

Major Clothing & Equipment Retailer, Maine Robotic Palletizer Automates Tote Stacking Process

Abel Womack installed a Material Handling system consisting of a Fuji robotic palletizer, conveyor equipment, controls, commissioning and training for a major clothing and outdoor recreation equipment retailer in Freeport, ME.

The new robotic palletizer replaced the existing stacking and unstacking equipment. The rate of stacking and unstacking varied on each function, however the robotic unit was designed to have a combined rate of 6-8 totes per minute or nearly 3000 totes in an 8 hour shift.

How the New Palletizing System Works:

Stacking: Totes arrive at the stacking area in the same manner as the previous set up. Once the totes arrive, 2 new sections of conveyor position the totes for stacking. Once the first tote is in position, a signal is sent to a control panel that upon receipt of the next tote, the robot will need to pick it up and stack it on top of the first tote. When the 2nd tote arrives the robot will be signaled that a tote is in position and the robot will be activated; this same process will be repeated for the 3rd tote. Once there is a stack of 3 totes, the conveyor system releases the stacked totes. The stacked totes then travel down the existing conveyor system and accumulate.

Unstacking: Stacked 3 high totes are put on the existing conveyor. Once totes reach the unstacking area, 2 new sections of conveyor position the totes for unstacking. With the totes in position, the control panel receives a signal indicating the totes are ready to be unstacked. With the use of photo-eyes, the system monitors the position where the unstacked tote is to be placed on the conveyor. As long as this position is empty, the robot will receive a signal to remove the top tote and place it in the empty position. The process repeats for the 2nd tote. The bottom tote is released, and the whole process starts over with the next set of stacked totes.

It is important to note that both functions operate simultaneously.



Project Key Features

Challenge

- Replace the current tote stacking and unstacking process with a reliable and efficient automated process.

Abel Womack Solution

- Installation of Fuji robotic palletizer with new conveyor and controls to automate tote stacking and unstacking process.

Benefits

- Improved reliability/ up time vs. previous automated system.



Fuji EC201 Robotic Palletizer

"We have been very pleased with the performance of the robot and the system in general. Reliability and 'up time' has improved significantly over the previous system"

Project Engineer
Clothing & Equipment Retailer

Totes are stacked 3 high and then unstacked in an automated process that increased warehouse efficiency and employee safety.