

Seven good reasons to choose Autodesk Inventor 11 for AutoCAD

1. **Moveable dimensions** – Autodesk Inventor 11 enables engineers to move dimensions from one drawing view to another. No need to delete dimensions and recreate new ones. You can also copy dimension properties (e.g., text style, precision, tolerance) from one dimension to another without editing the actual dimension style.
2. **Works with your existing DWG files** – A built-in DWG wizard makes it easy to import the DWG you need for your design. DWG data can be copied and pasted directly from AutoCAD to Autodesk Inventor.
3. **Ready-to-use shape templates** – Why draw common shapes from scratch? Autodesk Inventor 11 gives you a library of pre-drawn 3D shapes (rectangles, cones, rings) that you can cut and paste into your design. A simple dialog box enables you to quickly modify the length, width, and depth of the shape to fit your drawing.
4. **Extensive parts library** – Autodesk Inventor 11 users have access to a library of more than 26,000 components made by over 110 leading manufacturers including ABB, Mitsumi, and Rockwell. By not having to model these purchased parts, you can spend more time focusing on your own designs.
5. **Photo-realistic rendering and animation** – With Autodesk Inventor, you can create computer drawings so realistic that they eliminate the need to build a physical model or mockup. These “photo-realistic” 3D computer models help non-designers understand the design concept. You can even add animation to demonstrate the operation of a machine or system.
6. **Bill of materials** – The software generates a complete and accurate bill of materials based on your 3D assembly model. As you add, subtract, or substitute parts; the bill of materials is automatically updated. With a current and correct bill of materials, manufacturing can order the right parts and materials to build the product.
7. **Facilitates design collaboration** – Your internal and external customers can download a free Autodesk DWV viewer enabling them to review design data from multiple sources. Both 2D drawings and 3D models can be included in the same file along with dimensions, center of gravity, mass, volume, and other parametric data.

Ex-champion race car driver now designs high-performance cars instead of driving them

If it weren't for the 1970's oil crisis, Alan Mertens might be driving racing cars today – instead of designing them

Before becoming an automotive engineer, Alan was a talented amateur race car driver, winning a major national championship in England.

When the fuel crisis caused his sponsor, Shell Oil, to pull its backing, Alan's racing days were over. But he had been bitten by the racing bug, and was bored by his job as a designer in the aerospace industry.

He quit his job and went to work for March Engineering, the biggest race car manufacturer in the world.

“I figured that since I couldn't drive cars any more, I might as well design them,” says Alan.

A super car in the making Born and raised in England, Alan is president of Galmer, Inc., a boutique design firm specializing in designing high-performance automobiles.

Race cars he has designed have been driven by Al Unser Jr. and Danny Sullivan. Alan has been responsible for 74 IndyCar wins, including six at the USA Indy 500.

Alan's current project is designing the Galmer Arbitrage GT for Thailand-based Cobra International Limited. His software: Autodesk Inventor.

The Galmer Arbitrage GT targets the “super car” market, where the sticker price ranges from \$500,000 to \$1 million. Competitors in the category include Ferrari, Lamborghini, Zonda, Saleen, and Noble.

Part of the design challenge is to produce an automobile with performance equivalent to the high-end models, but costing only \$175,000 to \$200,000. The low labor costs in Thailand help Cobra reduce the sticker price.

There are two ways Mertens can optimize the power-to-weight ratio. He can increase the power and reduce the weight.

His target weight for the Galmer Arbitrage GT is a mere 2,000 pounds. This light weight is achieved with a unique chassis. The chassis is fabricated from carbon fiber composite, which is five times stronger than steel.

Designing From the Inside Out

One of the keys to successful automotive design, says Mertens, is to design the car from the inside out. "Start with the chassis, which cocoons the driver, then work your way out to the engine, fuel tank, and other components," he advises.

The reason for starting with the interior and designing outward is to ensure that all components work together as the car is built up.

If you start on the outside, you risk having components not fit when you get to the interior (e.g., not enough room between the steering wheel and the driver's seat), which means you have to start over and change everything to fix it.

Autodesk Inventor helps Mertens visualize how the components work together. "It's a very easy to use, intuitive piece of software, and superb for mechanical component design," says Mertens.

Adds Mertens, "When you create a new part, you can do it in the assembly environment to see how it interacts with the rest of the car. You can also take it out of the assembly and view it as a separate entity."

The Need for Speed

Not only must the cars Martens designs be fast – the Galmer Arbitrage GT has a 500 horsepower engine that will take it from zero to 60 mph in under 3 seconds – but the designer has to be fast, too. The finished design is due by the end of this year.

"Race car design is a deadline-driven business," says Alan. "If we don't deliver on time, our client can't ask for the race date to be changed because his car isn't ready." Mertens says Autodesk Inventor gives him a tremendous advantage in projects with tight schedules.

"When I was an aerospace engineer in the UK, I was on a team to design a cast aluminum bulkhead," notes Martens. "It took four people three months. Here at Galmer, Inc., we recently designed a bell housing for a new road car. With Inventor, it took us just 5 hours."

Driven to Succeed

Prototypes of the Galmer Arbitrage GT are scheduled to be manufactured in October 2007. Although Mertens doesn't race anymore, designing race cars fulfills a large part of his desire to be involved with fast cars. The rest of that fulfillment comes from the cars in his driveway.

"I'm a bit of a car freak," Alan cheerfully admits. "I spend way too much money on cars." His personal automobiles have included a Porsche, a Viper, and now, a BMW sports car. "But I'm too old to race," he admits with a sigh.

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Join Advanced Solutions, Inc. every Friday for an introduction of the newest features in Autodesk software. Lunch and Learns are designed to give an overview of the new features for those considering upgrading or crossgrading to the newest release. Hosted at our regional offices, they are intentionally a small, product focused, group of local users.

Customer Testimonials

"Recently, I've had a great experience working with the staff of your Indianapolis office. With our recent consideration of Inventor upgrade we found the team to be very understanding, extremely responsive and they have gone out of their way to help our company. The choice of ASI is an easy one."

– **Jeffrey Bennett, President, Newtech**