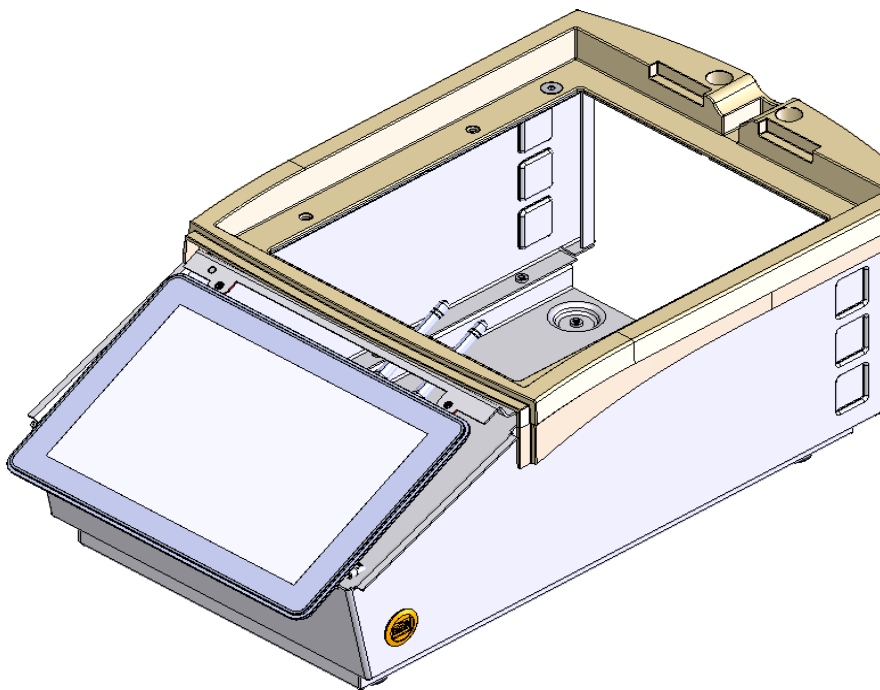


CASE STUDY:

From Additive Manufacturing to Injection Molding: Domaille's Fast-Tracked Product Launch with ADDMAN



Introduction

Domaille Fiber Optics, a leader in precision polishing equipment, needed to accelerate the development of their latest polisher machine, the APM-HDC-5400. They partnered with ADDMAN Group to:

- ① **Reduce Prototyping Time by 40%:** Accelerate design cycles with rapid, iterative prototyping.
- ② **Validate Designs with Precision:** Deliver high-quality prototypes for seamless form and fit testing.
- ③ **Enable Cost-Effective Manufacturing:** Transition effortlessly from prototype to production at scale.

The Challenge:

Iterative Prototypes

Building fiber optic polishing machines like the APM-HDC-5400 requires exceptional precision, efficient processes, and versatile materials. Domaille needed a partner who could rapidly deliver high-quality prototypes and ensure a seamless transition to full-scale production.

The Solution:

A Tailored Approach to Prototyping

Dinsmore's* advanced polymer 3D printing technologies enabled rapid iterations, helping Domaille refine designs without delays. Once finalized, the design transitioned smoothly to injection molding at HARBEC* for full-scale production.

Why Materials Matter in Prototyping:

- **Stereolithography (SLA) Clear Resin:** Enabled evaluation of form and fit with transparent components for internal inspections and complex geometries.
- **Multi Jet Fusion (MJF) Nylon Gray:** Provided robust, functional prototypes for rigorous testing and assembly validation.

*Dinsmore and HARBEC, part of the ADDMAN Group, operate as a comprehensive contract manufacturing service provider.

The Process:

A Comprehensive Journey from Initial Design to Full-Scale Production

Initial Design Review

Dinsmore's team engaged closely with Domaille engineers to thoroughly analyze the APM-HDC-5400's design specifications. This collaborative approach ensured a deep understanding of the machine's critical parameters and identified which components would benefit most from prototyping.

Material Selection

After reviewing the design, Dinsmore recommended SLA Clear Resin for its ability to simulate transparent components, enabling internal inspections and visualization. For more robust parts, MJF Nylon Gray was chosen to withstand functional testing and ensure durability.

Prototyping

Using their advanced additive manufacturing technologies, Dinsmore produced high-resolution 3D-printed prototypes in SLA Clear Resin and MJF Nylon Gray. Each iteration was tested and refined to meet strict form and fit requirements, ensuring optimal performance.

Feedback Loop

Dinsmore maintained an iterative feedback process with Domaille, incorporating their input after each prototype. This collaborative effort ensured that every detail of the APM-HDC-5400 was fine-tuned to meet precise specifications before finalizing the design.

Transition to Production

Once the design was finalized, Dinsmore facilitated a seamless transition to HARBEC for injection molding. This ensured efficient production workflows and maintained quality consistency, enabling the APM-HDC-5400 to move smoothly into full-scale manufacturing.

The Results:

- **Improved Design Confidence:** High-quality prototypes ensured seamless fit and function validation.
- **Cost Efficiency:** Reduced material waste and minimized costly rework.
- **Streamlined Production:** Enabled smooth transition to high-volume manufacturing.

For more information about ADDMAN's prototyping and production services, visit addmangroup.com

