SIEMENS

Multi-industry

Rasandik Engineering

Indian manufacturer speeds production of sheet metal parts

Product
NX

Business challenges
Speed turnaround of sheet metal parts to meet automakers' demands

Improve efficiency in design and manufacturing to boost bottom line

Keys to success
Perform die design entirely in 3D

Optimize toolpath programming and capture process in software for department-wide standardization

Results
Reduction in design time up to 50 percent

Lower die costs

Less rework

CNC programming time cut in half

Machining time faster by 30 percent

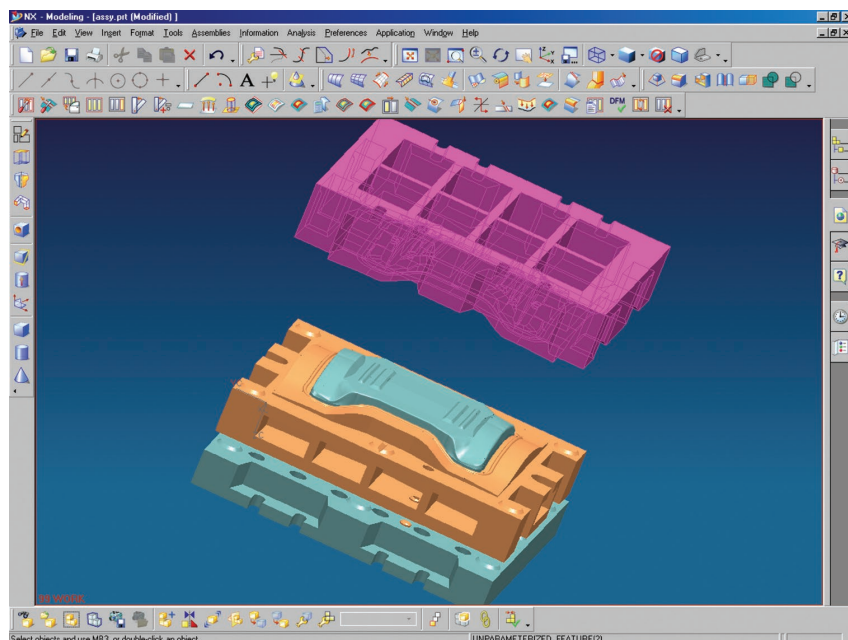### 3D die design and optimized toolpath programming result in big time savings for Rasandik Engineering

Rasandik Engineering wanted faster turnaround for its automotive customers and greater cost efficiencies for itself.
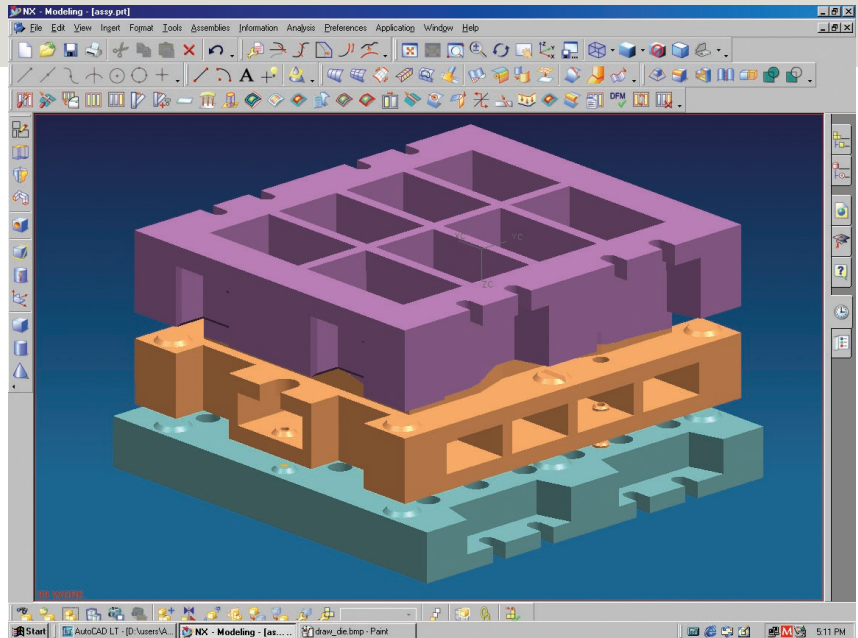
Serving India's auto industry
Rasandik Engineering Industries India Ltd. is a modern, state-of-the-art design and manufacturing company that produces sheet metal components and assemblies for automobile manufacturers in India.

Some of its products include fuel tanks, mufflers and body parts.

The dies used to manufacture sheet metal products are complex assemblies. In the past, Rasandik Engineering used the conventional approach to die design (some 2D and some 3D), a process that always required multiple iterations. For a class A die, the process normally took between 20 to 25 days. With especially complicated dies, there was also the chance of error due to the difficultly of visualizing the assembly. Many times, for example, interfering parts could not be seen until a

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physical model was made, resulting in rework and schedule delays. This was also a cost issue because the modifications were very laborious and time-consuming.

Faster, more cost-effective die design

In an attempt to speed the die design process and make it more cost-effective, Rasandik Engineering implemented NX™ software as its solution for die design. The software had a short learning curve and before long engineers were performing die design exclusively in 3D. In the new, NX-based process, they begin by laying out the die (also in 3D) and then modeling the die face. After that they create die struc-tures such as draw dies, trimming dies and standard parts. Next, they model the sur-faces that will be machined. The last step

is extracting drawings from the 3D die assembly model. The drawings are used for patterns and assembly instructions.

One of the benefits of using NX for die design is that Rasandik Engineering can now develop very complicated dies in an associative mode, so that if there are any changes to the design of the product, the entire die assembly can be easily updated. This contributes to the overall 50 percent reduction in die design time that the com-pany has experienced since implementing NX. Another significant time saver is greater accuracy in the digital model, due to the better visualization afforded by 3D. This has reduced rework and helped lower die design costs. Rasandik Engineering has also found that the productivity of

"With NX we are reducing our programming time by more than 50 percent."

Rajiv Kapoor
Managing Director
Rasandik Engineering Industries India Ltd.

its experienced engineers has gone up with NX because the detailing process has been taken over by less experienced personnel – another factor that's helping drive down costs.

Cleaner tool paths; reduced machining and CNC programming time

In addition to being a better solution for die design, NX is now Rasandik Engineering's CAM solution as well. With the previous CAM system, toolpaths were not clean and lot of work was done at the CNC operator level. NX has been a significant improvement over the old system in that regard and in several other ways as well. Not only are toolpaths cleaner, operations in NX such as "Flow Cut" (for both single and multiple cuts) are of great help in manufacturing castings because it reduces the risk of finding excess material

at the radius during machining. This has helped reduce machining time by 30 percent.

The other big benefit of NX in the CAM arena is a more than 50 percent reduction in CNC programming time. Part of this was accomplished by optimizing the machining process and capturing it within NX. Use of the NX machining data library was included in the optimized process, which has now been standardized and is followed by the entire CNC programming department.

For Rasandik Engineering, NX digital design, with its support for knowledge capture and re-use, has been the ideal solution for CAD and CAM. NX delivered the efficiency gains the company wanted and it helps boost profitability in these highly competitive times.

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