

Case Study

Battery Processing System

Overview

The client had a new, innovative lead acid battery design that incorporated significantly different components than a traditional lead acid battery. The uniqueness of this design required that new manufacturing methods be developed to build this product.

Project Information

- Product: Lead Acid Battery Plates
 - Industry: Energy / Automotive / Transportation
 - Key Technologies: Liquid and Powder dispensing and mixing, Dipping, Robotics, Continuous Motion, Material Drying, Ultrasonics, Liquid level control
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Background Information

- When Belcan's Automation Group was contacted, the manufacturing process was still lab based and very low volume
 - In order to manufacture this product at high volumes and consistency, new, creative processes had to be applied
 - This startup company did not have the engineering or manufacturing staff required to quickly launch the development effort needed to create the manufacturing systems that were required
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Belcan Automation Approach

- Since this was a completely new product that had only been made in a lab environment, it was determined that a disciplined phased approach needed to be implemented
- The plan that Belcan put before the client included the following:
 - Conduct a rigorous requirements definition phase
 - Generate concepts that meet the program / product requirements
 - Identify proof of principle projects to test processes and technologies and reduce the risk of building a capital intense manufacturing system

Solution

- A phased approach was implemented
 - Belcan's technical team worked with the client's product, manufacturing, and management team to conduct a rigorous requirements definition session. The results of which were used to create process concepts.
 - Belcan designed and built a proof of principle system that allowed the client to test a unique technology for this application and develop the manufacturing process parameters
 - In parallel to the process development phase, Belcan proceeded to design and build the high speed manufacturing system, based on the results of the requirements definition work
 - Throughout the entire process, Belcan and the client were in close communication, sharing progress with each other on the design and the process development work
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Benefits to Client

- The client was able to quickly supplement its technical product development staff with an experienced engineering team capable of supplying practical ideas to manufacture their unique product
 - The requirements definition phase enabled the team to quickly select the technologies with the highest probability of success to test and develop the manufacturing process around
 - By parallel processing the efforts of process development and system design and build, the entire equipment development cycle was reduced
 - The resultant production system significantly increased the manufacturing capacity of the client
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28999 Aurora Road • Solon, OH 44139 • Office: (440) 349-5200

www.BelcanAutomation.com

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