AGILITY Engineering & Manufacturing Solutions

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CASE STUDY

3-D Printing Solution Adds Value and Decreases Assembly Costs for Vehicle Manufacturer

INDUSTRY:
On-Road Transportation

APPLICATION:
Auxiliary Power

PRODUCT:
Electrical Sub-assembly

Background

Value-added services make it possible to complete projects faster and more affordably. For years, Agility EMS has customized products and services for our customers. Our sales and engineering teams work closely with our customers' design and engineering teams to provide solutions that meet their specific needs and reduce their sourcing costs.

Recently, a long-time customer came to Agility EMS looking for assistance. The vehicle manufacturer had turned to Agility EMS for value-added engineering solutions in the past and includes the Agility team on their list of preferred vendors. Their business was growing, and they needed more engineering and manufacturing capacity for additional product lines. Early in the process, they partnered with Agility EMS to create a low-cost, simple small components panel that would be installed in their popular line of recreational vehicles.

Challenge

When the customer approached Agility EMS, they were in the concept phase of development of the small components panel, with a 2-D design already mocked up. The component would house a push-button circuit breaker and a rocker switch and installed in the cab of the company's recreational vehicles. The switches would connect to a vehicle's generator, so drivers could turn on their auxiliary power as they pull up to their campsites. The housing needed to be durable, easy to install, and affordable to manufacture.

CASE STUDY

Solution

The Agility EMS team went to work, using our 3-D printing capabilities to transform the 2-D drawing into a 3-D prototype. Working with our vendor partners, we immediately acquired two sample switches to test with the model. Then, we overnighted the entire prototype to the customer for testing.

During the testing phase, engineers discovered mechanics could accidentally flip the switches while working on a vehicle. The Agility EMS team created a new prototype with a small tab that prevented the switches from being flipped unintentionally. With our workable prototype, the customer was able to fully test the part before it went into production, saving them time and money in the long run.

With the prototype approved, the component was able to go into full production, with a potential of 10,000 or more assemblies manufactured in a year. Agility EMS sourced all parts through our distribution partners to find affordable, effective solutions.

The Agility EMS team went the extra mile for the customer by building the sub-assembly in-house, which allowed us to consolidate shipment and kit the parts so the customer's technicians could seamlessly place the entire assembly into their machine. By doing this, we decreased overall build time and warehouse space, allowing the vehicle manufacturer more time to innovate and find new business.

Result

Utilizing rapid prototyping with Agility EMS, the vehicle manufacturer reduced the concept phase of their component design by three weeks. 3D printing capability allowed for the rapid redesign of a guard making a rocker switch less prone to accidental engagement. Also, due to our relationships with distribution partners, the customer now enjoys a 16 percent material cost reduction. Since Agility EMS builds the sub-assembly and has Finished Goods inventory, our customer enjoys a sub assembly that has the logistics of a single distribution part. "Our Partnership has allowed us to move past the design for manufacturing phase and allows us time to us innovate our newest ideas," said the head of engineering at the vehicle manufacturer.

Learn more about Agility EMS's comprehensive value-added engineering services and put our expertise and experience to work for you.

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