DeskArtes and Kalevala Koru – outstanding Finnish high technology and design in harmony

In order to survive in today's global economy, companies must continually increase their competitiveness. This is especially true in the European jewelry industry, where the cheap jewelry of developing countries is threatening to enter. Product development is a key area. Marketing, design, engineering and production departments must work together to produce better products in less time.

The most successful companies are those that manage to blend technology and people. Technology is only useful insofar as it allows individuals and companies to fulfill their promise. In that spirit, the Finish software company DeskArtes has developed a family of products that address the whole product development process from conceptual design to manufacturing through rapid prototyping.

The tools fit perfectly into the jewelry industry. One of the companies which has both adopted the software tools of DeskArtes is Kalevala Koru.

Kalevala Koru is the biggest company in the precious metal industry in Finland, employing a staff of 200 people. Annual net sales total nearly 100 million FIM of which about 20 % was exported. The main export countries are Sweden, Norway, Germany, Denmark, Japan and the USA. The company's products represent elegant, individual Finnish design at its best.

DeskArtes fits the jewelry design workflow

Sketches are the natural way even the most complex designs get started. Artists and designers are still used to doing their best thinking with their pencils. The concept must be visually pleasing but also serve a function, and it cannot cost too much to manufacture. To test these qualities, the traditional jewelry designer makes a prototype out of metal. Each change in design, function or size requires its own prototype.

Jewelry designers would gain obvious advantages of creating 3D CAD models instead: scalability, reusing parts in different models of the same series, cost calculation and fast manufacturing methods.

For the designer, however, mechanical CAD packages are far too restrictive and difficult to use. Designers should spend more time on creative tasks of product design and not be constrained by exact geometry and mechanics. This has lead to the development of a software package specifically tailored to these needs, namely DeskArtes Industrial Design System.

The main purpose of DeskArtes IDS is to provide an easy-to-use platform for designing free-form surfaces and to provide a means to render the models for communication purposes, including marketing. Nowadays equally important is that the system communicates it's models to downstream processes, including rapid prototyping.

DeskArtes second product line – DeskArtes 3Data Expert – is specifically developed to convert and process data from any CAD/CAM system into a solid model which can be directly fed to the rapid prototyping machine. This technology has obviously been integrated into the Design System, as well.

Trendy Jewelry Fast

Kalevala Koru creates all of it's new "trendcollections" using 3D CAD. The sketching is done directly in DeskArtes Industrial Design as 2D side views and cross-section curves, out of which 3D surfaces are obtained by automatic interpolation routines. Besides the advantage of close resemblance to traditional sketching, the resulting surfaces are always guaranteed to be curvature continuous and smooth. Cost calculation and scaling can then be done with the virtual model in seconds, rather than spending days creating a metal prototype.

Producing designs for a trend period forces the product development cycle down to minimum – company gifts are promised within two months from order! DeskArtes photo realistic rendering helps produce presentation images, which speed up decision making. Many different design alternatives may be explored concurrently in co-operation with the designer, client and marketing. Below a collection of DeskArtes images and photographs of a recently created company gift series.
Prototypes are still needed for functionality testing and for meetings were the final decisions are made. These are done directly from the 3D CAD model, using a Sanders rapid prototyping machine. The Sanders at Kalevala Koru runs 24 hours a day. Thanks to DeskArtes excellent STL interface the preparation of the file takes no time at all.

Once the prototyping phase is over, and the final decisions made, the traditional jewelry manufacturer will need to create one more sample – the master, which is used to produce the rubber mold. The approved prototype can not be used, as the master has to be 2-6% bigger than the ready piece.

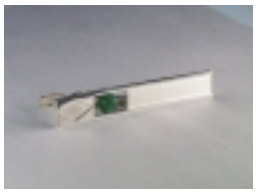
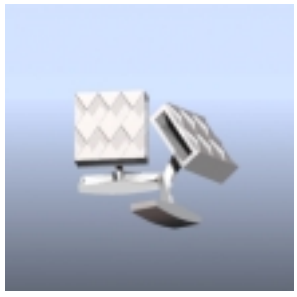
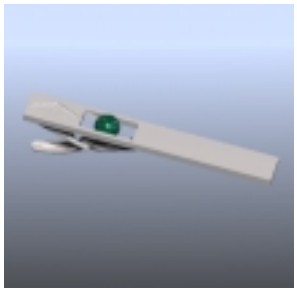
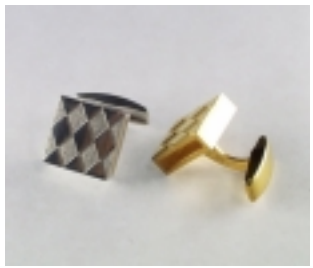
Kalevala Koru sees one of the great advantages of DeskArtes at this stage of the process: the designer scales the DeskArtes model, presses a button to create a new Sanders model, and gets a wax master. The wax is used to create a plaster mold, which again gives the metal master. Once the metal master is cleaned, the process follows the traditional one – rubber mold, wax tree, plaster mold, metal.

The use of DeskArtes products and Sanders Rapid Prototyping machines adds up to savings of several months in a new jewelry series. Time to market for a trend jewelry series is nowadays three months, compared to seven to nine months before the automation.

Piero Cane, Italy

DeskArtes software products for Jewelry Design and Rapid Prototyping are used among advanced jewelry designers all over the globe. Italian Jewelry Manufacturer Piero Cane – a leader in the manufacture of clasps for pearls and of chains: “The program DeskArtes Industrial Design System helps me to plan and to build part of the modeling. I combine solids and surfaces in the construction. Thanks to a perfect STL that DeskArtes produces I can proceed to rapid prototyping immediately. The method saves without the shade of doubt at least 40% of the time spent with the traditional method.”

Kalevala Koru / Finland

Cane Piero / Italy