also an important issue, as we not only have to pay attention to investment expenditures, but also follow-up costs," explains Mr. Dreiling. With this in mind, in December 2001 some company representatives took their quest to the Euromold trade fair in Frankfurt; the discovery was

SolidWorks. Given its user-friendly operating philosophy, SolidWorks promised a relatively straightforward changeover from 2D to 3D. The formidable number of available CAD interfaces was also convincing. "SolidWorks comes with more than 15 CAD interfaces," says Mr. Dreiling. The in-house 3D system can thus process IGES, STEP, DXF, DWG, STL, Parasolid and SAT, among others, and optionally CATIA data, as well. No less compelling was the fact that at the time of the trade fair, SolidCAM had just announced its new CAM plug-in for SolidWorks.

To sum it up, SolidWorks was able to combine all capabilities envisioned by Dreiling: ample interfaces for data exchange with customers, the seamless integration of CAD and CAM and relatively favorable investment and follow-up costs. In addition, both SolidWorks and SolidCAM perform well on standard Windows PCs. Ultimately, another factor was decisive for the investment in four SolidWorks design workstations and one SolidCAM/SolidWorks workstation for NC programming in production:

SolidCAM

SolidCAM develops CAM systems for mechanical manufacturing. The current product SolidCAM 2003 is the result of more than 18 years of expertise in CAM development. SolidCAM is available as a fully integrated CAM module for the SolidWorks CAD system and is a SolidWorks Certified Gold Product for CAM. SolidCAM GmbH's headquarters, sales and training center are located in Schramberg in the Black Forest. With additional support locations in Mannheim, Stuhr (near Bremen) and Schleusingen, fast and competent support throughout Germany is guaranteed. (www.solidcam.com)

according to Mr. Dreiling, this was "the exceptional consulting and support right from the start, as well as the highly efficient training provided by Wiesbaden-based DPS", now the largest SolidWorks distribution partner in Germany. For Jörg Rudig, head of the CAM Competence Center at DPS, "the team of SolidWorks and SolidCAM is the best 3D CAD/CAM solution currently available in terms of price-to-cost performance. I am extremely confident that we can win



Exceptional work requires exceptional tools: of the now 62-strong Dreiling workforce, half-dozen qualified designers attend to the swift realization of new product ideas with the help of SolidWorks and SolidCAM. Currently, four SolidWorks workstations and one SolidCAM/SolidWorks workstation are installed and two additional integrated CAD/CAM licenses have been ordered.



Comprehensive know-how: some 500 customers value Dreiling as a full-service provider for mechanical engineering, plant engineering, fixture manufacturing and tool making. Furthermore, the ISO-9001 certified company is

devoted to the assembly, maintenance and repair of machinery and production facilities.

over many more companies with the numerous advantages of the combined products as well as our excellent service.”

SolidCAM became a SolidWorks Certified Gold Partner at the beginning of 2003. This cer-

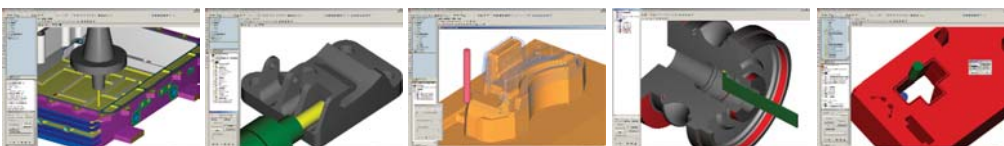
tification is granted to partner solutions that have seamless single window integration in SolidWorks and are fully associative to the SolidWorks model. Dreiling's experience has been so good till now that the company has decided to purchase two

additional SolidCAM/SolidWorks workstations.

Text and pictures: Klaus Dieter Hennecke, engineer and freelance journalist, Olpe

SolidCAM

SolidCAM is the complete, integrated “best-in-class” manufacturing solution for efficient and profitable CNC-programming inside SolidWorks. As a SolidWorks Certified Gold Product for CAM, SolidCAM provides seamless single-window integration and full associativity with the SolidWorks design model, making it the ideal complement for SolidWorks for product development. SolidCAM supports the following technologies: 2.5D milling, 3D milling, Turning (with special support for ISCAR CUTGRIP tools), Turning with Driven tools and 2/4 axes Wire-EDM. SolidCAM creates optimized NC programs for all standard CNC controls.



SolidCAM Ltd.
E-Mail: info@solidcam.com
Internet: www.solidcam.com

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