

Enhancing Design with the Right Investment Tool

It was the die and mold industry that dictated a significant part of the elaborate design and manufacturing algorithms for CAD/CAM software. Now, efficiency apart, the kind of jobs that the die and mold does itself calls for elaborate measures to achieve something that is not otherwise possible by traditional methods. Hence, for manufacturers to continually cater to increasing demands, it has now become a 'necessity' rather than a choice to invest in a CAD/CAM tool.

Sridevi Tool Engineers Pvt Ltd, situated in Mumbai, are market leaders and pioneers in mold making in segments like automobiles, white goods and other engineering products. In fact, in 1986 the company was the first commercial tool room in India to adopt CNC machining. Today, the group has a world class advanced in-house tool room facility and is constantly on the quest to upgrade to the latest technology available. Looking to improve their productivity and quality in manufacturing, the company approached Delcam. Elaborating on the same, Managing Director, Sridevi Tool Engineers Pvt Ltd and President,

Tool and Gauge Manufacturers Association – India, S C Kalyanpur said, "We approached Delcam to provide us with solutions to reduce our time to market. To this, they suggested using their electrode modeling and PowerMILL CAM." Currently the company has installed Delcam's software in 4-5 of its machines. One of the key areas where they faced difficulties was in electrode machining. "Having worked with two other CAD/CAM vendors in the past, we were unable to derive the maximum benefit of the relation – both technically as well as commercially. Support being one of the key criterion, the features available in PowerMILL and PowerSHAPE electrode played a key role in our decision to invest in Delcam products," added Kalyanpur.

Proficiency in toolpath editing

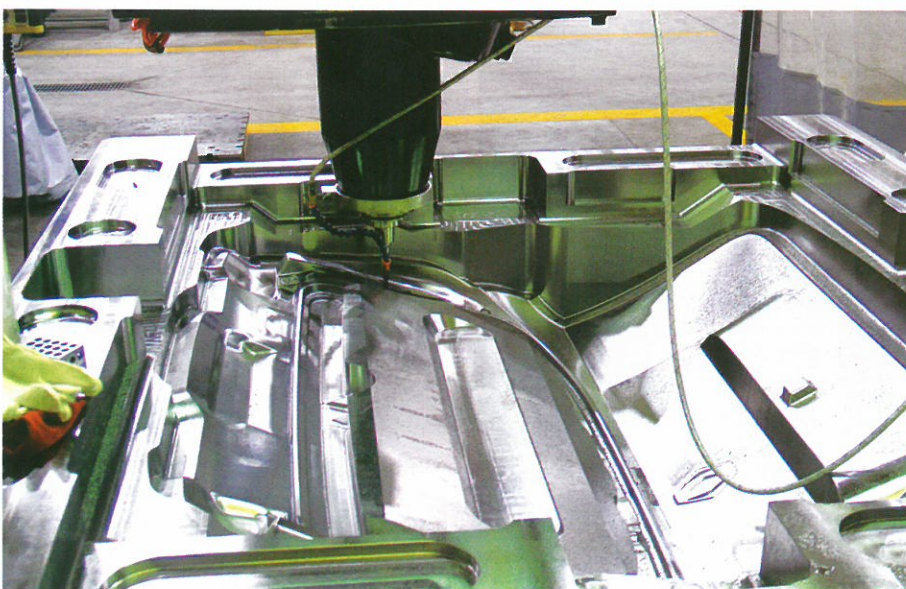
Delcam's PowerMILL in particular has an

advanced toolpath editing feature which really helps customers to produce right. From exercising precise control on how the tool enters into the material and exits out, numerous leads and links option help the programmer to edit the toolpath to the desired requirement. "Also, when it comes to the removal of selected segments or sketched region from a toolpath, PowerMILL also quickly updates the amended toolpath links automatically, ensuring that the toolpath is gouge free. The programmer also has an option to "Re-order" toolpath based on selected individual line segments in the toolpath," informed Kalyanpur. In addition to this, a single toolpath can be transformed – i.e., translated, rotated or mirrored at the click of a button. "What's more, the toolpath cut direction is maintained in the mirrored toolpath automatically," exclaimed Seth.

Delivering and customizing right

When it comes to customizing software there are various modules, besides the many features that need to be taken into account. Explaining the same via an example, Managing Director - India & Middle East, Delcam Plc, Vineet Seth asserted, "For example, in the first step, we basically identify the kind of work that our customers do on a regular basis and that is classified as a 'must-have.'" This forms the core requirement, while any work that is not done on a regular basis is classified as a 'could-have', for them. All others will fall in the 'good-to-have' category. "Once this classification is done, we then pitch the software modules that cover at least the 'must-have' features – while recommending the customer additional modules (which can also be added at any point in the future) that will help them get

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Large tool milled using PowerMILL 5 Axis

Source: Delcam Plc



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Managing Director, Sridevi Tool Engineers Pvt Ltd and President, Tool and Gauge Manufacturers Association – India, S C Kalyanpur

an extra edge. Following this, there are numerous minor customizations that are very important on an operational basis; BOM in plastic injection mold design, electrode planning sheets, standard library components in CAD which are used on a daily basis, repetitive design & toolpath generation process by Macro automation and finally the customization of the post-processors for various CNC machines," explained Seth.

Likewise, the solution supplied to Sridevi Tools offered them a simple yet powerful wizard based sequence to extract electrodes from the dies and molds much faster than they had ever done and quickly transfer these to the PowerMILL module via an integrated solution. "PowerMILL's ability to quickly recognize hole features from the

input model and the in-built high speed machining strategies, together helped the company's designers and programmers to quickly generate electrodes and machine them effectively. This has resulted in substantial savings in time and money for the company," averred Seth.

Reverse engineering

Reverse engineering is a key segment in the die and mold industry and is ever changing with the needs of the market. Delcam, are the promoters of the 'Re-engineering' concept in addition to traditional reverse engineering, wherein most of the features of the model are built in during the process of surfacing from the triangle model. "Patented features like 'morphing', helps designers to conform certain regions in the reverse engineered model to the original scan data. Our CAD software, PowerSHAPE reads in a variety of offline point cloud data in order to mesh it for reverse engineering. All this is done keeping the lead times very low," affirmed Seth.

Sridevi uses Delcam's PowerSHAPE with electrode designing solution and are very happy with the tool. According to Kalyanpur, one of the benefits of using the software is that they have seen savings of at least 5-8 per cent in their finishing strategy. "Delcam supports the direct plugin of laser based and point capturing devices to plugin into PowerSHAPE and starts capturing points on the fly. It also quickly triangulates these points and has tools to generate surfaces on the selected triangle data – quickly," informed Kalyanpur.

Enhanced user interface

"The biggest benefit of using Delcam's



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software apart from it being cost effective is that it's very user friendly making it easy for our engineers to adapt to the software," quipped Kalyanpur. The company, having always sported a simple and clean interface is continually enhancing their GUI based on feedback from both customers, as well as all of their offices worldwide. "Most of our processes are wizard-based, which means that a particular process is explained briefly with words and pictures, while each block in the process is iterated in a step-by-step procedure. Our testing department checks various graphic cards for their quality and speed, and this is updated on our website, so that our customers can see the benchmarking for themselves and plan their purchases well in advance. We have also arranged the icons in our software sequentially, so that there is a natural 'flow' that is intuitive. The colors used in some of our software modules are also checked for proper visibility - for people who are color blind," said Seth.

Utilizing the software completely

Talking on their expectations from the users, Seth asserted, "As CAD/CAM/CAI developers, we expect the customer to utilize the software to its full potential. This will give them the confidence that the software will deliver and give us the drive to further enhance the capabilities of the software." Quite satisfied with the software, Kalyanpur would definitely recommend it for use to others. "With Delcam's software there are more options compared to any other. We would definitely recommend small tool rooms to use the company's software in order to increase their productivity and efficiency," concludes Kalyanpur.

MMI



Mold being manufactured at Sridevi, using CAD/CAM integration, which ensures an error-free and highly accurate process