



Production of a special tool on a 5-axis-processing centre.

Tool Specialist ISCAR Shortens Development Times

By Heike Blödorn

By deploying CATIA V5 and the NC-Module, ISCAR has drastically reduced the number of defects, avoided the production of test pieces and accelerated their entire end to end process.

Over the past 50 years, the Israeli company ISCAR has transformed itself from an unknown newcomer into an internationally recognized producer of cutting tools. Whereas the head office in Israel deals with the development of standard tools,

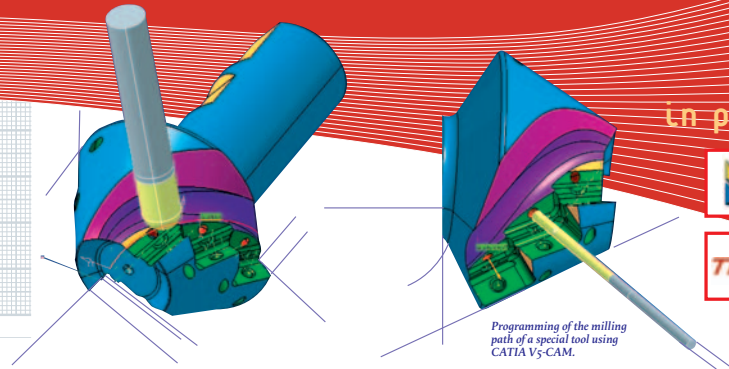
the German ISCAR subsidiary focuses on special tools. With optimally customized tools, the company provides the ideal tool system for every process. Their product portfolio thus encompasses the entire range of turning, drilling, milling and finishing tools as well as metal-working facilities for mechanical engineering, automotive and aerospace industries and their suppliers.

Today ISCAR is one of the most innovative firms on the market and is the number two company in the world in its field. Working from their main offices the same CAD-software release is made available worldwide, so that designers everywhere may learn from each other. In effect, engineers have worked with CATIA for 13 years at different sites. The supplier and consultant for PLM Solutions

in Germany is the Karlsruhe-based Transcat PLM GmbH & Co. KG.

Four years ago ISCAR switched from CATIA V4 to the V5 Solutions. The reasons for this are 3D-design, free-form surface design, as well as the design speed and the reduction of secondary activities. Since mid 2005 the company has also been using the NC-Module of CATIA V5 and a 5 axis simultaneous post-processor developed by Transcat. The objective is to reduce the rate of error, to avoid the need to run tests and finally, to speed up their end to end process. The CATIA NC-module covers all the work phases from roughing to finishing.

CAD-work station with CATIA V5.



Programming of the milling path of a special tool using CATIA V5-CAM.

In practice



ACCESS TO STANDARD DATA

Industry requirements for the development of special tools are constantly increasing. The greatest bottleneck is the increasingly shrinking cycle time. The headquarters in Israel provides subsidiaries with an electronic catalogue, which contains approximately 25,000 standard articles with a technical description of each. If the designers in Germany develop a new tool, they look on the world wide product data management system for the corresponding information in

order to design a new tool based on available data. When the 3D-model is finished, the designer hands it over with all the relevant information to the production department. They plan the tool with the cutting parameters required for processing the component •)

Further information may be obtained from the following address:
www.iscar.de



Kurt Brenner, Production & Engineering Manager at ISCAR in Ettlingen comments: "Depending on the kind of tool, we have cut work time by 25 to 40%."

It was therefore possible to eliminate the manual drawing of production drawings. While before it was necessary to sketch out every toolpath, so that the machine operator could enter this information manually, mistakes could occur in both the design, in dimensioning as well as in machine programming. The manufacturing specialists were able to drastically reduce the number of errors with the new process.

Downtime is a thing of the past
Today production uses CATIA and the CATIA NC-modules. If, in the past, people discovered false input data, which came, for example, from the programming of drawing data, the machine remained inactive, until the machine operator clarified the problem with the designer. Such downtime is now a thing of the past at ISCAR. Before a part is machined today, the machine operator creates a simulation on the computer with all the relevant tools, in order to identify possible errors. And only when everything is O.K. does he transfer the data via the

post processor to the machine. By using Computer Aided Manufacturing tools, the programming time of a special tool, in comparison to manual programming, can be reduced by 40%.

Due to greater precision, ISCAR was able to reduce the production of test pieces to zero. For the smallest series of two to five parts this creates considerable savings in terms of time and cost.

Shortening of through times
For ISCAR with its 52 subsidiaries around the world, it is a major advantage to have CATIA and the service that comes with it available everywhere. It is only in this way that the company can harness the synergy of the various development sites in different countries. If in one country a solution for a particular industry or task is developed, the design manager informs his colleagues and transfers the information with the appropriate CAD-data to the product data management system. With this approach, each designer throughout the world has access to the experiences of his colleagues and therefore works more efficiently.