

CASE STUDY



Overview

Automated Motion, a leader in robotic automation systems based in Belcamp, Maryland, partnered with Alba Manufacturing to develop a robust pallet conveyor solution for handling water cooler bottles. This collaboration resulted in a system that effectively manages both manual de-palletization of empty bottles and automated palletization of full bottles, showcasing the strength and efficiency of Alba's design.

The project begins with the loading of full pallets of empty water cooler bottles, which are returned from the water cooler service industry. These pallets, stacked five levels high, are placed at the start of the Alba pallet conveyor and conveyed to the de-palletizing zone.

In this zone, the bottles' necks are oriented towards the operator, who uses a foot-pedal-operated hydraulic scissor lift to adjust the pallet's

elevation. This allows the operator to remove the bottles manually, starting from the top of the stack and working downwards. The scissor lift ensures that the operator can work ergonomically, reducing physical strain and increasing productivity.

Once the empty bottles are removed, the pallets are lowered to the height of the downstream conveyor and moved into a secure robotic area. The pallets are clamped and pinned into position. A case conveyor then brings full bottles to the robot, which picks and loads them onto the pallets until a complete stack is formed. This transition from manual to automated processes streamlines operations, enhancing overall efficiency.

After the pallets are fully loaded, they are conveyed to a lift and rotate conveyor, which rotates the stacks 180 degrees. This reorientation ensures that the bottle necks face away from the robot. The full stacks

Overview *(continued)*

are then removed from the conveyor by a fork truck, with the bottle necks facing the driver. This orientation simplifies the delivery process, allowing delivery personnel to easily reach for the bottles by their necks and place them onto a dolly for transport.

The AquaLoader system exemplifies how combining manual and automated processes can result in a highly efficient and ergonomic solution for pallet handling needs. The success of this system has led to multiple collaborations between Alba Manufacturing and Automated Motion, demonstrating the reliability and innovation both companies bring to their projects

