CASE STUDY

From Print to Production: Optimizing Post-Printing Workflows at J.W. Speaker

OVERVIEW

J.W. Speaker designs and manufactures cutting-edge, high-performance LED lighting technology for automotive, powersports, transportation, and industrial applications. With a strong focus on innovation and quality, their products are designed, manufactured, and assembled in Germantown, Wisconsin.

A longtime adopter of additive manufacturing (AM), J.W. Speaker has been using 3D printing in their facility for over a decade. With the idea of using FDM printing to replace traditionally machined assembly fixtures used in the production of custom lighting, they purchased a Stratasys F3300 FDM printer.

To fully capitalize on the F3300's potential, they would need to bring in an automated support removal solution to further improve throughput and streamline labor-intensive post-printing processes. J.W. Speaker integrated the PostProcess® BASE™ solution into their Wisconsin facility - dramatically accelerating turnaround times, reducing manual labor, and boosting overall production efficiency.

THE CHALLENGE: MANUAL BOTTLENECKS SLOWED AM WORKFLOW EFFICIENCY

J.W. Speaker 3D prints between 10 and 50 parts per week, primarily serving the automotive and motorsports industries with LED lighting technology for functional fixtures and gauges. Their equipment includes Stratasys F370CR, Origin One, and HP MJF printers - with FDM as their dominant 3D printing technology.

Prior to adding automation to their workflow, J.W. Speaker relied on a manual post-printing process that was both time-consuming and labor-intensive. Removing FDM support material required extensive operator involvement — including manually clearing threaded holes and intricate geometries — followed by soaking parts in sodium hydroxide, rinsing them thoroughly, and then drying them overnight in an oven. This multi-step workflow created bottlenecks, delayed part availability, and limited the team's ability to scale production efficiently.

As print volumes continued to grow, this existing process could no longer keep up with demand. Their manual cleaning station also

created challenges for larger fixtures, requiring pieced-together parts due to drying constraints and long processing times.

J.W. Speaker's engineers sought a more efficient, in-house alternative that would allow for faster turnaround and greater control.

THE SOLUTION: POSTPROCESS BASE AUTOMATED FDM SUPPORT REMOVAL SOLUTION

PostProcess BASE FDM Support Removal Solution

To overcome these bottlenecks, J.W. Speaker partnered with PostProcess Technologies to implement the **BASE FDM Support Removal Solution** — an automated, spray-based system designed for high-throughput post-printing. At the same time, they introduced the **Stratasys F3300™**, a next-generation FDM printer that delivers faster print speeds and larger part capacity. These two technologies were strategically acquired to work together, creating a more efficient and scalable additive manufacturing workflow.

The F3300 allowed the team to shift more tooling applications, such as pallets and fixtures, from traditional machining to 3D printing. This transition reduced labor, increased turnaround times, and aligned well with the PostProcess BASE solution, to handle larger, more complex parts. By eliminating prolonged soaking and drying, the BASE solution automated the entire post-printing process by delivering consistent, high-quality results with minimal operator involvement.

Together, PostProcess and Stratasys technologies have enabled J.W. Speaker to build a fully integrated and automated additive workflow that led to reduced labor demands and bottlenecks while supporting their growing volume of production.

THE RESULTS: FASTER TURNAROUND TIMES, REDUCED LABOR, AND SCALABLE GROWTH

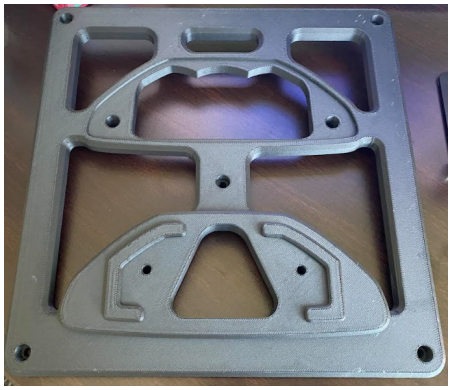
Since adopting these solutions, J.W. Speaker has achieved measurable improvements in productivity, cost-efficiency, and workflow scalability.

With the PostProcess BASE, parts that previously required overnight drying after prolonged soak times can now be dried and ready in **as little as 10 minutes**. This improvement has eliminated multi-step post-printing delays, giving engineers and technicians faster access to finished parts and allowing production to keep up with tight deadlines.

> **"With our old machine, we would have to put the parts in an oven overnight to dry out. Now, we have the parts cleaned and ready to be delivered in just a couple of hours."**
>
> *- Michael Speaker, Lead Additive Manufacturing Specialist*

By replacing in-house machining with 3D printing and automating post-processing, J.W. Speaker has realized a **78% time savings** (from 1 week to 9 hours). Compared to outsourcing, that figure jumps to 89%, cutting turnaround from two weeks to just 9 hours.

Cost savings have been substantial as well. By pairing the BASE with the Stratasys F3300, the team has shifted a significant portion of their pallet and photometry fixture production from traditional machining to additive automation, saving an **estimated $60K–$75K annually**. These savings come not only from reduced outsourcing and labor, but also from decreased material waste and improved part consolidation.



3D printed pallet used in J.W. Speaker's lighting production

The team has also gained the ability to handle larger fixtures (up to 18" x 18") in a single build, reducing the need for segmented parts and post-print assembly. This has simplified their fixture design process and improved the structural integrity of their builds.

With faster processing, more consistent results, and reduced reliance on manual labor, technicians now have more bandwidth to focus on design innovation and process optimization.

This transformation has paved the way for continued expansion. Over the past five years, J.W. Speaker has grown from just two to six additive machines, and their investment in post-processing automation has been key to sustaining that growth. By removing bottlenecks and scaling throughput, they've built a more resilient and future-ready additive manufacturing operation - one that's equipped to meet evolving demand with speed, precision, and confidence.

About J.W. Speaker

Founded in 1935, J.W. Speaker is a leading manufacturer of high-performance LED lighting solutions for automotive, powersports, transportation, and industrial markets. Headquartered in Germantown, Wisconsin, the company designs, engineers, and assembles innovative lighting technologies built to withstand the toughest environments. With a long-standing commitment to U.S.-based manufacturing and engineering excellence, J.W. Speaker continues to push the boundaries of lighting performance, safety, and durability across a wide range of applications. Learn more at www.jwspeaker.com.

About PostProcess Technologies

PostProcess is the leader in automated and intelligent post-printing solutions for 3D printed and additive manufactured parts. Founded in 2014 and headquartered in Buffalo, NY, USA, with international operations in Mougins, France, PostProcess removes the bottleneck in the final stage of the 3D printing workflow, post-processing, through a combination of patent-pending software, hardware, and chemistry technologies. The company's solutions automate industrial 3D printing's most common post-printing processes including support removal, resin cleaning, and surface finishing, enabling customer-ready 3D printed parts at scale. The PostProcess portfolio has been proven across all major industrial 3D printing technologies and is in use daily in every imaginable manufacturing sector. Learn more at postprocess.com.