

# Productive



**SolidCAM**  
The Leaders in Integrated CAM

## SUBCONTRACTOR AND PROBLEM SOLVER



Summira accelerates the manufacturing technologies of milling, turning and wire cutting with SolidWorks+SolidCAM integrated solution.

*Designing, producing, assembling:  
Summira realizes product ideas with six SolidWorks+SolidCAM workstations and CNC machines for jet cutting,...*

Summira GmbH in Bornheim-Sechtem has a wide range of production equipment - with machine capacities for CNC spark erosion, CNC machining and CNC jet cutting. The company has 28 employees, and has not only established itself as a versatile subcontractor, but has especially evolved into a development partner and problem solver. Since 1991, one supporting pillar in the company foundation has been the CAD/CAM solutions from SolidCAM. Currently, six employees with their integrated 3D SolidWorks+SolidCAM workstations turn the design ideas of their customers as well as their provided CAD data quickly into high-quality products, at competitive prices on the world market.



*...3- to 5-axis milling, turning, turn-mill, countersinking and wire cutting...*

Everything flows, doesn't it: nothing is more constant than change. That is especially true for the production industry which is driven by global competition, technological progress and many other external influences on the company fortune. Success comes to those who can adapt quickly enough to the ever changing circumstances and can also change, if they need to, to something completely new. Like Summira in Bornheim-Sechtem. From 1957 to 1969, the company name stood for mechanical adding machines "Made in Germany". With the worldwide triumphant success of electronic calculators, the demand for the mechanical ones quickly died out. The reason Summira still exists today is because they didn't wallow long in the defeat of their former internationally successful product, but tried to figure out to what extent the existing production capacities and employee know-how in their own sheet metal and plastic part production could be used as a basis for a new business as a subcontractor.

Willi Lenzen, Managing Director of Summira GmbH, Bornheim-Sechtem: "In principle, already back then we had the entire manufacturing process chain under

control. We were in charge, from our own design, to the prototype, tool and mold construction, cutting, sheet machining and plastic processing, all the way to assembly, including extensive quality assurance."

*...on request in completely assembled and tested end products, such as this "cameraless" device for measuring sawblades using a BV system.*

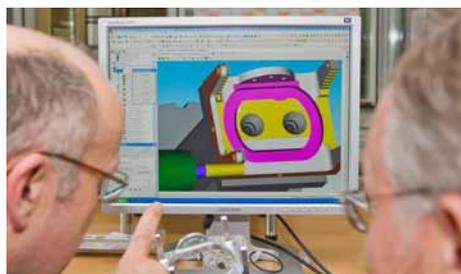


The metamorphosis from being a manufacturer of one's own products to a development, production and assembly partner for many, was a success. Today, Summira with its 28 employees (11 of them trainees) is a subcontractor of series parts with a quick reaction time, a development and supply partner for prototypes and tools, all the way to being fully responsible for fully assembled precision apparatus and machines. An important ingredient in the recipe for success is "the early introduction of CNC machines", according to Willi Lenzen. "We got our first OKUMA

LSN-2000 in 1978." And in 1988, the first big investment in CAD and CAM followed. "Back then, we invested a six-figure sum in a system from Cambridge Systems and "floundered horribly," recalls Summira's managing director Eberhard Müller. Still, we continued on. After a brief episode with the former NC programming system from the company DLoG, Lenzen discovered the SolidCAM predecessor system CADtool/NCtool in 1991 for himself and his company. "That was just a 2.5D system, but ran on commercially available PCs, and moreover could be used for milling, turning and wire cutting and, as an extra plus, had an open post-processor. We practically grew with the system."

The developer SolidCAM is now the fastest growing CAM system provider in the world for the fifth year in a row (according to the research institute CIMData). Two major reasons for its success: First, SolidCAM has consistently focused on the development of CAM systems since its founding in 1984. The functional scope, capacity and usability have been geared toward practical needs since the first version. Second, SolidCAM was already certified in 2003 with the "Gold Status" by SolidWorks. This means: SolidCAM software offers seamless, single-window integration and complete associativity with the SolidWorks design.

Dr. Emil Somekh, SolidCAM's Founder and Managing Director: "SolidCAM is a very powerful and easy-to-use NC programming solution for 2.5D milling, 3D milling, High Speed machining, 3+2-axis multi-side machining, 5-axis simultaneous machining, machining processes, automatic feature recognition and machining, turning, mill-turn and wire cutting. Thanks to its full integration in SolidWorks, users can cover the complete manufacturing process chain.



*Importing, generating the NC program, simulating: SolidWorks can import all major 3D- and 2D CAD formats, such as Parasolid, ACIS, STEP, VDA-FS, IGES, DXF and DWG, as well as CAD files from mainstream CAD systems, such as Inventor or SolidEdge or from high-end CAD systems, such as Pro/E, Unigraphics, and optionally even CATIA...*

They can also import data from other CAD systems on the market."

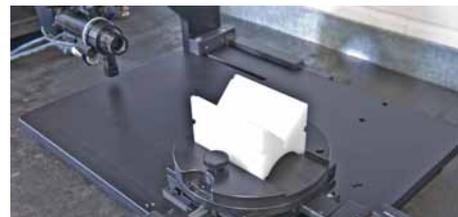
SolidWorks imports all major 3D and 2D CAD formats, including Parasolid, ACIS, STEP, VDA-FS, IGES, as well as DXF and DWG. Furthermore, SolidWorks easily reads CAD files which were created with other mainstream CAD systems, such as Inventor or SolidEdge, or which come from high-end systems, such as Pro/E or Unigraphics. Furthermore, CAD data can be imported from CATIA V4 and CATIA V5 format, via third-party applications. The full integration of SolidWorks and SolidCAM enables therefore the direct NC programming of imported external CAD data.

Users can create all necessary NC machining operations,, calculate them and simulate them without leaving the CAD environment of SolidWorks. All 2D and 3D geometries which are used for NC machining are completely associative to the SolidWorks model. In a single CAM part, several SolidWorks configurations can be used, whereby each of them can represent a different production step of the workpiece. If changes are made to NC-relevant features in the SolidWorks model, SolidCAM makes it possible to automatically synchronize all tool paths. The associativity to the SolidWorks model can avoid errors and makes it easier to update already produced parts.

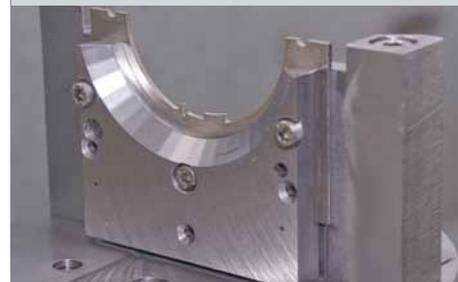
3D machining with SolidCAM is excellently suited for prismatic bodies and also for very complex 3D models. SolidCAM automatically detects pockets, profiles and flat areas on prismatic workpieces, which are then machined with constant-Z strategies. SolidCAM offers High Speed Cutting strategies, including the machining of rest material, for manufacturing complex forms, electrodes and prototypes with free-



*...within the SolidWorks working environment, SolidCAM generates and simulates optimized and tested NC programs based on SolidWorks model data, which can always be perfectly adapted to modern or even older target CNC controllers using open post-processors.*



*Lenzen produces and assembles mechanical precision parts and components for magnifying glasses and microscopes; CCD inspection systems, length measuring and positioning systems...*



*...Tools for manufacturing plastic rings and other special seals for pneumatics, hydraulics, automobile technology, as well as an extensive range of special tools for pipeline, plant and tank construction.*



form surfaces. The HSM module, can be used to mill complex 3D geometries and surfaces quickly and precisely, even with older NC machines.

SolidCAM offers versatile approach and roughing strategies and excellent 3D finishing machining. For SolidWorks models with features, such as pockets, profiles and holes, tool paths can be generated quickly and interactively for production on CNC machining centres. Powerful algorithms and the complete control over all machining parameters at all times ensure process-optimized NC programs.

NC jobs, once defined, can be easily moved, rotated, mirrored, or their order can be changed. As mentioned before, SolidCAM also covers multi-sided machining on 4- and 5-axis CNC machining centres. Users can create 2.5D and 3D machining programs on any level. SolidCAM rotates the CAD model to the respective working level and automatically calculates all necessary axis rotations and 3D zero-point offsets.



*Willi Lenzen: Managing Director of Summira GmbH, Bornheim-Sechtem: "On the one hand, SolidCAM offers us many time-saving automatic functions for creating NC programs and simulation..."*

All machining operations can be reliably checked with the powerful simulation before SolidCAM generates a complete 4- and 5-axis NC program with a push of a button.

Further highlights include the Automatic Feature Recognition and Machining (AFRM) and the option of creating machine processes. AFRM accelerates the production of parts with a large number of holes and pockets. All hole features on the SolidWorks model are recognized. Based on machine processes, which are stored in a knowledge-based technology database, SolidCAM can generate the corresponding tool paths fully automatically on request. Thanks to the machine processes, NC programming is automated, expert knowledge conserved and the sharing of production know-how among the employees is optimized long-term.

In addition to the high automation potential, the machine processes still provide optimal control over all machining parameters at all times. All NC jobs and machining sequences can be stored in an internal database and the machining parameters are controlled via user input. SolidCAM machine processes offer high automation potential in NC programming, without losing control over NC machining.

Gerhard Lägeler, the COO and sales manager of SolidCAM GmbH, Schramberg, made the following comment during a site meeting: In order to be able to make quick use of the performance potential of our software, we recommend every prospective CAM specialist to get SolidCAM training. "The structured introduction to SolidWorks and SolidCAM provides plenty of tips with which one can save a lot of time in practice. The time invested in training has quick, sustainable returns."



*Gerhard Lägeler, Managing Director of SolidCAM GmbH, Schramberg: "...all sorts of tips with which one can save a lot of time in practice."*

Willi Lenzen: "On one hand, SolidCAM offers us many time-saving automatic functions for creating NC programs and simulation. On the other hand, the program doesn't intimidate us. At Summira, a 58-year-old cutting expert with no CAD/CAM experience but with a lot of curiosity and enthusiasm was able to be successfully retrained .

Meanwhile, six Summira employees, with their integrated 3D SolidWorks+SolidCAM workstations, see to it that the existing CNC turning machines (OKUMA LB35, LR15-M with driven tools as well as LC 10), milling and drilling centres (and here especially the 5-axis DMG 70 Evolution machining centre purchased in 2006), as well as the existing wire cutting machines, are supplied with tested NC programs during 2 shifts.

## About Summira

Summira GmbH, founded in 1957, with its 28 employees (11 of these trainees!) is a quickly reacting development and production partner for prototypes, series parts, to the assembly of complete apparatus and machines. Their special strengths include: Precision mechanical parts and components for magnifying glasses and microscopes; CCD inspection systems, length measuring and positioning systems; Tools for manufacturing plastic rings and other special seals for pneumatics, hydraulics, automobile technology, as well as special tools for pipeline, plant and tank construction. In addition to the production methods of countersinking, start-bore and wire cutting, milling, turning, including driven tools, conventional milling, turning and drilling and thread-cutting, Summira has won new circles of customers with modern jet cutting machines. With them, all sorts of materials up to a thickness of 220 mm can be cut nearly burr-free in almost any contour. As a universal CAD data interface to the customer and as a powerful 3D CAD/CAM platform for internal design as well as seamlessly integrated NC programming, Summira has six SolidWorks+SolidCAM workstations in use.

Lenzen: "SolidCAM is functionally very practical and the NC programming procedure is structured very logically. The standardized interface for the technologies of milling, turning and wire cutting is extremely valuable to us, as well as the customized support for all our CNC controller and machine generations."



*From 1957 to 1969, Summira stood for mechanical adding machines "Made in Germany". With the triumphant success of electronic calculators, the demand for this calculating aids dropped sharply. The existing production capacities and the employee know-how in their own sheet-metal and plastic part production was the basis for a new existence as a successful subcontractor and problem solver.*

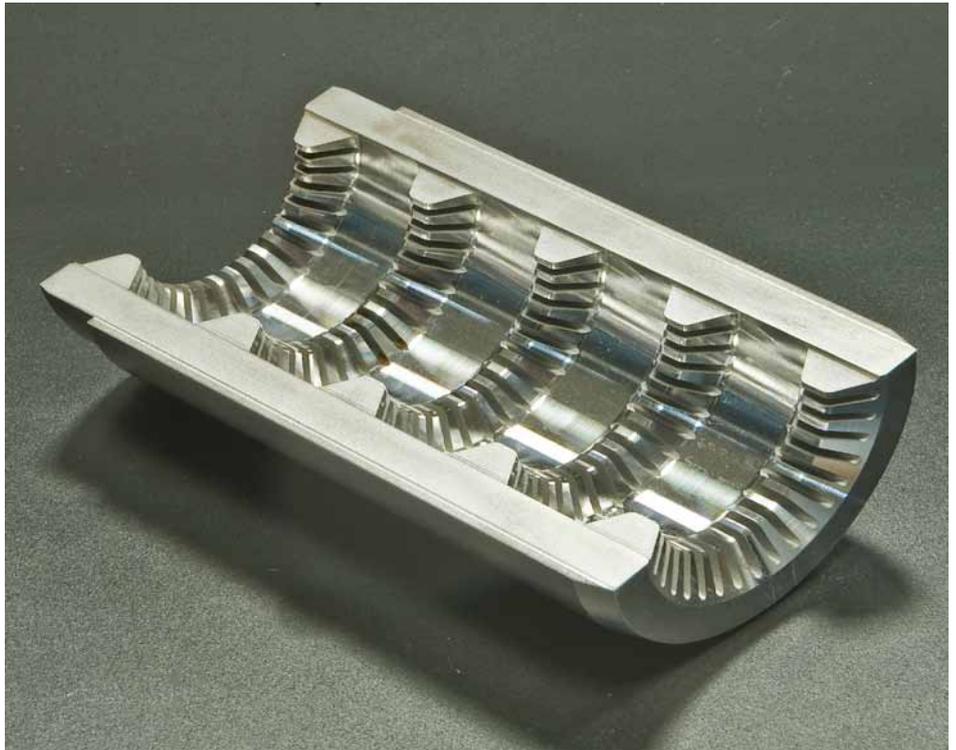
*Summira cuts all sorts of materials up to a thickness of 220 mm with modern jet-cutting machines without burrs in nearly any contour with a precision of a few tenths of a millimetre. Raw parts, too, such as this mounting plate for the additional mechanical machining on the 5-axis DMG evolution*



## SolidCAM

Founded in 1984 by its managing director Dr. Emil Somekh, SolidCAM provides a complete CAM production solution for 2.5D milling, 3D milling, high-speed machining, indexial 4/5-axis multi-side machining, simultaneous 5-axis milling, turning, turn-mill and wire-cut EDM. SolidCAM has the certified Gold Status from SolidWorks. SolidCAM offers seamless, single-window integration and complete associativity with the SolidWorks design. Currently, SolidCAM is being used on over 14,000 workstations worldwide. Sales and support are provided by a worldwide network of resellers in 46 countries. SolidCAM is being successfully used in mechanical production, electronics, the automobile and aerospace industries, in medical engineering, tool and mold making and also in rapid prototyping. Since the implementation of the integration strategy in SolidWorks, SolidCAM has been on a very rapid growth rate. The latest information can be found on

[www.solidcam.com](http://www.solidcam.com)



*Milling, wire cutting, turning: SUMMIRA also uses SolidWorks+SolidCAM for NC programming of 2+2-axis wire cutting machine as well as the existing CNC turning machines OKUMA LB35 and OKUMA LR15-M with driven tools, as well as OKUMA LC 10.*

