

HIGHLAND VANS

ACCELERATING CUSTOM ADVENTURE VAN CONVERSIONS WITH **3DEXPERIENCE WORKS** AND DELMIA MACHINING SOLUTIONS

Case Study



Using **3DEXPERIENCE Works** solutions for design, data management, collaboration, and manufacturing, Highland Vans has cut its design and production cycles, shortened customer delivery times, and reduced design errors in converting regular vans into fully equipped adventure camper vehicles.

Challenge:

Shorten development cycles, reduce production times, and decrease errors to cut delivery times by enhancing collaboration, improving design visualization, automating production, and advancing nesting capabilities.

Solution:

Implement **3DEXPERIENCE** Works design, modeling, data management, collaboration, and communication solutions, and DELMIA Machining programming, machining, and nesting solutions.

Results:

- Shortened development and production cycles
- Cut delivery times
- Reduced design errors
- Cut nesting time from four hours to 10 minutes

Founded in 2020 and built by three brothers who love the outdoors and adventure, Highland Vans leveraged a team of experienced designers, engineers, and craftsmen to become a leading provider of adventure camper van conversions. From its state-of-the-art manufacturing center in Elk Grove Village, Illinois, the company strives to complete every project with a high degree of precision to make sure that van conversions fully meet customer expectations.

To ensure that Highland Vans delivers only the highest quality van conversions, every product is designed and manufactured using the latest computer-aided manufacturing technology, according to Principal Design Director Szymon K. Gluc. "What makes us stand out from other van conversion companies is that we try to add flair to the design by using different materials and finishes to create a unique design style and brand language that blends very rugged and adventurous with a modern, sophisticated, homelike feel," Gluc explains. "To achieve this, we need to utilize advanced collaborative design and manufacturing technologies.

"Our manufacturing process is cutting-edge and innovative," Gluc continues. "We utilize computer-aided design [CAD] and the latest computer-aided manufacturing [CAM] technologies to ensure that

"Using 3DEXPERIENCE SOLIDWORKS, we can access a detailed 3D CAD model of the van we're converting, allowing us to design precise and perfectly fitting parts."

– Szymon K. Gluc, Principal Design Director

every van is crafted to perfection. From the initial design to the final assembly, we ensure that every detail is perfect."

When Highland Vans was established, the company initially used Autodesk® Fusion 360® design and manufacturing software to develop and produce adventure van conversions, according to Lead Industrial Designer Umair Yusufi. However, machining with that solution was slow and cumbersome, requiring them to nest parts manually, adding time and cost to the process. To boost efficiency, shorten delivery times, and improve its competitiveness as a high-end provider of adventure conversion vans, Highland Vans chose to migrate to **3DEXPERIENCE**® Works product development and DELMIA® Machining solutions.

Highland Vans implemented **3DEXPERIENCE** Works design, modeling, visualization, collaboration, data management, and communication solutions from the **3DEXPERIENCE** Works portfolio. The product innovation portfolio leverages the cloud-based **3DEXPERIENCE** platform to give customers access to the power of industry-leading tools from Dassault Systèmes for design, simulation, manufacturing, data management, and marketing—as well as DELMIA programming and machining solutions.

LEVERAGING VEHICLE CAD DATA COLLABORATIVELY

With the implementation of **3DEXPERIENCE** Works solutions, Highland Vans can design and manage van conversion components more precisely and collaboratively by working in the cloud, resulting in faster design cycles and shorter customer delivery times—all while managing data more cleanly, transparently, and effectively. "Using **3DEXPERIENCE SOLIDWORKS**® in the cloud, we

download a full-grade 3D CAD model of the actual van that we are converting and can make use of every centimeter, inch, and curve of the van to develop really tight-and precise-fitting parts,” notes Gluc.

“With over 13,000 parts in our cloud-based library, SOLIDWORKS enhances our data organization and management. It provides real-time visibility into project workflows, ensuring that we track who is working on each component and when.” Yusufi adds. “If Szymon is working on something and he has to stop, I can see where he was and take over from there because we use the same tools and the 3DEXPERIENCE platform manages data and maintains revision controls.” Similarly, more than one person can collaborate on parts in an assembly and collaborate more effectively because they don’t have to worry about data management, further contributing to shorter design cycles.

AUTOMATING MACHINING AND NESTING SAVES TIME AND MONEY

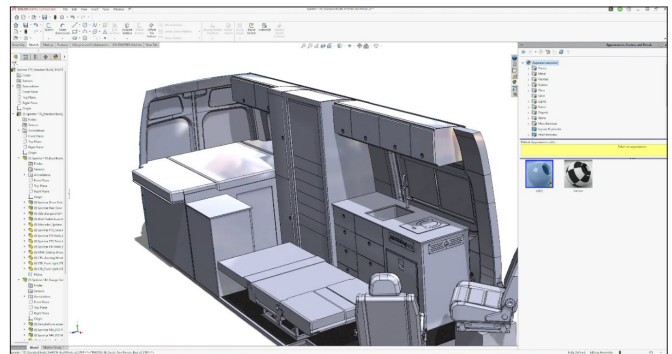
In addition to the productivity gains realized using 3DEXPERIENCE Works solutions, Highland Vans is saving time and money due to the efficiency improvements associated with implementing DELMIA Machining CNC programming, machining, and nesting solutions. The DELMIA NC Shop Floor Programmer role has allowed Highland Vans to automate machining and nesting, leading to shorter production cycles, fewer design errors, shorter delivery times, and decreased scrap and rework costs.

“DELMIA CAM [Machining] has significantly improved our ability to produce precise parts, streamlining our file nesting and production processes. This has reduced turnaround times, minimized errors, and allowed us to efficiently adjust nesting configurations before cutting, marking a substantial improvement in our operations.”

“Previously, on Fusion 360, we had to nest manually,” Yusufi says. “When producing multiple vans simultaneously, such as cutting a hundred drawers, DELMIA allows us to automate the nesting process for all units in a single step. This automation saves substantial time, material, and costs. Previously, manual nesting took four hours per van; now, it takes just 10 minutes.”

“DELMIA CAM [Machining] has enhanced our manufacturing capabilities to produce precise parts. DELMIA has also enhanced the way that we nest files and produce parts, and has reduced turnaround cycles and the risk of errors because we can now not only nest but efficiently make changes to the nesting before cutting. This is a big change and improvement.”

– Umair Yusufi, Lead Industrial Designer



In addition to supporting more collaborative design in the cloud, the move to 3DEXPERIENCE Works product development and DELMIA Machining solutions has enabled Highland Vans to save time and money by automating production, including the automated nesting of parts to be machined.

DESIGN VISUALIZATIONS KEEP CUSTOMER INVOLVED

With the implementation of **3DEXPERIENCE SOLIDWORKS Premium**, Highland Vans has access to **SOLIDWORKS Visualize** photorealistic rendering software, which has helped the company communicate more effectively with customers through the use of high-quality visuals. "I think the most important aspect of [**3DEXPERIENCE**] **SOLIDWORKS** is being able to visualize different ideas and concepts by our customers so they can see what they are going to get," Gluc points out.

"Being able to add colors and create beautiful renderings from their ideas for a dream van, we are able to use the software to allow them to see and visualize the end product," Gluc says.

Products:

- **3DEXPERIENCE SOLIDWORKS Premium**
- **3DEXPERIENCE SOLIDWORKS Visualize**
- **DELMIA NC Shop Floor Programmer**
- **Collaborative Industry Innovator**
- **3DSwymer**

Highland Vans
872 Cambridge Drive
Elk Grove Village, IL 60007
USA

Phone: +1 708 797 3037

www.highlandvans.com

VAR: GSC
30W112 Butterfield Rd.
Warrenville, IL 60555

www.gsc-3d.com

Our **3DEXPERIENCE®** platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3DEXPERIENCE** Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 250,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.



3DEXPERIENCE®