

Genmar Yacht Group

Customer Success Story

Autodesk® Inventor®
Autodesk® Productstream®

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—Rick Martin
Detail Design Manager
Genmar Yacht Group

Yachts that Dazzle.

Genmar Yacht Group designs winning yachts with Autodesk Inventor software.



Project Summary

A division of Genmar Holdings, Inc., a world-class builder of recreational boats, Genmar Yacht Group has a reputation for exceptional craftsmanship. The Carver and Marquis brand luxury yachts the company manufactures are not only beloved by U.S. and international customers, but also by the boating industry. Genmar Yacht Group's new Marquis 420 Sport Coupé earned the award for best new yacht in its class and the Marquis 500 Sport Coupé won the 2008 World Yacht Trophy's Best Interior Design.

The foundation of the Autodesk solution for Digital Prototyping, Autodesk® Inventor® Professional software is helping Genmar Yacht Group produce its winning designs faster than ever before. The solution reduces costly and time-consuming physical prototyping by letting Genmar Yacht Group's engineers virtually simulate, visualize, and optimize their designs in the detail design phase. With Autodesk Inventor, Genmar Yacht Group has also been able to:

- Develop new models within budget
- Rely on Digital Prototyping and reduce costly physical prototypes
- Assist in developing an unprecedented number of new designs or new models in a single year
- Accomplish more work with fewer resources

The Challenge

Over the last few years, boating companies have been challenged. "Declining domestic demand has heated up the competition between companies," notes Michael Krahn, information systems manager at Genmar Yacht Group. "Many companies have been downsizing to stay in business."

Genmar Yacht Group's approach to staying on top has been two-fold. Task number one: keep consumers interested. "We've got an initiative to produce fast, beautiful, new boats several times a year," says Krahn. "But designing a new yacht model is very complex—you have to think about aesthetics, placement of components, and engineering for speed and performance."

Faced with a shrinking U.S. market, international expansion is the second part of Genmar Yacht Group's formula for success. The company has partnered with a well-known Italian yacht designer, Nuvolari Lenard, to develop an internationally appealing aesthetic that is winning new customers all over the world, including in Russia, China, Turkey, Monte Carlo, Italy, and Greece. To respond quickly to market demand, Genmar Yacht Group needed to streamline its entire design-to-manufacture process.

Autodesk®

The Solution

Inventor is helping Genmar Yacht Group meet its goals. The company's new fully digital yacht design process is less error-prone, less costly, and faster than ever. And by generating documentation before manufacturing, Genmar Yacht Group can start model production sooner and get to market faster. Autodesk also helps facilitate model-year changes.

More Efficient Design Process

Autodesk Inventor is improving every aspect of Genmar Yacht Group's design process, from importing conceptual designs and conducting design reviews to making changes and creating bills of materials (BOMs). Genmar Yacht Group's engineers import concept models into Inventor, preserving all critical data. Then, they detail design everything else for the manufacturing process—including all engines, piping, electrical and wood components, and upholstery—around the imported model using Inventor.

"Our engineering process involves collaboration with the conceptual designers," says Rick Martin, detail design manager at Genmar Yacht Group. "Even though we use different software packages, we collaborate easily."

To seamlessly integrate data throughout the design workflow, Genmar Yacht Group is transitioning from a legacy change order management system to Autodesk® Productstream®, a tool that manages and securely stores data in a centralized location. The change order process in Productstream will improve communication of critical knowledge, and streamline approvals of design iterations. Through the software's notifications feature, team members will be able to easily incorporate their feedback.

In addition, now that Genmar Yacht Group can easily reuse and modify parts created in Inventor and saved in Autodesk Productstream, there's less duplication of effort throughout the design process. "We open the model, make the change, and everything updates automatically," says Martin. "With complete integration, we're turning around alternatives and design changes faster than ever."

Fewer Physical Prototypes

Building physical prototypes for yachts can be exceedingly expensive and time-consuming, particularly if components are made from exotic wood. "If we have to mock up a cabinet three times to show the design intent, we spend unnecessary time and money," says Martin.

Because Inventor models are accurate 3D digital prototypes, Genmar Yacht Group can use Inventor to validate the form, fit, and function of designs, reducing the need for physical prototypes. "Now, we know all components will fit before we build," says Martin. "The digital prototypes we build in Inventor help us identify problems on screen, before anything goes to manufacturing. That means fewer calls from builders trying to figure out why cabinetry isn't fitting properly."

"If errors occur, it can be very costly due to the complexity and the types of exotic wood we use," says Martin. "Our digital prototypes let us view every aspect of the boat, including wood grain color and direction, so that we know exactly what the product will look like. There are no unpleasant surprises—we have full confidence in our digital prototypes."

Easier Manufacturing

In manufacturing, the production floor staff can easily view the drawing data they need, including BOM information. "Our production floor and in-house metal and wood shops rely heavily on drawing information," explains Martin. "With Inventor, we produce clear drawings with valuable information, assisting our manufacturing process."

If there's a question on the design, people on the shop floor can pull up the data in a controlled way. "They always view the correct release data, because Productstream only lets you access and view the released version of a design," continues Martin.

Faster Documentation

With its Autodesk solution, Genmar Yacht Group is also improving its documentation process. "We can now produce documentation during the design process," explains Martin. By the time the boat is

ready for manufacturing, all the documentation is complete, with all design data stored in Autodesk Productstream. In addition, the company's sales and service department can accommodate customer requests for changes or boat information by easily accessing relevant and critical design data through Productstream.

Productstream will also help Genmar Yacht Group with model year changes. Martin explains: "By loading our Inventor models with information and making them easy to find in Productstream, we hope to make our yearly model updates more efficient."

The Result

Autodesk software helps Genmar Yacht Group produce boats within budget. The company has also sped its design-to-manufacturing process by unprecedented levels. "For the first time, we developed three different Marquis yacht models within a single model year," says Krahn. "We brought them to the 2008 Miami International Boat Show and amazed everyone."

Genmar Yacht Group's Marquis 420 Sport Coupé won best new yacht in its class in Miami. In addition, the company's Marquis 500 Sport Coupé was awarded the 2008 World Yacht Trophy's Best Interior Design award at the 2008 International Festival de Plaisance, Europe's largest yacht show.

"Some of our high-quality features would not have been possible if our design process was only performed with physical prototypes, and that is where Inventor comes in," Martin concludes. "Thanks to Inventor, we've been able to get our yachts into production faster and accomplish better designs with fewer resources."

For More Information

To find out how Autodesk solutions can help you get innovative products to market faster, visit www.autodesk.com/inventor.



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