

HellermannTyton Leverages 3D Printing for Cost and Time Efficiency

OVERVIEW

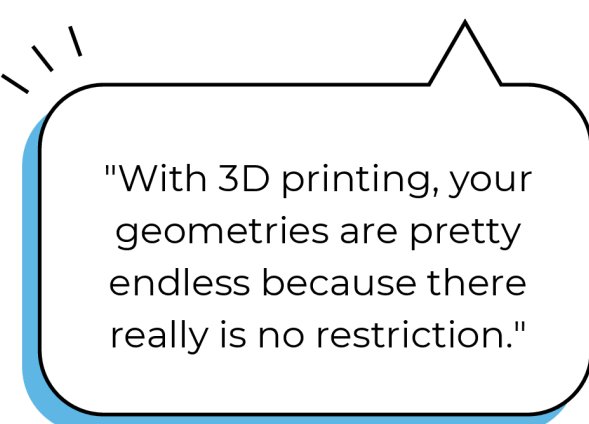
Amy Vasey, an Automation Design Engineer, has worked at HellermannTyton for over 20 years, where she recently introduced 3D printing to the Automation department. While the product development group at HellermannTyton was familiar with additive manufacturing, Amy's team had little to no experience with the technology. The product development team encouraged Amy's group to consider 3D printing as an alternative to their traditional aluminum parts. Despite initial hesitation and unfamiliarity with the technology, Amy and her team took a leap by starting small and exploring its potential.



CHALLENGES

HellermannTyton's Automation team faced a steep learning curve when integrating 3D printing into their manufacturing processes. Early on, Amy's team had to convince management that 3D-printed parts would be durable and cost-effective. They also needed to shift the mindset of the assembly group and shop floor, which relied on traditional machined aluminum parts. Their initial goal was to acquire a 3D printer for under \$10,000 and justify the investment through time and cost savings.

Despite early mistakes and failed parts, Amy's team remained determined. "We had our oopsies," Amy said. "We thought, 'Why are we doing this? Let's just go back to aluminum. It works.' But those failures taught us that we could do it." These challenges fueled their persistence in proving that 3D printing was a viable solution.



"With 3D printing, your geometries are pretty endless because there really is no restriction."

*Amy Vasey, Automation Design Engineer
HellermannTyton*

HellermannTyton

SOLUTION

The Automation team's first breakthrough came with an application for a deflector part, which traditionally cost \$195 to machine and took 2-4 weeks to produce. By utilizing 3D printing, they reduced the cost to just 81 cents and had the part in hand in less than 4 hours. This marked a significant cost and time reduction, allowing them to print complex geometries that would have been difficult and expensive to machine.

The team further optimized their approach by consolidating multiple parts into a single 3D-printed component, reducing the need for machining even further.

Recognizing the potential, HellermannTyton evaluated Markforged's capabilities. Initially outsourcing some 3D-printed parts, the team later invested in their own Markforged X7 printer. This purchase revolutionized their workflow, cutting the lead time for an end-of-arm tool from **42 days to 3-4 days**, and slashing the cost from **\$28,000 to \$732**.

RESULTS

With the implementation of 3D printing, HellermannTyton achieved the following:

1 **Dramatic Cost and Time Savings**

- A machined part costing \$195 and taking weeks to manufacture was replaced with a 3D-printed version costing 81 cents and taking less than 4 hours.
- A complex end-of-arm tool, previously costing \$28,000 to machine, was reduced to \$732 with additive manufacturing. The production timeline shrank from 42 days to 3-4 days.

2 **Increased Design Flexibility**

- 3D printing enabled the team to produce parts with complex geometries that would have been impossible or costly to machine. By consolidating multiple parts into a single piece, they further streamlined their manufacturing process.

3 **Reduced Robot Size & Cycle Times**

- The weight of the 3D-printed end-of-arm tools was reduced by 5 pounds, allowing the team to use smaller robots and reduce cycle times. The lighter weight also improved the robots' vertical and horizontal travel speeds, further boosting production efficiency.

4 **Minimized Downtime and Streamlined Engineering & Assembly**

- Additive manufacturing reduced downtime on the production floor by allowing quick part replacements. If a robot component failed, the team could print a new part in a matter of hours, keeping operations running smoothly.
- The ability to print intricate geometries reduced engineering time and simplified assembly, cutting down on hours spent figuring out how to machine complex parts.

LONG TERM IMPACT

In just two years, HellermannTyton's Automation team progressed from having no experience in 3D printing to using the technology for production-ready end-of-arm tools with a substantial return on investment (ROI). The team continues to explore new applications, with 80-85% of their end-of-arm tools now incorporating 3D-printed components. While some metal parts are still used for rigidity, the majority of the tooling is printed, offering continuous cost and time savings.



PARTNERSHIP WITH GSC

Throughout their journey, HellermannTyton relied on GSC as a valuable resource for additive manufacturing support. "I think having a resource like GSC, who we could go to and say, 'We're not really sure, but can you check and see? Can you help us?' was a lifesaver," Amy commented. GSC's expertise helped the Automation team stay the course and realize the full potential of 3D printing.

CONCLUSION

HellermannTyton's successful integration of 3D printing into their Automation department has transformed their production process. The use of a Markforged X7 printer allowed them to reduce costs, accelerate production times, and improve flexibility in part design. With a combination of additive manufacturing and traditional machining, the team continues to push the boundaries of what's possible, demonstrating the long-term benefits of 3D printing in manufacturing.