

Profiltechnik Söll moves

Generation of engineering documentation

With a roll scanner from data M, roll forming software and various other design and manufacturing modules, Profiltechnik Söll GmbH in Pausa, Vogtland has created a modern center for fabricating roll formed aluminum profiles and tubes. Supported by this innovative CAD/CAM solution, it was possible to cut the time needed to develop and design the roll tool set and generate the engineering documentation from at least two months to just two days.

Innovative profile technology from Vogtland

With its broad selection of HF welded aluminum tubes, Söll has built up a reputation especially in the automobile industry and among its suppliers. The business in Pausa, taken over by the Söll Group in 2002, fabricates modern and precise, aluminum semi-finishes, primarily thin-walled aluminum tubes, in all sizes from 0.25 to 1.5 mm strip thickness. About 90% of production volume of thin-walled tubing goes into the manufacture of heat exchangers for the automobile industry. Söll's customers consequently range from automakers through to HVAC suppliers. The company's quality philosophy is one of zero defects. This is backed by a sophisticated quality management system extending into every operation and process. Statistical process control is a major element in ensuring high process as well as product quality. And a structured approach to optimizing existing products also assures the customer a high quality standard. It all shows in the company's success – since the takeover the 20-strong team has managed to double turnover each year.

Modern solution from the start

Back at the time of the takeover it was clear to us that it would take modern, efficient and cost-attractive design and manufacturing technologies plus a clear-

ly defined range of products to survive on the market longterm", recalls managing director Thomas Brandt, who is responsible for development and design. After a short benchmarking phase, Söll management opted very fast for roll forming software, the deformation technology module, roll forming design software for open

process chain. The roll forming software enables flexible design and validation of tool sets in roll forming manufacture. Because of its modularity, it was possible to match the system to the company's specific requirements. The COPRA® RF software offers Söll designers efficient support in all stages of creating open and closed

process for the purpose of reducing weight and economizing on material. Or a customer specifies the dimensions, the volume, the defined rigidity and the function for an entirely new profile development. In both cases the CAD/CAM solution installed by Söll covers all steps in the process, from the idea through to the ready profile. Using the COPRA® DTM module, Söll produces a fast draft and optimizes the profile forming. The COPRA® module for tube welding allows simple programming of the sequence. "What is important is the continuity of the process", says designer Brandt. "From the design data we automatically generate the CNC machining code, with the result that we produce fully errorfree CNC programming." Also important is that repetitive profiles can be generated at the push of a button.

Successful use of the COPRA® RollScanner

The COPRA® Roll Scanner is in use at Söll from the very start. This fully automatic measuring unit enables contactless scanning of the roll sets of the tube welding and roll forming plant operated by Söll. "The roll scanner is a simple way for us to register the existing rolls, which is very important for us, because when we took over we found that the technical records of roll set inventory were far from complete", explains Brandt. At the same time the scanner offers continuous and secure quality inspection, and operation of it is very simple. Brandt again: "You set the roll that's to be scanned on the plug and enter the number of the roll or jig. Then the roll is automatically measured. A CCD camera tracks the roll contour and automatically generates an exact geometric image. Depending on the size of the roll, the scanning operation takes about one minute, and then the contour appears on the monitor. Data can be saved in conventional formats like DXF and further processed afterwards by a CAD system."



Thomas Brandt, Managing Director, gets a personal impression of the features available with COPRA® RollScanner.

and closed profiles, the tool database and roll scanner from data M. Summarizes Brandt, "When we saw this complete solution with its flexibility and functionality, we knew we didn't have to look any further."

Flexibility for a closed process chain

In the COPRA® application system Söll has a development, design and manufacturing solution to cover all steps in a closed

profile cross-sections. Says Brandt, "The system forms the basis for a closed process chain, from design of cross-sections through definition of individual bending stations to generation of engineering documentation such as production drawings, parts lists, CNC programs."

The process chain at Söll can start in two possible ways. A customer wishes to fabricate existing profile products with thinner walls through the roll forming pro-

ahead with data M

cut from two months to two days

Extensive benefits

For Söll this total solution for profile roll forming means extensive technical and economical benefits. "Time is money", says Brandt of the enormous time-savings produced by the COPRA® solution.

The continuity of the process chain, the link to CNC programming, the generation of errorfree supplier drawings and the high quality standard achieved through the roll scanner – these are all major success factors.

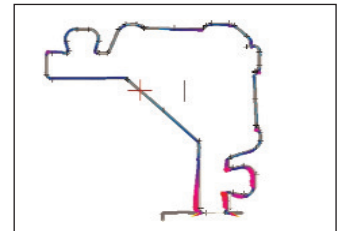
And another aspect: "We can respond very fast to customer requirements, which is naturally a competitive advantage."



Scanning the roll between a CCD camera and a background illumination



Simply put the roll on the plug – either manually, by fork lifter or crane



The measured contour of the profile appears on the screen

Developments – the little brother

New roll scanners COPRA® 100-3 and COPRA® 80-3

These offer the same wide functionality as the 200-3 but are substantially smaller and less expensive:
The little brother COPRA® RollScanner 100-3 (or 80-3) (dimensions: 1 x 0.8 x 1.65 m)
Operation requires no special skills. The devices are able to scan rolls up to 480 mm in diameter (280 mm and 250 mm with the smaller models).



The COPRA® Roll Scanner 100-3 (right) next to the larger 200-3 at the EuroBlech 2006 show in Hannover.

Worldwide #1 – COPRA® FEA RF and COPRA® DTM

COPRA® software technology and the optimization process is complete

The extensive COPRA® design and analysis software is #1 worldwide for the manufacture of longitudinal seam welded tubes or roll formed profiles.

data M Software is the first software or engineering enterprise to produce matured simulation software for this purpose. With COPRA® DTM (deformation technology module) and COPRA® FEA RF (finite element analysis for roll forming) you can optimize your designs and roll tools in the development phase, setting whole new quality standards in manufacture.

Design and analysis

Design and analysis to order – data M Engineering competence center

Our team of engineers is constantly working to implement and analyse tool sets under contract to customers. Call on us for support and competence in design and quality optimization of your roll tool sets – from initial tool design through finite element simulation to measurement of rolls with the COPRA® RollScanner.