FAST RADIUS × simbe

Making autonomous inventory possible

Simbe Robotics needed a low-cost option to manufacture small batches of critical parts for their Tally 3.0 autonomous retail intelligence robot. Rigorous quality standards and a consultative approach made Fast Radius the right manufacturing partner to bring Tally 3.0 robots into store aisles around the world.

THE CHALLENGE

Industrial-grade parts for an agile startup

Simbe deploys Tally 3.0 robots to autonomously scan retail store aisles to take inventory and identify out-of-stock products. By connecting directly with the store's inventory management system to identify products that could be restocked, Tally robots create operational efficiencies and improve customer experience. The robots have to be aesthetically pleasing and durable enough to weather their surroundings, as they interact with customers, shopping carts, pallets, and more.

Initial prototypes of the robots were made with CNC machining, but as Simbe looked to scale, they came to Fast Radius to find a more cost-efficient manufacturing process for their plastic parts. Tooling for injection molding parts was too costly for their small batch sizes and would have made further iterations and improvements expensive. Fast Radius helped Simbe choose urethane casting for the majority of parts, decreasing cost-per-part for small volumes and allowing them to retain the flexibility to make changes easily.

Fast Radius' expert team has developed repeatable processes to ensure Tally 3.0 cast urethane parts meet rigorous quality standards. Plus, as an experienced multi-process manufacturer, Fast Radius has been able to help Simbe navigate and adapt part designs as needed. Some parts have required different manufacturing processes, like CNC machining for parts too small for urethane casting, and Fast Radius has worked consultatively to determine the right process for each part and to ensure parts match aesthetically through a mixture of adhesive, silk screen printing, and painting in post-processing.

Simbe Robotics, an advanced retail intelligence company, was ready to launch their Tally 3.0 robots into stores but wasn't ready for the expense of injection molding tooling. Fast Radius helped them find a cost-effective alternative that would allow them to scale.

MAKING IT POSSIBLE

Reliable results from flexible low-volume manufacturing




Consultative material selection

Fast Radius' engineers initially matched a polyurethane to the material properties Simbe needed for manufacturing. After field testing robots, Simbe wanted to evaluate other materials that could be more resistant to wear and tear. Fast Radius provided a full analysis of current materials and alternative options to enable Simbe to make the best decision based on material cost, material performance, and how alternative materials would change the production process.

An agile partnership

As Simbe's designs have evolved and supply chain shortages have impacted procurement for robotics equipment, they've needed an agile manufacturing partner to help them adapt. Specifically, when supply chain issues meant Simbe had to switch the camera used in Tally 3.0, Fast Radius helped them modify designs around the new camera, manufacturing parts in low volumes to adapt quickly without waste.

Consistent, reliable quality

The most important quality factors for Tally 3.0 are dimensional tolerancing, appearance, and durability. While urethane casting can't typically achieve the tight tolerances of injection molding, Fast Radius has refined materials, designs, and processes to ensure that Simbe's cast urethane parts meet specifications. With rigorous attention to detail and fit tests for parts, assembly of Tally 3.0 robots always goes smoothly.

Budget-friendly manufacturing

BOM cost is a critical factor for Simbe Robotics. Over the course of their partnership, Fast Radius has helped Simbe improve quality while reducing costs by evaluating design, material options, batch size, and more. Fast Radius and Simbe have worked together to determine favorable payment terms and manufacture low volumes as needed to manage expenses while scaling production of Tally 3.0.

THE RESULTS

Quality and savings through small-batch manufacturing

100+

Tally 3.0 robots

deployed

100%

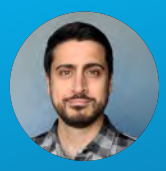
of cast urethane parts

made by Fast Radius

$30,000

saved

in engineering costs



As a growing start-up, we need to be able to manufacture our products with the quality and economics of high-volume production while staying agile and building in small batches. With Fast Radius, we've dialed in the low-cost, high-quality manufacturing we need to make that happen.

Owen Davies
Director of Hardware Engineering

simbe