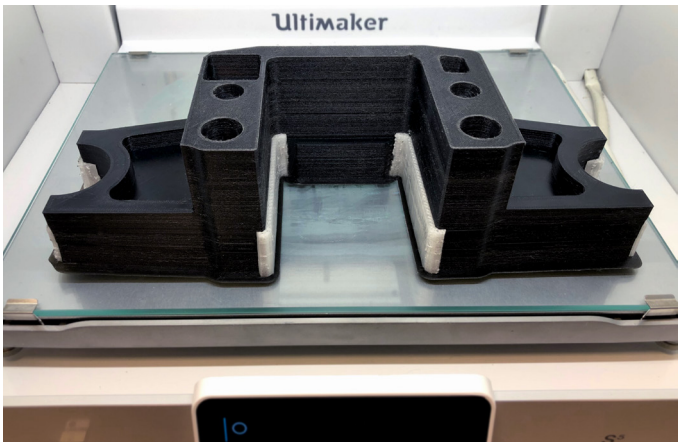
Ultimaker

Reducing costs and improving efficiency with the Ultimaker S5



"The Ultimaker S5 offered the best value, with the size and materials we needed to print all the parts. It added new capability to another 3D printer that we had purchased last year, with lower costs for low volume parts and improved manufacturing efficiency."

— **Kathryn Jones,**
IMI Graduate Engineer

After running a trial, IMI Precision Engineering discovered how the Ultimaker S5 can save them time and money while improving manufacturing efficiency.

Company
IMI Precision Engineering

Industry
Fluid control technology, Engineering

Challenge
IMI Graduate Engineer Kathryn Jones saw that IMI Precision Engineering needed a new technique in additive manufacturing which would allow the team to create parts with unique geometries, while also saving money and time.

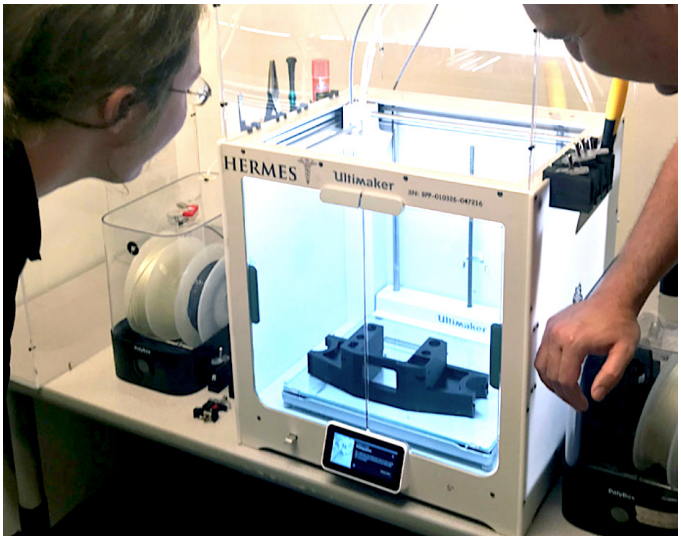
Solution
After researching and evaluating 141 3D printers and 70 materials, Kathryn determined that the Ultimaker S5 offered the best value and the right materials they needed to print all of their custom parts.

Results
- Reduced costs for low-volume parts
- Design freedom for faster iterations
- Enhanced manufacturing efficiency
- Greater control over product weight

IMI Precision Engineering - Introduction
IMI Precision Engineering, a world leader in motion and fluid control technologies, is an extension of IMI plc with a service network that reaches 50 different countries. Their global manufacturing capabilities and technology centers develop and test products designed to reduce downtime, lower energy consumption, and enhance performance on production lines. When it comes to tackling engineering problems, the team at IMI Precision Engineering understands the importance of implementing new tools and strategies that save money and time without losing design freedom.

With their production process weighed down by traditional methods, IMI Graduate Engineer Kathryn Jones found that the team was spending about 1,200 hours every year manually machining 1,970 low volume pieces of 18 parts made of Nylon and Delrin. These parts include end caps, coil bobbins, saddles, spring keys, and more, each of which are essential components for the products they manufacture and deliver to their global service network. As their 3D printer wasn't meeting their production needs, Kathryn set out to find a less expensive 3D printing option with even more capabilities.

The ability to 3D print parts allows the IMI Precision Engineering team to redesign products for faster production using the Ultimaker S5.

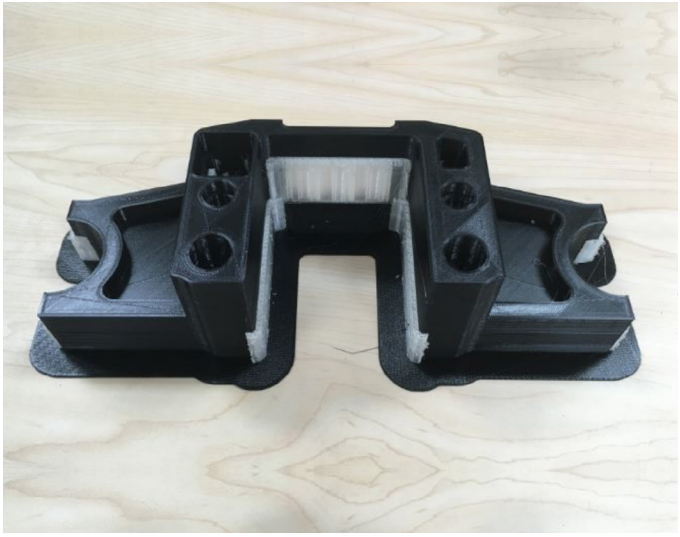


With the Ultimaker S5 in-house, IMI Precision Engineering saves thousands of dollars on low-volume parts, while also saving hours on production time.

Challenge
The IMI Precision Engineering team relied on a costly manual machining processes. They spent thousands of dollars machining parts every year, and were wasting time on production that could otherwise be spent on the design process. Additionally, their 3D printer was lacking production features they needed.

Solution
Kathryn researched 138 machined parts and selected 18 for a 3D printing trial. She surveyed 141 3D printers for their capabilities and reliability, as well as 70 different materials, ultimately comparing Ultimaker to a leading SLA 3D printer. Kathryn found that the Ultimaker S5 offered the best value and time savings.

Results
Kathryn says, *"The total operator time spent 3D printing those 18 parts is 52 hours per year, saving 1,918 hours. Additionally, the total cost of printing these parts is $3,653, which saves $17,747 per year. Because of these savings, we were able to see a return on investment for the Ultimaker S5 in just four months."*



The ability to design and 3D print parts means they can control infill densities and wall thickness for control over part mass and weight.

Cost comparison

	Parts per year	Traditional machining	3D printing (Ultimaker S5)	Anual cost savings
Spring Key (Tough PLA)	721	$3,118	$872	$2,246
Saddle (Nylon and Breakaway)	8	$6,296	$674	$5,623
Endcaps (TPU 95A)	22	$486	$99	$387

About Ultimaker
Since 2011, Ultimaker has built an open and easy-to-use solution of 3D printers, software, and materials that enable professional designers and engineers to innovate every day. Today, Ultimaker is the market leader in desktop 3D printing. From offices in the Netherlands, New York, Boston, and Singapore – plus production facilities in Europe and the US – its global team of over 400 employees work together to accelerate the world's transition to local, digital manufacturing.

General inquiries: info@ultimaker.com
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