

Cost-efficient, functional prototypes for small bore motorcycle parts



"3D printing on Ultimaker mitigates risk, and opens the door to creating working concepts on extremely low investment. Long gone are the days of spending thousands of dollars running multiple prototypes through traditional CNC machining methods. When we take a design to the machine shop, we know before we start that it's a fully functional design meeting our standards."

— Greg Hatcher, Owner of MNNTHBX

MNNTHBX uses Ultimaker to save time and money on prototypes, increasing design flexibility and improving product testing phases.

MNNTHBX

Company
MNNTHBX

Industry
Small bore motorcycle

Challenge
MNNTHBX faced obstacles in time and cost when prototyping innovative products for small bore motorcycles. Outsourcing to CNC mills cost the team thousands of dollars and several days to complete, which reduced the amount of time they had for product testing and design customization.

Solution
With the Ultimaker, they were able to produce custom prototypes quickly and efficiently with 90% cost savings in raw materials. The parts were sturdy enough for product testing on motorcycles and allowed for flexible, creative thinking during the design process that outsourcing would otherwise bottleneck.

Results

- Customizable parts for design flexibility
- 90% cost savings on raw materials
- Design freedom for fewer iterations
- Product testing with usable parts

MNNTHBX - Introduction
MNNTHBX (Man in the Box) designs and manufactures innovative products for the small bore motorcycle industry. They often produce customized parts that are the first of their kind, unique to enthusiasts interested in tailoring their motorcycles to individual preference. Traditionally, they relied on CNC mills to produce their prototypes for design and testing without much room for modification.

With the introduction of 3D printing into their process, they not only saved money, but found the freedom to test functional prototypes in-house and redesign quickly without spending thousands of dollars. Switching from aluminum to 3D printed PLA for prototyping resulted in immediate and valuable cost savings, convincing the MNNTHBX team that Ultimaker was the best option for their prototyping and design needs. Today, hand-drawn designs are turned into STL files for testing and redesign on Ultimaker, then sent out for CNC production once perfected.

Challenge

The most significant challenges for MNNTHBX were saving money on prototyping. Product materials like aluminum were costly and time-consuming to redesign when outsourcing to CNC mills. With a customer base relying heavily on custom, unique parts for their motorcycles, it was essential that the MNNTHBX team had an alternative solution that allowed for quick and efficient design testing of functional prototypes—without breaking their budget.

Solution

MNNTHBX spent a year contemplating which 3D printer to purchase. They chose Ultimaker in April of 2016, impressed with the ease of use and reliability. The Ultimaker offering was the best fit for their goals of saving money and having design freedom at their fingertips. Dependability and accuracy were also key aspects that drove their decision to purchase an Ultimaker 2+ for their prototyping process; a conclusion that brought their production time down from 75 hours at a CNC mill to about 12 hours per part on Ultimaker.

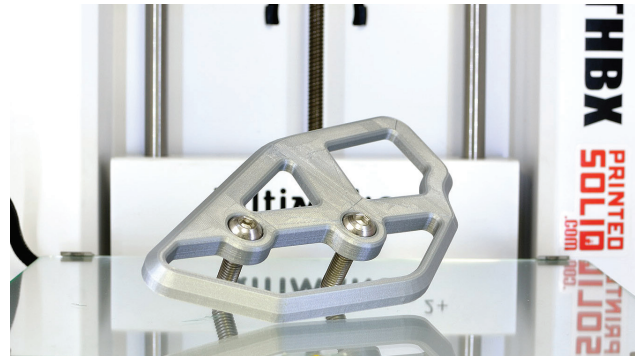
Results

Owner Greg Hatcher states, “The simple truth is that our return on investment was nearly instant. Our printer basically paid for itself the first time we saw a product through prototyping. Being that we prototype roughly 15 products annually, the costs savings become apparent.” Not only were they able to reduce raw materials costs by 90%, but they save thousands by prototyping in-house before sending parts out for CNC production. The time they save is invaluable for product testing and made possible by the reliable, customizable nature of 3D printing.

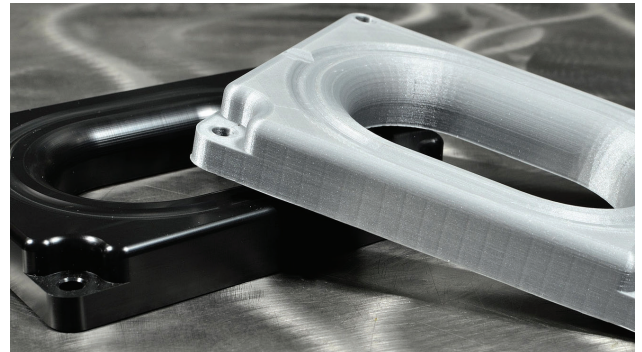
Costs

New designs now bypass all traditional stages of ordering and delivery, saving money and time in the process. The reliability and consistency of the print quality means there’s very little waste. Greater flexibility enables the team to innovate more freely and this boosts company profits.

	Ultimaker 3D printer	External CNC supplier
Costs	\$200 per part, including man hours and material	\$1,500 - \$2,500 per part, including man hours and material
Time	12 hours per part	1 week per part
Iterations	1-5 iterations per part	5-10 iterations per part



The ability to test custom designs that are otherwise too financially risky to outsource allows MNNTHBX to more efficiently discover the best option for production.



Using Ultimaker replaces 75 hours of machine time from traditional methods and saves the team 90% on raw materials by swapping aluminum for PLA.



The capability to mount PLA prints directly onto motorcycles for thorough testing of tight tolerances and custom parts eliminates risk of design failure.

About Ultimaker

Since 2011, Ultimaker has grown to become a leading brand, creating accessible, professional desktop 3D printers. The company has offices in the Netherlands, New York, and Boston, with production facilities in both the U.S. and Europe. With a growing team of over 200 employees, plus over 24,000 active community members, Ultimaker strives to deliver the highest-quality 3D printers, software and materials, without compromise.

General inquiries: info@ultimaker.com

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