NSK RHP Gets Its Bearings Faster With I-DEAS™

SITUATION

NSK RHP Bearings, one of the world's foremost bearing manufacturers, is a leading producer of high quality automotive and precision components and an authority in motion and control technology. Its European Technology Centre, based in the United Kingdom, is charged with developing products that achieve the optimum balance between bearing life and cost. To meet this objective, the company felt it needed to replace its existing 2D CAD tool (Diad) with an integrated CAD/CAM/CAE solution that would not only help improve 2D productivity but offer solid modeling and analysis capabilities as well. It would also provide a mechanism for communicating with other NSK RHP facilities around the world.

OBJECTIVES

Implement an integrated CAD/CAM/CAE system that would help the team:

✔ Improve 2D productivity to reduce the cost of general commodity items such as bearings for consumer goods, which make up 80% of production.

✔ Use 3D and analysis for the 20% of products that have complex shapes.

PROCESS VISION

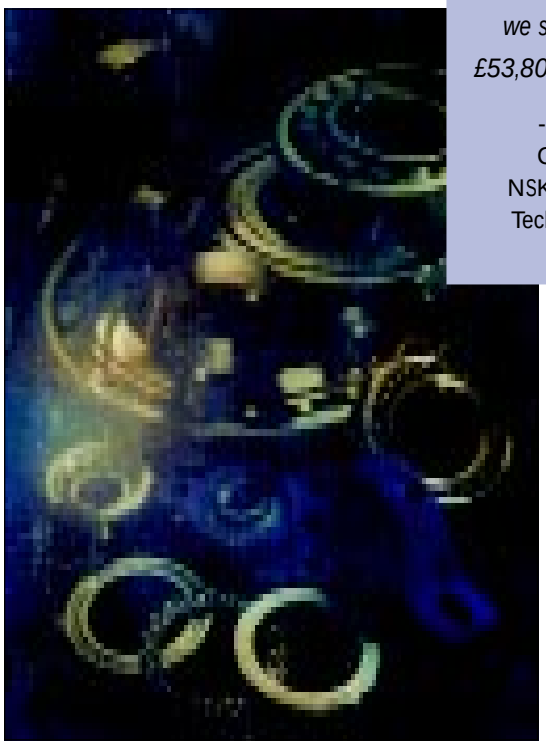
✔ Improve the speed and accuracy of the entire product development process through the use of an integrated CAD/CAM/CAE solution that simplifies the creation of drawings and allows product geometry to be shared by downstream applications, particularly analysis and manufacturing.

ACTIONS

✔ The NSK RHP designers benchmarked four systems. They chose I-DEAS™ software because its intuitive user interface and integrated design and analysis capabilities offered the ease-of-use and improved functionality they required. In addition, they valued the expertise and support that SDRC could offer in a long-term cooperative relationship.

✔ The NSK RHP designers now use I-DEAS Master Series™ software to create all 2D drawings. Any particularly complex parts are modeled in 3D and tested for fit and tolerance.

✔ Finite element analysis is applied on the 3D parts to verify them for strength; study fatigue life; and test flexibility and deflection.



"We chose I-DEAS™ for its ease-of-use and because the software provides a seamless transition from 2D to 3D solid modeling, as well as to finite element analysis. Our choice paid off because, in the first year, we saved more than £53,800 ($90,000 U.S.)."

- Rob Kebbell
CAE Manager
NSK RHP European
Technology Centre

I-deas™

Get
There
Faster™

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✔The I-DEAS geometry for the bearings is passed directly to the toolmakers who use it to make prototypes. The evaluation of these prototypes guides design modification.

✔ After the prototypes are evaluated, the designers make the required modifications and perform further analysis in I-DEAS. The final CAD drawings are then passed to the manufacturing department, which uses I-DEAS to produce stage, tooling, and inspection drawings and shop floor documentation.

RESULTS

✔ For the first ten months after I-DEAS was installed, the drawing office staff kept track of the hours and costs associated with each drawing. They found that with the easy-to-use, intuitive interface of I-DEAS, they were able to reduce the time it took to produce drawings by 50% compared to their previous system.

✔ Even though NSK had automated many of the keystroke sequences required by its previous system, I-DEAS was still so much easier to use that a saving of 34% was made on the average cost of a drawing. NSK RHP estimates that it saved £53,800 ($90,000 US) in the first year.

✔The addition of integrated design and analysis capabilities allows NSK to meet customer requirements for a total solution and ensures high product quality.

✔ SDRC's support and guidance helped NSK team members easily transfer legacy data from their previous system and come quickly up to speed with I-DEAS.

PLANS

✔The European Technology Centre plans to increase productivity even more by developing custom macros to further automate I-DEAS for standard part design.

✔ NSK RHP is now increasing its use of I-DEAS software in its sites throughout Asia, Europe and the Americas. The company expects to improve its inter-site communications and to use 3D modeling more often, particularly on aerospace and automotive projects which tend to require products with more complex shapes.

SDRC

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