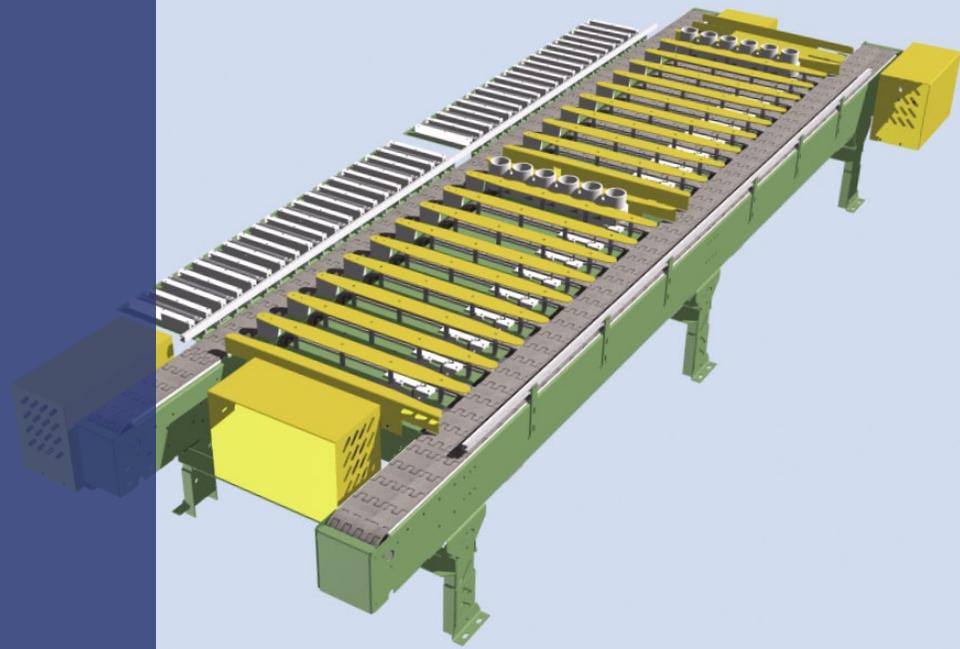


# Hytrol Conveyor Company, Inc.

## Customer Success Story

Autodesk Manufacturing Solutions  
Autodesk Inventor®  
Autodesk® Intent  
AutoCAD® Mechanical  
Autodesk® Streamline  
Autodesk® Vault  
Autodesk® DWF™  
Autodesk Consulting



*“By implementing the Autodesk manufacturing solution, we’re enabling our network of distributors to enter real-time engineer-to-order sales in the field. We’ll be able to significantly shorten our sales cycle and engineering time by automating redesign for each order, BOM production for manufacturing, and spare parts lists for our customers.”*

Stuart Shaw  
Information Systems Manager  
Hytrol Conveyor Company

## Hytrol Conveyor Puts Engineer-to-Order Sales in Motion 50% Faster with Autodesk

With a comprehensive Autodesk manufacturing solution, Hytrol automates mass product customization at the point of sale while moving from 2D to 3D design and adopting a paperless manufacturing process.

### Project Summary

Hytrol Conveyor Company depends on Autodesk to help it solve a pressing business need: speeding product customization, from the point of sale to delivery. Autodesk Consulting has provided Hytrol with insights into how the company can improve its business processes using a comprehensive Autodesk solution. With Autodesk® Intent, the company is driving toward engineer-to-order (ETO) sales, effectively shortening its sales cycle and engineering time on customized products. Using a combination of AutoCAD® Mechanical and Autodesk Inventor® to create designs, Hytrol’s engineers are migrating from 2D design to 3D design. As a result, Hytrol will be able to vastly improve communication between engineers and the shop floor, speeding manufacturing by eliminating errors and reducing rework. With Autodesk® Vault, Hytrol is able to effectively manage its 2D and 3D designs and work in process, while Autodesk® Streamline has enabled the company to easily share designs and technical manuals with both employees and distributors.

### The Challenge

#### Shortening Sales and Design Cycles

Established in 1947, Hytrol Conveyor Company is now one of the largest manufacturers of conveyors and conveying systems in the world. Companies that need to move and sort products quickly and accurately—such as 3M, Best Foods, Barnes & Noble, Costco Wholesale, Federal Express, Ford, Goodyear, Office Max, O’Reilly’s, R.R. Donnelley, Starbucks, and United Parcel Service—depend on the computer-controlled conveyors and automated, high-speed sortation systems that Hytrol manufacturers to help them cut material handling costs. Hytrol revolutionized the industry by offering 24-hour order-to-ship service on stock products—backed by the promise of free freight for delivery failures. “Speed to market has always been one of our strengths and differentiators,” notes Stuart Shaw, Information Systems Manager at Hytrol.

To capitalize on this strength and continue to grow its leadership in an increasingly competitive global marketplace, Hytrol set its

Autodesk®



*“The Autodesk mantra is about service—that means a lot to us. We know Autodesk is listening, because we can see how they incorporate our feedback into new products.”*

George Williams  
Manager of Engineering  
Hytrol Conveyor Company

*“Autodesk Intent was a no-brainer for us. It had everything we needed for ETO—functionality that would have taken us two to three times as long to write ourselves.”*

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sights on offering this type of rapid delivery for highly-customized products as well—a goal that immediately shed light on the company’s need for updated sales order, engineering, and manufacturing processes. “In order to extend our promise to one-, two-, and four-week items, we needed to get information from the customer faster and more accurately than ever before,” says Shaw. “We then needed an automated process for taking this information, designing a custom product, and delivering specifications to the shop floor.”

Hytrol sought a solution that would help it address every aspect of its business issue: designing and delivering a highly-customized product to market faster. By driving ETO sales in the field, it would be able to shorten sales and engineering cycle times. It could speed manufacturing by automating bill of materials (BOMs) production. Hytrol also wanted to streamline parts ordering by offering customers spare parts lists at the time of order, a change that would boost customer satisfaction. And to eliminate costly and time-consuming manufacturing errors, the company needed a clear migration path from 2D to 3D so that it could deliver more production-ready designs to the shop floor.

#### **The Solution Comprehensive from End to End**

With Autodesk Inventor, Autodesk Intent, AutoCAD Mechanical, Autodesk Streamline, Autodesk Vault, Autodesk® DWF™, and Autodesk Consulting, Hytrol is well-equipped with the tools and services required to stay on top in the competitive global market. “By implementing the Autodesk manufacturing solution, we’re enabling our network of distributors to enter real-time engineer-to-order sales in the field,” says Shaw. “We’ll be able to significantly shorten our sales cycle and engineering time by automating

redesign for each order, BOM production for manufacturing, and spare parts lists for our customers.”

#### **Customizing Products Quickly and Easily**

Hytrol sells exclusively through 80 distributors—representing 600 salespeople—and chose Autodesk Intent to facilitate ETO sales for all of its distributors. When Hytrol started looking at linking all its critical business systems together it quickly realized the ERP systems on the market didn’t have the ETO component it required, nor strong ties into the Autodesk products it was already using. “Autodesk Intent was a no-brainer for us,” says Shaw. “It has everything we need for ETO—functionality that would have taken us two to three times as long to write ourselves.” Shaw explains, “By evaluating our business process needs and incrementally implementing ETO before an ERP system, we will save thousands of dollars in rework. Autodesk Intent fit our ETO needs better than available ERP configurators and was clearly the most cost-effective choice.”

Autodesk Intent will automate product customization for Hytrol, enabling the company to efficiently produce and deliver custom products rapidly. “Customizing an order is a complex process because even minor changes in specifications require validation,” explains George Williams, Manager of Engineering at Hytrol. “Autodesk Intent integrates our engineering specifications, design intelligence, and rules upfront, so we don’t have to do massive calculations behind the scenes. It’s done for us automatically.” By embedding engineering rules, Autodesk Intent enables sales to achieve pre-approved designs in the field, reduces design iterations, minimizes costly errors, and eliminates manufacturing rework. With reduced lead times and products moving out the door faster, Hytrol is better able to meet the growing demand for mass customization.

Before Autodesk Intent, it was impossible to deliver final assembly drawings on customized products to the ordering distributor because the combinations were astronomical. But now, distributors are able to view what Hytrol will deliver at the time of order. “We can use engineering rules to create assemblies—in an automated fashion—before they hit the shop floor,” explains Williams. “That means when distributors place custom orders, we can show them exactly what they are ordering before it’s manufactured.”

The tight integration between Autodesk Intent and Autodesk Inventor will also help Hytrol produce engineering documents based on a distributor’s input, a function that Hytrol is hoping to leverage soon. “We want to tie distributor information, engineering rules, and other parameters directly to our engineering documents inside of Autodesk Inventor.”

Being able to give customers a spare parts list upon sale was a big priority for Hytrol’s distributors. Before Autodesk Intent, it was virtually impossible for Hytrol to meet this request. “We had to wait until we built the conveyor before we knew its spare part content,” says Shaw. With Autodesk Intent, Hytrol will be able to build a bill of materials even as the customer is filling out an order. “Because part numbers are now connected to design information, the end customer can buy spare parts for the conveyors he’s ordering when he orders them,” adds Shaw. “Autodesk Intent is instrumental in this process.”

#### **Facilitating Design Creation—in 2D and 3D**

Hytrol originally used ME10 from CoCreate Software, Inc., to create its engineering designs in 2D. But as it became apparent to Hytrol that ME10 could not continue to meet its needs,

the company began looking for a replacement product that would not only deliver the best 2D design tools immediately, but also offer a clear path to 3D. Autodesk was the only vendor that could offer this natural progression between 2D and 3D design. Three years ago, Hytrol converted to AutoCAD Mechanical. The company is now gradually migrating engineers to Autodesk Inventor, which helps them create more accurate designs as well as visualize and communicate design intent more clearly. “Even though 2D is good, there is still a margin of error in what’s sent to the shop floor when we design in 2D,” says Williams. “With 3D, that problem goes away.”

#### **Managing 3D Design Data**

As Hytrol migrates to Autodesk Inventor, it’s beginning to lean on Autodesk Vault for its data management needs. Initially, the company planned to develop its own data management system for 3D data, just as it did to manage its 2D data. But after viewing Autodesk Vault capabilities, the company saw no reason to spend resources creating an in-house solution. “Once we saw what Vault could do, we backed off,” notes Williams. “Vault will manage all of our documents in Inventor, so we can concentrate on design rather than on worrying whether our newest internal release is working well for users.”

Integrating Autodesk Vault with its existing PDM system, Hytrol plans to use Autodesk Vault to manage, ultimately, all of its engineering work in process. Autodesk Vault will automatically generate DWF files that Hytrol’s PDM system can then serve out to the shop floor. Use of DWF files for manufacturing and assembly helps transition Hytrol to a paperless environment—all part of its initiative to move to lean processes.

#### **Sharing Made Easy**

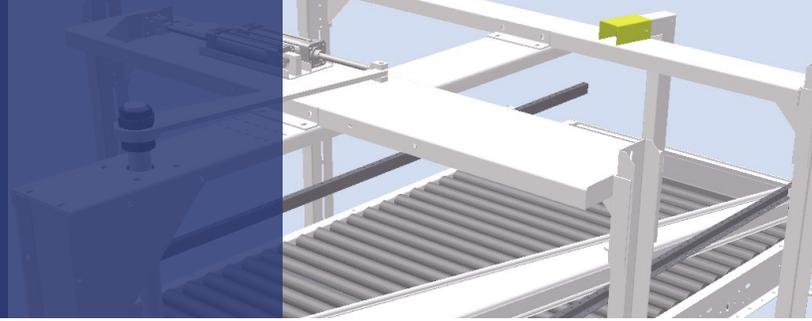
When Hytrol decided it wanted to publish

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In partnership with Autodesk Consulting, Autodesk Premier Solution Provider D3 Technologies has also provided training and support for the Autodesk solution Hytrol adopted. “D3 Technologies is a true value-added reseller,” said Williams. “D3 has been a great resource throughout our implementation of Inventor 3D technology. Its staff has trained our employees, guided us in setting up our system, and provided expert technical help. They have helped us become a better company.”

technical documents to distributors and their sales people over the Internet, it considered creating its own online publishing service. But when the company evaluated Autodesk Streamline, it realized that it could get the functionality it wanted while saving its software development resources for other projects.

Implementing Autodesk Streamline was easy—and the benefits immediate. “The most effort we had to exert was in deciding which drawings to put on the web,” says Williams. “It only took one person a little over a month to actually post everything.” Now, rather than depending on email to share technical documents, its distributors’ 600 salespeople and zoo of Hytrol’s employees use Streamline and 3D DWF files instead. Distributors can also easily access product manuals for customer installations or service calls. “Autodesk Streamline has been a great hit with our distributors,” notes Shaw.

### Providing Valuable Insights

Hytrol considers Autodesk a true partner—a fact underscored by the company’s decision to adjust course when Autodesk Consulting suggested alternatives. “Autodesk Consulting helped us to really look at and understand our business processes before we started implementing software,” says Williams. “They thought of things we hadn’t considered—they’ve given us good direction.”

In a strategic business consulting engagement, Autodesk Consulting partnered with Hytrol to identify the areas on which technology could make a positive impact. “After analyzing and selecting the right tools to solve our business challenges, we worked with Autodesk Consulting to define the architecture of our Autodesk Intent-focused implementation,” says Shaw. “Autodesk is not just a

software vendor. Through our work with Autodesk’s Sales and Consulting teams, we’ve come to value Autodesk as a real business partner.”

### The Result

#### Implementing ETO 50% Faster

Hytrol is successfully transitioning from 2D with AutoCAD Mechanical to 3D with Autodesk Inventor. The company’s newest innovation—the EZLogic GEN3 Dynamic Zone Accumulation system that controls product spacing on conveyors by sensing the product size to avoid jams—was done entirely in Autodesk Inventor.

With the implementation of its comprehensive Autodesk manufacturing solution, Hytrol also now has the tools it needs to solve its most pressing business challenge: mass-producing customized products quickly and cost-effectively. Autodesk’s manufacturing solution is bridging the gap ERP companies could not cross, enabling Hytrol’s extensive distributor network to enter real-time ETO sales from the field, automate BOM production for manufacturing, and generate spare-parts lists at the point of sale. Autodesk has already helped Hytrol reduce the number of BOMs it has archived from 25,000 records to just 12 engineering rules.

By automating redesign for each order and reducing the order management bottleneck in engineering, Autodesk will also help to trim the sales cycle and engineering time. And by forgoing internal development of a customized in-house ETO solution, Hytrol will be reaping the benefits of increased sales volume sooner. “With tight integration between all of Autodesk’s solutions, we are implementing this system in half the time it would have taken us to develop a customized solution in house,” notes Shaw.

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