CASE STUDY

From Manual Support Removal to Automated Throughput: Stratasys Direct Accelerates FDM Workflows

OVERVIEW

CHALLENGE:
Stratasys Direct's traditional immersion-based FDM support removal processes created bottlenecks through long drying times, workflow congestion, shipment delays, and high scrap rates.

SOLUTION:
Stratasys Direct implemented the PostProcess® BASE™ automated spray-based FDM support removal system to replace their traditional submersion methods with a faster, consistent, and scalable workflow.

RESULTS:
With the PostProcess BASE solution, they were able to increase throughput by 40%, reduce part scrap from 50% to zero for a critical PC part, and enabled same-day shipment for many applications. By removing the bottleneck in their workflow they saw improved operational efficiency, reduced lab space constraints, and streamlined post-processing overall.

THE CHALLENGE: TRADITIONAL DUNK TANKS CREATED WORKFLOW BOTTLENECKS

Stratasys Direct®, the contract manufacturing division of Stratasys, provides on-demand 3D printing, post-processing, and finishing services across a wide range of industries. Their Minnesota facility operates multiple Stratasys FDM systems, including the F900®, F770®, Fortus® 450, F370® and F3300®, supporting a broad range of materials, customer applications, and complex geometries where efficient post-processing is critical.

Their traditional support removal processes relied heavily on immersion tanks and ultrasonic systems that required parts to be fully submerged for long periods of time. These methods created several operational challenges, including:

- Long drying times caused by full part saturation
- Limited post-processing space and growing workflow congestion
- Delayed shipments due to bottlenecks after printing
- High scrap rates for delicate geometries damaged during ultrasonic cleaning

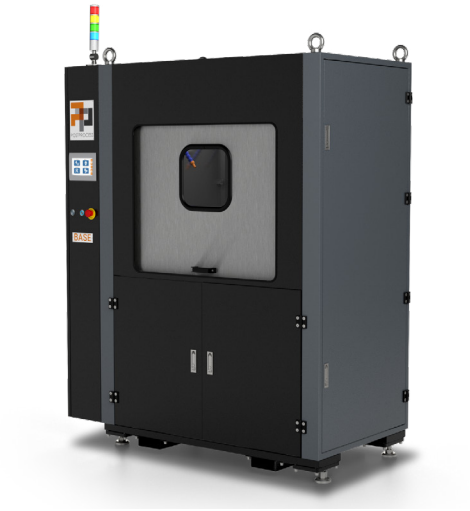
Large parts were especially difficult to manage, as full immersion created significant drying delays that prevented same-day shipment. For more delicate customer applications, ultrasonic tanks introduced vibration and mechanical stress that often caused breakage.

One polycarbonate (PC) part with SR-30 support material became a major pain point. Although the geometry was simple to print, fragile features consistently broke during ultrasonic post-processing, resulting in a 50% scrap rate making the job unprofitable.

These challenges made it clear that Stratasys Direct needed a more controlled and scalable post-processing solution.

THE SOLUTION: VALIDATED, AUTOMATED FDM SUPPORT REMOVAL WITH POSTPROCESS BASE

Stratasys Direct partnered with PostProcess Technologies to implement the **BASE™ FDM Support Removal Solution** - an automated, spray-based system designed for high-throughput post-printing.



PostProcess BASE FDM Support Removal Solution

Unlike traditional dunk tanks that fully submerge parts, the BASE solution uses targeted spray technology with top and bottom nozzles to remove supports without oversaturating the entire part. This approach focuses on dissolving support material while minimizing unnecessary soaking, reducing drying time, manual labor and operator wait time.

As part of **Stratasys' Post-Processing Partnership Program,** the large format FDM printers are paired with the PostProcess BASE solution as a selected and validated workflow for FDM support removal. This gives customers a seamless, **end-to-end additive manufacturing workflow** - combining Stratasys printing with proven PostProcess solutions to improve consistency, efficiency, and scalability.

By eliminating full submersion methods, the BASE system allowed the team to move parts through post-processing faster and more efficiently, significantly reducing the delays they were experiencing previously.

For the problematic PC part with SR-30 support material, the team developed a custom fixture for the BASE system that allowed them to securely process eight parts at a time. This eliminated breakage during support removal and created a repeatable workflow for a previously high-risk application.

By implementing the PostProcess BASE solution, Stratasys Direct aimed to reduce bottlenecks, improve turnaround time, and deliver more consistent results across all FDM operations.

THE RESULTS: 40% HIGHER THROUGHPUT, ZERO SCRAP, AND FASTER DELIVERY

The transition to automated support removal with the PostProcess BASE solution delivered immediate improvements in both throughput and part quality.

By reducing oversaturation and eliminating long drying times, Stratasys Direct **increased throughput by 40%**, allowing many parts to be processed and shipped the same day - something that was previously impossible using traditional dunk tanks.

The challenging PC part that once carried a 50% scrap rate was transformed into a fully successful application:

- Scrap rate improved from **50% to 0%**
- **100% successful processing** of delicate parts
- Eight parts processed simultaneously using custom fixturing
- **Improved profitability** for a previously unprofitable application

Beyond part quality improvements, the PostProcess BASE solution also increased efficiency, reduced lab space constraints, and improved overall workflow consistency across the facility.

> “With the BASE system, we reduced our scrap rate and our bottlenecks. Combined with its ease of use, we decided to **purchase a second unit.**”
> - Jeromy Knapp, Director of Operations for FDM, Stratasys Direct

According to a manufacturing engineer at Stratasys Direct, the BASE system delivered measurable operational improvements through reduced scrap, streamlined workflows, intuitive operation, and responsive support from PostProcess Technologies.

With the PostProcess BASE, Stratasys Direct transformed post-processing from a workflow bottleneck into a competitive advantage - proving that automated support removal can drive faster delivery, better part quality, and stronger operational efficiency.

About Stratasys Direct
Stratasys Direct is one of North America’s leading providers of additive manufacturing and advanced manufacturing services, delivering high-quality 3D printed parts, post-processing, and finishing solutions across a wide range of industries. As the contract manufacturing division of Stratasys, Stratasys Direct supports customers in aerospace, medical devices, automotive, consumer products, and industrial manufacturing with expertise across FDM, PolyJet, SLA, SLS, and metal additive manufacturing technologies. Learn more at stratasysdirect.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 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.