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| 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. |

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| 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 |

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| 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 the 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 |

