

Manufacturing high-quality parts for high-performing robots

On the surface, [Cobalt Robotics](#) is a company that produces security robots - the kind of robots that make spaces safer, more secure and more productive. But, according to Alejandro Ramirez, Lead Mechanical Engineer at Cobalt, the company's true end product is much more than that.

"Our mission is to make robots that are useful to society. To do that, we need to ensure that every human interaction with our robot is not only useful to society, but positive," said Ramirez. "Our goal is to move toward a harmonious relationship between machines and humans."



To achieve this vision, Cobalt created a very reliable robot that could augment the work of humans in security, rather than replace it. Cobalt's robots are purposefully designed to not appear humanoid, but because the robot operates in spaces where humans work and live, it was important that the machine still exude an approachability and warmth that would make people feel comfortable interacting with it.

Making a robot seem approachable means that special attention had to be paid to the cosmetic components of the machine - which are the external parts that humans will see and interact with. It was important to Cobalt that the cosmetic plating was made exactly to their design specifications, so they partnered with Fast Radius to manufacture these critical parts using urethane casting. Throughout this process, three key benefits were realized when working with Fast Radius:

- ① Dedicated service from manufacturing experts
- ② Commitment to quality
- ③ Logistics made easy

Dedicated service from manufacturing experts

Manufacturing a business advantage

Thanks to Fast Radius, Cobalt was able to save:

62% on the cost of urethane casting

33% on the cost of 3D printing

90% on the cost of painting and finishing

7% on overall robot production

The robotics industry moves at an incredibly fast pace, and design decisions and rapid iterations are constantly at play. Ramirez said that Fast Radius met Cobalt's need for speed and agility by providing really fast response times and ongoing communication, and advanced manufacturing expertise across different processes.

The expertise was handy when it came to fixing production errors. Prior to working with Fast Radius, Cobalt struggled to find a cost-effective supplier that could deliver on the exact specifications of the product. Fast Radius advised that new CNC master patterns would be more accurate than Cobalt's original FDM ones - because of this, previous fitment issues were resolved and the team was able to come up with a better, more cost-effective way of producing cast urethane molds for the parts.

According to Ramirez, "Fast Radius reduced our cost to manufacture urethane parts by 62 percent, painting and finishing by 90 percent, and 3D printing by 33 percent." The savings led to an overall 7 percent cost reduction in producing the robot."



Commitment to quality

The cosmetic plating was such a critical part of helping Cobalt create an experience that would be seamless and inviting for the people interacting with the security robots. Because of this, the quality considerations were twofold: the parts had to be strong and reliable, but they also had to meet high aesthetic standards. From the start, Fast Radius recognized how important quality was to Cobalt, so the team was willing to go through multiple rounds of sample production and feedback in order to get the job done right.

Part of Fast Radius's collaboration with Cobalt involved manufacturing plastic mounts meant to house directional technology and three-dimensional depth sensors. Due to the precision, quality, and accuracy requirements of these manufactured parts, Fast Radius enabled Cobalt's robots to safely navigate dynamic human environments encouraging positive human/machine interaction - a part of Cobalt's core mission. In the end, Ramirez reported that Fast Radius consistently met or exceeded Cobalt's quality requirement of a 95 percent component yield.

Logistics made easy

According to Ramirez, one of the biggest benefits of working with Fast Radius was the true end-to-end service provided. Fast Radius was helpful in troubleshooting manufacturing issues, but they were especially helpful when it came to managing the logistics of the project. Parts were shipped quickly and easily across the globe thanks to [Fast Radius's partnership with UPS](#).

"Having the Fast Radius team manage all of the logistics was a huge help to my team," said Ramirez. "We saved about two weeks in overall project time per part produced by allowing Fast Radius to handle those facets of the project, allowing my team to focus on technical aspects."

Get more production efficiencies with Fast Radius

From design all the way through to logistics, the Fast Radius team always aims to create value beyond an initial transaction. Creating partnerships and growing together with a company represents how we plan to serve as a factory of the future. If you are looking to collaborate with us, or explore your possibilities, [contact our team today](#).

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- Alejandro Ramirez,
Lead Mechanical
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Robotics