



## CASE STUDY

### BUSINESS INITIATIVES:

Colder Products Company (CPC), founded in St. Paul, Minnesota in 1978, is a global provider and leader of quick disconnect couplings, fittings, and connectors for plastic tubing. They represent the fluid segment of their parent company, Dover Company. CPC designs and manufactures safe products and fluid systems in the following markets: life sciences, bioprocessing, thermal management, industrial, and chemical handling. CPC has produced over 10,500 custom and standard products to meet the fluid handling challenges of these industries worldwide.

### BUSINESS CHALLENGES:

CPC understands the importance of custom manufacturing designs to meet customer needs. The need for custom parts can make design reviews a challenge. CPC knew the impact that physical prototypes have and how they could increase customer confidence in their designs.

Their options for producing a physical prototype were limited: a steep-priced PolyJet 3D printer used to print design prototypes in-house or outsourcing the prototypes to external vendors. Using a single in-house PolyJet was inefficient due to frequent repairs and maintenance and the difficulty of servicing and cleaning the machine.



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When outsourcing prototypes, it could take weeks to get a single part shipped.

Patrick Gerst, Vice President of Engineering at CPC, stated, “Our products are handled by people with their hands. The ergonomics of what it feels like when you connect and disconnect our product are all important parts of our brand and features. It’s all about getting customer feedback quickly. Being able to prototype has been a huge selling tool for us on the custom side of our business.”

When using the in-house PolyJet or outsourcing the prototype wasn’t an option, the engineers relied on 3D-rendered computer-aided design (CAD) models to present concepts and receive feedback early on through web meetings. It was a challenge for CPC to convey the size and scale of their designs to their customers behind a computer screen. The need for reduced design cycle time, a more cost-efficient solution, and an accurate portrayal of their concepts and designs was crucial for a better development process and higher customer satisfaction.

## SOLUTIONS:

CPC knew that physical prototypes played a critical role in their development process and customer satisfaction. Jeff Martin, an Applications Engineer at CPC, stated,

“Being able to get prototypes in customers hands helps keep their interests piqued. The Form 2 printer allows CPC’s engineers to get a physical prototype in their hands 80-97% faster than if they were to outsource to a service bureau. It just keeps the excitement level there.”

The mission was to find an affordable 3D printer that required little maintenance and delivered fast turnaround for their increasing requests for customized parts.

CPC compared and evaluated quality and cost of 3D printers from nationwide and local manufacturers. EAC Product Development Solutions, a local value-added commercial Formlabs reseller, worked with CPC to showcase the Form 2 and its outstanding print capabilities. Martin says, “We evaluated everything from the really large, expensive industrial machines that were over \$100,000 to desktop 3D printers. We found that the Form 2 could print the parts equivalently for our needs.”

**“We’re all about iterating and prototyping quickly to learn as much as we can with each iteration.**

**Having multiple in-house Form 2 printers has really helped us accelerate our design time. I don’t think that I’ve ever walked into our design lab and seen all three sitting idle. They run all the time. Now we present prototypes more frequently to customers than we used to.”**

**-Patrick Gerst, VP of Engineering**

## THE RESULT?

The Form 2 is a revolutionary stereolithography (SLA) desktop 3D printer used to create models, prototypes, and production parts. The 3D printer has the capability to print at high resolution which allows small, detailed features to be generated with precision – which is exactly what CPC needs for its manufactured parts. The Form 2 is priced as low as \$3,499. The affordability of the 3D printer allowed CPC to purchase three Form 2 printers from EAC within 18 months. Purchasing three Form 2’s was \$85,000 less than one large industrial printer.

Gerst says, “It was more expensive to maintain our PolyJet than to just buy a few Form 2 printers. If we had a service call, it would cost us a few thousand dollars... It made sense to start going towards these machines.” Compared to the use of one PolyJet, the three Form 2 printers provides a 100% uptime because there is always at least one printer available for a project at all times.

Before the adoption of the Form 2, outsourcing parts slowed down the early design stages for each project. One of their engineers said, “When we only had external resources making us parts, it used to be a rarity that we would buy 3D printed parts. Once a month we would buy some parts at the end of a design cycle and we would have to wait at least a week before we would have anything.”

The Form 2 printer allows CPC’s engineers to get a physical prototype in their hands 80-97% faster than if they were to outsource to a service bureau.

With all three printers running continuously, the Form 2 reduces CPC’s design iteration time by up to 80%. Overall, customer satisfaction rates increased due to quick turnaround time for printed parts from the Form 2 SLA desktop 3D printer.