



Corona lopper handle (left) and pruner prototype (right).

Priority Designs

Use Case – Pruner Prototype

Customer Profile

Priority Designs is a product development company based in Columbus, Ohio. With a cross-functional team and a passion for design, the company helps clients at every stage of the product development process, from initial research to high-quality prototypes. To help streamline their design processes, Priority Designs draws on the power of 3D printing.

Challenge

Corona Tools, a company specializing in lawn and garden tools, approached Priority Designs to help develop their new cutting tool line. The goal was an innovative product to help Corona stand out from its competitors.

Extensive research into common complaints about gardening tools revealed that most pruners on the market didn't fit the hands of core consumers. The team developed a pruner featuring a "Flex Dial," which allowed the consumer to adjust the grip to fit their hand. The project required extensive iterations to solidify form, fit and visual elements. The design also included graphics, multiple colors, and clear components, and required multiple prototypes to test for functionality and ergonomic comfort. Overall, the project involved a multi-week process, extensive manual labor including painting and decals, and significant costs.

Solution

After Priority Designs installed their new Stratasys J55™ 3D Printer, the team decided to verify the promised capabilities with an already-completed project: The Corona gardening pruners featuring the Flex Dial. They needed to understand the functionalities and limits of their new prototyping tool. The industrial design and design engineering team found that the J55 offered significant benefits to the product development process, including:

- Fast iterations for concept models
- Multimaterial capabilities for full color prototypes
- Excellent fidelity and accuracy allowing for printed graphics

Impact

The team found that the J55 was more than capable of creating fast prototypes, perfect for initial design verification. Full-color, accurate prototypes typically required a multi-step process, including sanding and cleanup, hand painting, and graphics application. With the J55, the team could go from CAD model to a full-color part in less than a day, with significantly less active labor.

For the pruners project, the J55 would have allowed several fundamental design aspects to be verified together immediately. Originally, the team relied on post-processing techniques like decals and hand-painting to create the necessary graphics on the pruner prototype. The full color, multimaterial capabilities of the J55 – including VeroClear™ material – allowed them to easily print a model with the graphic already incorporated.

“Originally, [developing this product] was a multi-week process with a lot of complexity, man hours, and costs,” said Ryan Berger, senior industrial designer at Priority Designs. With the capabilities of the J55, “all that can now be done overnight.”