CASE STUDY: MSA AUER relies on Dimension for protection solutions

Berlin 2007 - MSA is the world's leading manufacturer and supplier of high-end safety products and gas measuring systems. Berlin-based MSA AUER, the company's largest subsidiary and European headquarters, develops and produces protective equipment and gas measuring instruments for a great many branches of industry. Upon entering the company's headquarters in the Neukölln district of Berlin, visitors are left with no doubt that MSA AUER gives top priority to high-tech personal protection solutions. Protective helmets. goggles and clothing look like they came straight out of a science fiction movie. Face masks, compressed-air breathing systems, oxygen apparatus and hearing protection equipment are products that must meet top safety standards in order to protect and save human lives in disasters and emergencies.

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— Detlef Kielow
Senior Engineer
MSA AUER

Dimension 3D Printers create a buzz at user conference

Detlef Kielow, an engineer with MSA AUER, is responsible for developing protective systems and equipment. A team of 16 designers works in the company's development department, using state-of-the-art techniques along the entire process chain from idea to final product. Three years ago, Kielow and his colleague CAD System Manager Hans-Jörg Fengler, attended the PTC user conference, where he became acquainted with the Dimension 3D Printer technology. MSA AUER received its first few prototypes produced with the Dimension 3D Printer, with results that impressed the company's management. A short time later, in June 2005, MSA AUER integrated the Dimension BST 768 into its design process, giving CAD (computer-aided design) users a fast, economical and environmentally friendly means of producing functional 3D models.

Higher design reliability - lower costs

Twenty-four months later, the Dimension 3D Printer has accomplished a great deal for MSA AUER. Layer by layer, engineers build accurate models made of durable ABS plastic nearly every day. As far as Detlef Kielow is concerned, there are two main reasons for choosing Dimension: "Our ability to produce a number of different variants in a short period of time greatly increases the design reliability of our products. In addition, we save money in development by being able to produce our own models in-house." The investment in the Dimension BST 768 paid off in as little as one year.

Hans-Jörg Fengler, senior CAD system manager, coordinates the in-house use of the printer. Other departments have since discovered the advantages of in-house modeling: "Over the course of two years, we produced 700 models with the Dimension 3D Printer," says Hans-Jörg Fengler. "Our machine runs at full capacity even over the weekend, since it works smoothly without supervision."

Precision has priority

MSA AUER does not manufacture consumer goods. In some cases, products entering production remain in use for up to 20 years, and the development cycles are equally precise and time-intensive. Protective equipment and gas measuring instruments protect lives and help save lives. Therefore, approval and patent protection are necessary processes for all equipment and apparatus produced by MSA AUER. Once again, the Dimension technology helps shorten processes. "We can use a model that closely resembles the end product to optimally prepare a product for approval," says Kielow. "For example, if I can submit a precise model to the approval authority, this gives me a time advantage." The same is true for patent protection. The use of a model enables patent attorneys to initiate all steps necessary for protection.

Test phases and optimization

The ABS plastic used by Dimension is highly durable, which gives users such as MS AUER's designers a further advantage. "Of course, we subject our products to extensive tests and also use models from the Dimension 3D Printer for this purpose. This may involve drop tests in which we drop the model onto concrete from a defined height. Anything that breaks during this test could also become a fracture later on. The steps for designers derived from the test result can then be used for further optimization," explains Kielow.

Custom solutions

MS AUER product managers know exactly what their customers need and handle order placement in-house. Models made of ABS plastic enable them to quickly determine whether the product meets market requirements. Changes can be easily made before the customer even sees the first prototype. Any changes the customer requires later on can then be implemented overnight, using the Dimension 3D Printer. Designers with MSA AUER have discovered an additional benefit of the Dimension Printer: They mass produce small product models for trade shows and hand them out to selected customers as gifts.

About The Dimension 3D Printing Group

The Dimension 3D Printing Group is a business unit of Stratasys, Inc., based in Minneapolis, Minn. Dimension 3D printers - which include the Elite, the Dimension 1200 Series and Dimension 768 Series - are networked, desktop modeling systems that provide CAD (Computer-Aided-Design) users a fast, office-friendly, low-cost alternative for building functional 3D prints. Dimension 3D printers build accurate models layer by layer using durable ABS plastic, allowing users to not only evaluate design concepts, but test 3D prints for functionality, form and fit. As the first large format desktop 3D printer that sells for less than $30,000, Dimension incorporates many key features found in modeling systems that cost tens of thousands of dollars more.

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