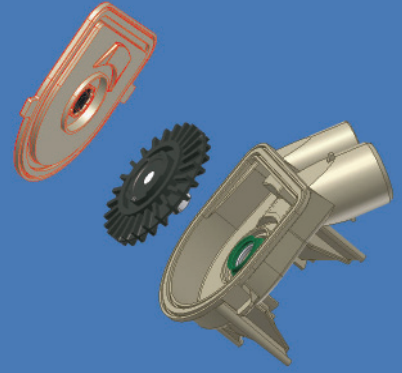


Trostel, Ltd.

Autodesk Manufacturing Solutions  
Customer Success Story

Autodesk Inventor® Professional  
Autodesk® Vault  
Autodesk Productstream™  
Autodesk DWF™



“We won a multi-million dollar contract because we were able to effectively communicate our ideas. Autodesk Inventor was the vehicle that allowed us to deliver a clear presentation to the customer.”

Jim Reszler  
Vice President of Technology  
Trostel

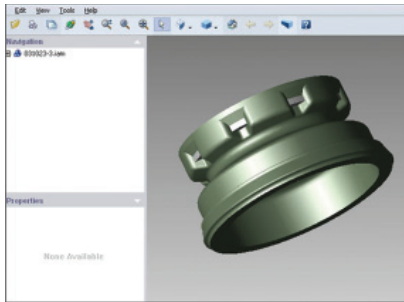
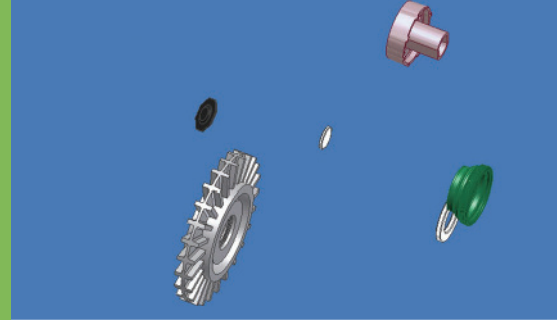
# Complete Autodesk Solution Helps Win Millions in New Contracts, Save Time and Money Fulfilling Them

Trostel boosts sales and productivity, more effectively communicating designs and managing design data.

## Project Summary

Trostel needed powerful 3D modeling technology for designing its products and a practical data management platform for communicating and managing design information effectively throughout its enterprise. In Autodesk, Trostel found all the necessary compatibility, ease of learning and use, and functionality. Trostel has improved its design cycle times by 15-20 percent, and vendor delivery times are down by many days. Complex product concepts come to life in dynamic 3D customer presentations that have led to new contracts worth millions. Productivity is so high that Trostel is equipped to triple new product launches and support 25 percent sales growth without adding a single person to its engineering staff.

Autodesk®



“Autodesk runs our whole show, from purchasing through receiving to the manufacturing floor. I haven’t seen a reason to do anything but continue to grow with Autodesk products.”

Dick Peterson  
Director of Design  
Trostel

### The Challenge

Trostel, a leading custom seal producer, knows that effectively communicating designs and design information—both internally and externally—is a key to its success. To ensure effective communications, Trostel chose a complete product design and data management solution from Autodesk®. With Autodesk Inventor® Professional, Autodesk® Vault, and Autodesk Productstream™ powering its product development lifecycle, Trostel has improved its ability to sell complex products, manage and share design data, and work effectively with vendors. All while accelerating its design process by as much as 20 percent.

### Establish 3D Design Platform that Optimizes Communications and Value

If it rotates on a shaft, Trostel makes seals for it. For decades, the world’s manufacturers of automotive parts, appliances, and a host of other products have relied on the Lake Geneva, Wisconsin, company for top quality custom seals, precision rubber molded products, and custom mixed compounds. Trostel does its own design, manufacturing, testing, and certification, and has a substantial network of suppliers to help with specialties like tooling.

Communicating information about complex 3D product designs with these partners and with customers—as well as among Trostel’s own departments and sites—is one of the company’s major challenges. Customers have been demanding shorter delivery cycles, which means the risk of errors had to be reduced, review processes had to be shortened, and prototype cycles had to be cut. Trostel knew that a powerful parametric design platform coupled with a robust design data management system would improve communications and thereby address all these challenges. But there was a problem—which solution or solutions? Trostel established a team that surveyed its vendor and customer base and found many different systems in place. Trostel couldn’t buy them

all—that would be too expensive and inefficient. So when the team drew up its selection criteria, compatibility with these systems stood out at the top of the list. Strong 3D capabilities were essential as well. As were performance, ease of use, implementation speed, and minimizing the investment required for software and training.

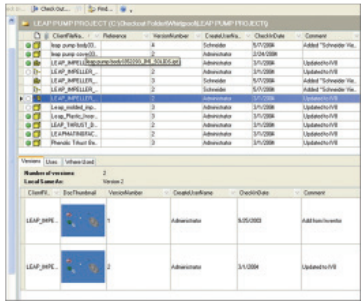
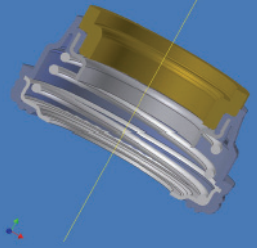
### The Solution: Autodesk to Create, Manage, and Share Design Data

“Autodesk Inventor proved to be the ideal solution for our 3D design requirements,” says Jim Reszler, Vice President of Technology. “Almost our entire vendor base uses AutoCAD. For customers that don’t use Autodesk solutions, Inventor offered us opportunities to bridge some of the gaps and issue a product electronically that they could import into their native CAD systems. Autodesk Inventor has the 3D visualization powers we need to present concepts that win contracts, and the functionality to design products that fulfill them. Autodesk Inventor is excellent in terms of ease of deployment and use. It’s a great value.”

### Creating Process Concept Models that Win Business

Trostel deployed Autodesk Inventor throughout its engineering department, where it quickly became the firm’s day-in and day-out environment for design and much more. Trostel makes extensive use of the product’s parametric design capabilities—a big reason why the engineers are so much more productive.

Trostel had more in mind than bolstering its design and production processes. Autodesk Inventor is also bolstering its sales processes. The company has developed an innovative process for automating manual processes that promised to attract substantial new business. But the concept is difficult to communicate to customers since many parts are in motion simultaneously. Trostel needed a



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better way to share important details that are too complex to convey succinctly in words or 2D drawings.

Its Autodesk solution in place, Trostel engineers turned to Autodesk Inventor to develop 3D models of the concept. Dynamic 3D simulations of these models in action made the difference. “We won a multi-million dollar contract because we were able to effectively communicate our ideas,” says Reszler. “Autodesk Inventor was the vehicle that allowed us to deliver a clear presentation to the customer.”

As the next step, Trostel has implemented Autodesk Inventor Professional to take advantage of the solution’s finite element analysis (FEA) capabilities. FEA helps Trostel learn how well products will withstand stress as designed. “We’re under a lot of pressure from customers to accelerate design time,” explains Dick Peterson, Director of Design. “A big component of the design cycle is testing physical prototypes in laboratories, where each iteration can take weeks. By doing the first couple of iterations in a matter of hours as Inventor Professional FEA runs, we’ve been able to eliminate an entire prototype iteration, which has cut several weeks from the process and saved all the costs it entailed.”

### Managing Design Data for All to Access

“We wanted more than just the ability to create design data,” says Peterson. “We also needed a means to manage it effectively and to keep all the people who work on a design on the same page. Autodesk Vault has the strong data and design management capabilities we needed, which is helping our teams avoid errors and version control problems. And it’s all the more valuable because it’s fully integrated with our design environment.”

Just as Autodesk Inventor has become Trostel’s mainstay platform for design, Autodesk Vault has become its mainstay for controlling and managing all design data and associated

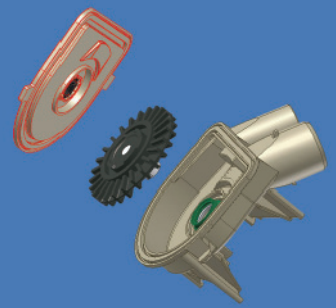
project files. Trostel recently expanded the role of Autodesk Vault to include tooling and fixturing drawings as well. Now personnel from every department involved in the design and production of a product—engineering, manufacturing, quality control, purchasing, and more—can easily access all product design information from a single repository. Not only is product data centralized—it is centralized in a safe place, on a regularly backed up server. No longer does Trostel worry about losing vital intellectual property because of a failure in someone’s hard drive or the accidental overwriting of good work due to lack of version control.

Autodesk Vault also plays a key role in maintaining Trostel’s all-important industry certifications, which have stringent document control requirements. “Autodesk Vault does an excellent job of keeping our library of drawings under control and properly dated and managed,” says Reszler. “It has been a major factor in our ability to secure QS and TS certifications.”

Autodesk Vault, as with the other Autodesk products at Trostel, proved simple to implement, easy to use, and flexible. Like many small to mid sized manufacturers, Trostel found that Autodesk Vault provides a pragmatic approach for making process improvements at the firm’s own pace, allowing incremental deployment to achieve quicker results in targeted areas. Next Trostel plans to use Autodesk Productstream to move drawings through the manufacturing release process, track revisions, and manage the revision approval process. “Autodesk Productstream will integrate with Autodesk Vault and allow our product engineering group to move drawings electronically instead of on paper,” says Peterson.

### Sharing Designs Better Internally and Externally

The complete solution from Autodesk is letting Trostel more effectively exchange designs and design concepts between departments and



with customers and suppliers. Trostel conducts online design reviews with customers and design teams that can be located anywhere in the world. Everyone involved sees dynamic, lifelike 3D displays of the design produced by Autodesk Inventor. The team can collaboratively make design changes in real time so that everyone can see the results immediately. “For effectiveness and timeliness, there’s a day and night difference compared with overnighting piles of paper and sending files around,” says Reszler. “Customers are impressed with the sophistication of our presentations.”

Autodesk Inventor is helping Trostel slash time out of the tooling cycle. Trostel sends 3D designs of customer files to tool vendors to drive their machining equipment. Rather than create the product files they need, vendors simply import Trostel’s designs into their own Autodesk systems. “We’re saving the three days or so that they’d need to create the files themselves,” explains Peterson. “We’re also eliminating an opportunity for errors to be introduced.”

Trostel also uses Autodesk 3D DWF—the industry standard for sharing data-rich design files electronically—for communication among its far-flung departments and plants, and will soon be using it with customers as well.

### **The Result: Engineering Capacity to Cope with a Boom in Business**

With sales successes like the new multi-million dollar contract that Autodesk Inventor helped bring in, Trostel is looking forward to a record year. Three times as many new product design programs will be launched as last year and sales are expected to grow 25 percent. But the existing engineering staff will be able handle the additional workload because of the speed and efficiency introduced by the Autodesk solution. “We’ll be turning over a third of our product line, which was unheard of a few years

ago,” says Reszler. “And we’ll be able to do it without adding a single new engineer.” “We’ve reduced our average number of design iterations from five to four,” Reszler continues. “That’s a 15 to 20 percent improvement in engineering productivity right there, and we’ve reduced our product design cycle by just as much. The productivity benefits go way beyond engineering. The entire process is more efficient because everyone involved in producing products is using the same environment. We’ve cut weeks off of our delivery times while freeing up resources to take on more business.”

“Autodesk runs our whole show, from purchasing through receiving to the manufacturing floor,” says Peterson in closing. “Autodesk has come through for us on every front, helping us save time and money while growing our business. I haven’t seen a reason to do anything but continue to grow with Autodesk products.”

### **For More Information**

To learn more about how Autodesk solutions are saving manufacturers time and money, visit us on the web at [www.autodesk.com/manufacturing](http://www.autodesk.com/manufacturing).

Autodesk Premier Solution Provider Master Graphics installed the Autodesk software and the hardware it runs on, and helped with deployment, data migration, training services and more. According to Peterson, “We’re 100% satisfied with the support Master Graphics has provided. Whenever we’ve needed them, they’ve been there for us. For training, helping us work around software problems, and all the other issues that come up, we’re totally satisfied with Master Graphics and the flexibility and dependability they display.”