

BUILDING A PROCESS FACILITY FROM SCRATCH



Jack Daniel's Distillery:
A Cross Company Case Study



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FLEXIBLE BATCH PROCESSING AND SYSTEMS INTEGRATION

Jack Daniel's is a storied distillery with a popular and well known history and their product is widely appreciated as a reliable and quality whiskey. The company's traditional distilling process - known as "Jack's Way" - is a critical component to their business success. Product demand required that Jack Daniel's operate at full capacity, prompting expansion plans.

There was no room for additional expansion within the confines of the original distillery, so new facility plans were created. Still located on the Jack Daniel's Lynchburg, TN campus, **the new facility would be state-of-the-art, scalable, and fully automated - all while preserving the existing operating philosophies and tradition at the heart of the Jack Daniel's brand.**

The Jack Daniel's team selected Cross Company as their partner and primary integrator for design and controls of the new facility. Developing an official common goal and vision was a significant project requirement for both parties because building a large-scale upgraded facility presents numerous documentation and communication needs. Cross Company has a strong knowledge of the Jack Daniel's process as well as a unique collaborative relationship built over many years of working together.

"It's your house. You live in it. You know what you want out of it. We'll get you where you need to be." ~ Richard Consoli, President of Cross Company Integrated Systems Group

Cross Company employs a consultative approach to projects, which allowed Jack Daniel's to move at the pace most comfortable to them. By laying the groundwork early, projects can conclude in a more natural, desirable way.

CROSS COMPANY VALUE

The development of a new distillery required a complete design and build of the automation system. This includes determining the control system platform, exploring new hardware and software solutions, I/O panel design and build, design specification generation, and program and graphic development.



It is impossible to understate how important it was for Jack Daniel's to maintain their current operating philosophies and brand integrity while creating a seamless transition for facility operators to transition to a new, more automated environment. This required focus and dedication to customer service, communication, and planning.

Cross Company specializes in communication and document development. We have several associates adept at writing technical documents that can

be understood by people of various backgrounds, irrespective to programming knowledge. For this project, we brought an extensive knowledge of industrial processes (including fermentation and distillation), process controls (loop tuning, panel design and build, strategic device placement and utilization, P&ID development), batch process design and programming, and device commissioning. The Jack Daniel's team utilized this knowledge to make decisions on their new control system functionality and trusted our input throughout the entire process because of our diverse skillset and breadth of experience.

Process control work includes loop tuning, panel design and build, strategic device placement and utilization, P&ID development, and control system program design and development.

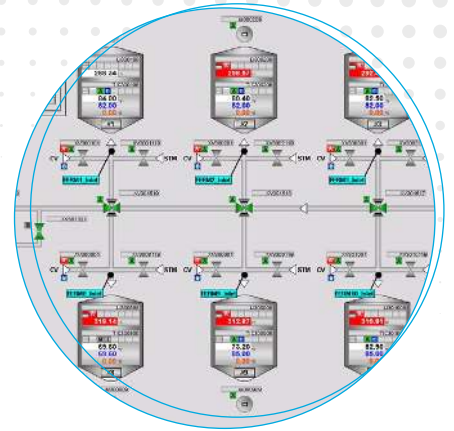
The planning for new whiskey recipes required the controls system be built with flexibility in their grain bills, mash quantities, and temperature controls, necessitating a knowledge of batch process programming. Furthermore, they needed to manage the transfer of varying material effectively, efficiently, and with future plans in mind. A short term concern was how added flexibility and a new controls system would impact their operators' ability to do their job as they currently did it. We had to consider this when designing and implementing their program.

Our expertise in the batch process design from a programming perspective brought about a vast improvement in the flexibility that they were used to. We designed their Equipment Modules (effectively sequences) to be very flexible. This allowed them to be utilized effectively in the batch programming and also be useful for an operator when doing manual operations.



We utilized SIMATIC Batch programming to develop several recipes for making whiskey and for cleaning processes. Within the recipes, we also used SIMATIC Route Control for material transfer. Each of which were designed and programmed for expansion, flexibility, and scalability. Jack Daniel's uses Siemens software, so this is a critical feature which makes their process more efficient and operator friendly while also increasing the flexibility. Our associates are knowledgeable in batch programming and the standards to follow while doing so.

The utilization of Batch/Route Control vastly improved operator capabilities. Cross Company also simplified the operator's job by developing graphics that accurately depicted the P&IDs (and their field piping) so they were easy to follow and adding additional graphical notes that would help bring new operators up to speed when learning Batch and Route Control.



COLLABORATION IS KEY

Our relationship as Jack Daniel's integrator remains ongoing and we are proud of our work and for our customer's success. We were able to effectively communicate our programming style, plans, and strategies to a variety of audiences within their company. This came through many formats, including verbal discussions regarding the process, well-defined and easily understood documentation, and hands-on training sessions with facility operators.

While all were important factors, the documentation and hands-on training were vital to the project's success and the quick adaptation to the new control system.

Upon the completion of the project, the Jack Daniel's team received an assurance of support whenever needed, in case of a complication or question.



Cross Company is always available for on-site support, but in many cases, this is not needed. Most customers opt for secure remote access to our engineers, who then guide them through specific questions as needed.

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