

# TechUpdate

## Software Evaluates Forming Feasibility

Forming Technologies Inc., Oakville, Ontario, Canada, has released its latest update to Catform R12 CAA V5 Based sheetmetal-formability analysis software. The update delivers enhanced forming simulation with geometrically associative and generative formability results fully embedded within the Catia V5 environment.

Catform provides rapid formability analyses for evaluation and validation of stamped components. It enables engineers and designers to determine whether a design will be suitable for forming by predicting issues such as split-

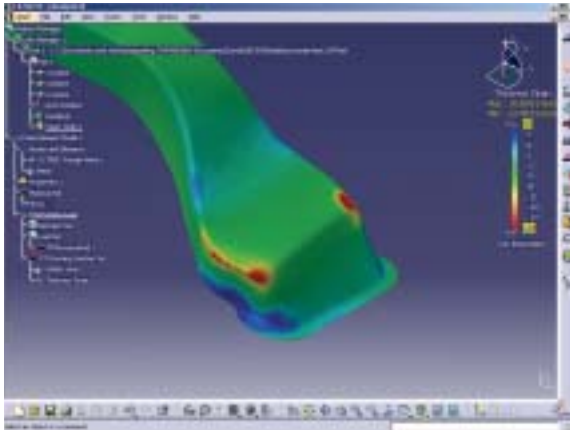
ting, wrinkling, thinning, excess stretch and poor surface strains.

The software also helps determine product cost and piece weight by providing the flat pattern required to man-

ufacture the part. Results are based on component geometry and account for material properties, friction, tip angle and forming conditions. Catform will determine if a component can be stamped consistently with minimum cost while fulfilling all product-performance requirements.

By integrating analysis technology within the Catia V5 interface, analyses require no data translation and are updated automatically after a design change has been made. Since all data are stored in the same Catia V5 database, analysis files are automatically integrated in the Catia PLM environment.

**For more information on software from Forming Technologies, write no. 350 on your reader response card.**



## CAD/CAM Software Speeds Laser Machining of Prototype Parts

Firstek Limited has achieved substantial savings after installing PEPS SolidCut Laser CAD/CAM software to drive its Prima Optimo and Rapido five-axis laser machine tools.

Firstek, manufacturer of prototype automotive components, is based in Basildon, Essex, UK, and currently runs two Prima five-axis laser machines to manufacture components for companies such as Visteon, GKN and Federal Mogul.

Its previous five-axis CAM system was purchased along with its first machine in 1997. The text-based Unix-driven system was not user-friendly, and in 2002 its provider withdrew it from the market, along with product support and updates. Firstek then made the decision to research the market for a replacement system. Says Rob Blackwell, Firstek technical manager, "I'd worked in another company that had used PEPS back in the mid-'80s and remembered then that both the product and support were good, so I had no problem with continuing with them again."

A seat of PEPS SolidCut Laser, from Camtek, Ltd., Malvern, UK, was installed in the Firstek CAD/CAM department.

Blackwell underwent a five-day advanced training course. However, he says he was comfortable using the system after only two days.

Upon installation, the most noticeable improvement was that of speed.

"Programming was at least 50-percent quicker than the previous system, mainly because PEPS is solids-based and can utilize the solid information stored against the part," says Blackwell. "Previously we would pull in an IGES or other format file with an inner/outer surface. We then had to delete all of the inner surfaces on the old software. PEPS takes in the solid model, so we just pick the edge and one click of a mouse generates NC code. A part that might have taken five or six hours to take from drawing to code can now be done in two or three hours, which over the course of a week saves me about a day."

The Prima Optimo can handle larger jobs, which account for some 10 percent of Firstek's business. These jobs require fixtures that previously were impossible to generate manually, requiring alternative part-holding methods. PEPS includes automatic 'egg-box' fixture generation, nesting each plate onto a sheet.

With the company's business progressing more toward low-volume production work as opposed to purely prototyping, the requirement for rapid and reliable throughput of jobs on the five-axis lasers is paramount. Firstek plans to recruit a new machine operator who also will use SolidCut Laser.

**For more information on CAD/CAM software from Camtek Ltd., write no. 351 on your reader response card.**

## CNC Spinforming Yields One-Piece Idler Pulleys

A new metal-spinning machine installed late in 2003 at Gill Industries, Inc., Grand Rapids, MI, has launched the firm straight into the pulley-manufacturing business. Gill specializes in complex mechanical assemblies, supplying, for example, components and assemblies for automotive interiors, seats, and suspension and chassis components.

When it decided, late in 2002, to diversify its customer base, Gill product designers developed a one-piece idler-pul-

ley concept to be manufactured by spinning, competing with the traditional stamp-and-weld or rivet fabrication process. Thanks to its new spinning machine, from German builder WF Maschinenbau und Blechformtechnik GmbH, Gill says it can produce pulleys to tighter dimensional tolerances with increased strength and hardness for pro-



**The Gill one-piece spinformed idler pulley, shown in the tooling after forming.**

longed life, at high production rates.

“We enhanced production speed by as much as 15 percent through integration and customization of the WF machine,” says Gill program director Brad Miller. “The one-piece design, made possible thanks to the spinforming process, has produced pulleys that will last to three times longer than two-piece pulleys, due to the integrated bearing and increased bearing retention.”

Gill forms pulleys, designed primarily for the outdoor power-equipment market (products such as lawn mowers and snow blowers) from blanks of cold-rolled steel in diameters from 2 to 12 in., from 0.118 to 0.145 in. thick. Runout (axial and radial), according to Miller, is less than  $\pm 0.003$  in. per in. of radius, compared to the average runout for a two-piece idler pulley of  $\pm 0.005$  in. per in. of radius. And, the cold-forming process used at Gill yields pulleys with a surface hardness measured at the belt contact surface of 94 to 100 Rb, compared to a typical Rb reading in the low 80s from the typical stamped pulley assembly.

**For more information from Gill Industries, write no. 352 on your reader response card.**

## Quoting Software the Ticket to Growth for Automotive Stamper

Polynorm Automotive North America, a stamper based in Novi, MI, despite challenging economic times has managed to significantly grow its business. Key to its growth has been securing several large OEM contracts, due in part to streamlining its quoting procedures.

The firm produces small- to medium-sized stampings and assemblies for body/engine brackets, reinforcements, roof

bows and heating/cooling panels. Customers include Ford, Visteon, GM and Tier 1 suppliers.

“Effective quoting is a key success factor for our growth plans,” notes Polynorm CFO Don Piper. Polynorm required a quoting process that could not only fit quickly and easily into its business, but also could grow with it. To upgrade its

quoting process, late in 2001 it turned to QStrat Inc., Toronto, Ontario, for its Quotation Lifecycle Management (QLM) software, consisting of NetVQ and VisiQuote. It upgraded to new releases early in 2004.

NetVQ provides a secure browser-based quotation repository accessible across the enterprise and allowing every-

one involved in quoting to make, via the Internet, rapid and informed decisions. Everyone, from sales to finance to engineering, can use it to monitor the quoting process, manage documentation and analyze metrics. VisiQuote, an off-the-shelf quote-preparation program, is designed for automotive-component suppliers. It allows the user to prepare detailed cost estimates with an accurate and consistent understanding of costs and profit margins, and provides control of financial assumptions and cost models.

“The speed of QStrat’s implementation allowed us to ramp up quickly and prepare for the quoting activity on the horizon,” continues Piper. “This allowed us to see a quick return on investment and have a solution that could grow with us.” With Polynorm’s estimators having some 200 requests for quote per year that represent hundreds of quoted stampings and assemblies, it needed a package that could capture all of the information around this critical business process and allow it to reduce RFQ response times and quote more efficiently.

NetVQ provides Polynorm with a collaboration platform for employees to participate in the quotation process. By capturing information in a simple interface, NetVQ allows Polynorm to streamline the quoting process and obtain consistent quote information. “Consistent data allow us to make quick yet informed decisions,” says Piper.

By implementing its strong cost model into the quoting software, Polynorm has taken inconsistencies out of the process to enable continuous improvement. Estimators spend less time on administrative tasks and more time on value-added activities, such as developing cost-saving scenarios.

Benefits of the new QLM releases include enhanced access to detailed cost-estimating data; management and control of enterprise-cost models; and distributed and secure access to historical quote and engineering-change data.

**For more information about quoting software from QStrat, write no. 353 on your reader response card.**