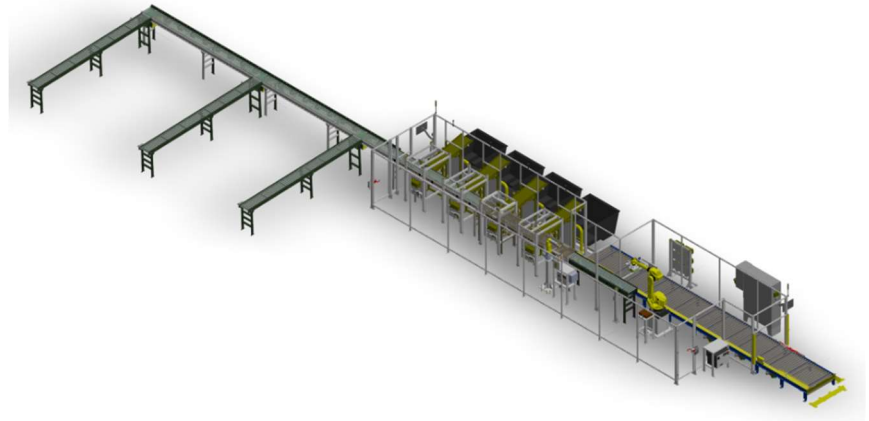


Depalletizing and Unboxing Line

Overview

Even Automation was approached by a customer who needed an efficient solution for depalletizing and unboxing battery cells. The customer's previous process involved manual labor, and they required a system that could handle the high volume of battery cells while maintaining a quick cycle time. Additionally, the automation cell needed to seamlessly integrate with their existing equipment, ensuring a smooth transition in their production line.



Key Challenges

Several challenges needed to be addressed to meet the customer's requirements:

1. **Quick Cycle Time:** Achieving a cycle time of 10 seconds per box presented a significant challenge. The automation system needed to perform precise movements swiftly and reliably to maintain high throughput.
2. **Integration with Existing Equipment:** The automation cell had to seamlessly integrate with the customer's existing equipment, ensuring compatibility and minimal disruption to their production line. Careful coordination and collaboration were necessary to ensure a smooth transition.

QUICK FACTS

Industry: Custom Battery Manufacturer

Technology: Robotics, 2D Vision System, Depalletizing, Custom Mechanical Design

Volume Requirement: 700,000 per year

Previous Cycle Time: 50 sec/box

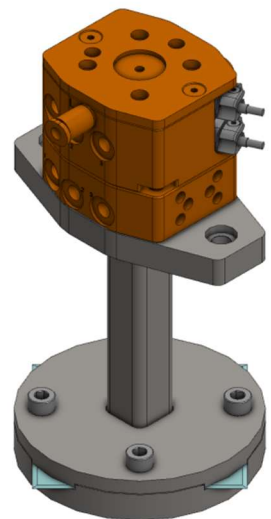
Target Cycle Time: 10 sec/box

Intended Outcomes

The primary objective of the project was to design and build an automated cell capable of depalletizing and unboxing battery cells, with a target cycle time of 10 seconds per box. The solution needed to increase productivity, reduce labor costs, and improve overall efficiency in the battery cell handling process.

Previous Process

The customer's previous process relied on manual labor for the depalletizing and unboxing of battery cells. This approach was time-consuming, labor-intensive, and prone to human error. By transitioning to an automated system, the customer aimed to improve productivity, reduce costs, and enhance overall process efficiency.



Depalletizing and Unboxing Line



Equipment Used

The automation solution comprised the following key equipment:

1. Fanuc M710ic/50 Robot: This industrial robot provided high-speed and precise movements for the depalletizing task, ensuring efficient handling of battery cells.
2. Fanuc LR Mate 200iD 7L Robot: This compact robot was employed for the unboxing process. Utilizing a custom end of arm tool the LR Mate was able to rapidly and accurately cut the outer cardboard box without damaging any other battery cells inside.
3. Fanuc IR Vision System: The vision system enabled the robots to detect and locate battery cells accurately, ensuring precise picking and placing operations.
4. Custom Tooling: We developed a specialized End of Arm Tool (EOAT) that securely gripped the battery cells during the depalletizing and unboxing processes, maintaining their integrity and minimizing the risk of damage.

OUTCOME

The battery cell depalletizing and unboxing project was successfully completed on-time, and the implemented automation system exceeded the customer's expectations. By leveraging our expertise in robotics, 2D vision systems, and custom tooling, we were able to achieve the desired cycle time of 10 seconds per box, significantly improving productivity and reducing labor costs.

The integration of the automation cell with the customer's existing equipment was seamless, ensuring a smooth transition and minimal disruption to their production line. The automated system increased efficiency and reliability while eliminating the potential for human error associated with manual labor.

Overall, our automation solution delivered tangible benefits to the customer, enhancing their battery cell handling process, optimizing productivity, and improving their competitive advantage in the industry.

