

Case Study

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Energy Efficient Distribution Center

Lifetime Brands' newly upgraded 700,000 square-foot Robbinsville, New Jersey distribution center, with its energy efficient conveying and sortation equipment built by Dematic, stands as a model of DC energy conservation boasting a substantial reduction in electrical power consumption while operating at 99 percent uptime reliability handling an average volume of 425,000 cartons each month.



The challenge

In 1999, Lifetime Brands Inc. began laying plans for a Greenfield distribution center in New Jersey that would consolidate its three manual distribution operations into a single, highly efficient and very automated facility. In a staged approach over eight years, the company built out not only the distribution center's material handling equipment but also the DC's physical size to accommodate its needs, expanding its total space to 700,000 square feet. But this was to be no ordinary DC. Lifetime Brands brought in Dematic Corp. to engineer, build and install conveying, picking and sortation equipment that would optimize energy usage while maintaining the highest possible uptime reliability.

Our solution

Ninety-five percent of Lifetime Brands' 7,600 SKUs come into the Robbinsville DC by container. The containers are opened, and the product is palletized and then put away into storage or used on current orders using a cross dock operation. A WMS helps direct picking as well as replenishment of the product from the stored pallets. Batch

waving is utilized through the picking and sortation process. Full-cases make up the majority of products needed for orders. The higher volume items are selected directly onto conveyors in five multi-level pick towers using pick labels. About 20 percent of the DC's product is split-case, manually picked and scanned to carts using RF scanning technology which are then inducted into the sortation at one of several induction points.

"A key operational metric we look at is our systems uptime and in Robbinsville it is over 99%. We also attribute much of our inventory and order accuracy to the systems we have in place."

Craig A. Phillips, Sr. VP Distribution,
Lifetime Brands



Split-case items include kitchen gadgets and food preparation items, which are usually pick-and pack to a specific store rather than shipping bulk to wholesale. Normally, the DC is shipping to a distribution center in bulk, but split-case items are packed per store then shipped consolidated to a distribution center.

Energy Efficient Conveying and Sortation

The hub of the Robbinsville distribution center, and where the DC realizes much of its most profound efficiencies, is with its sortation and conveying systems which reduce manual labor.

"We have energy conservation built in throughout the entire conveyor and sortation material handling systems," says Bob Poth, with Dematic. "Lifetime Brands is able to determine when product is moving through any part of the facility, and turn off a section of the system automatically when it is not in use, and then turn each section back on when the product volume comes back. This is achieved through Dematic's control system by using photo eyes strategically located throughout the conveyor equipment. This operates in conjunction with selectable timers so the equipment is only running at planned intervals. It is a very simple and very effective energy conservation module that we developed and integrated into the system for Lifetime Brands."

Two Dematic RS Series highspeed sliding shoe sorters are utilized in the DC. The interleaving extruded aluminum slats in the sorters provide a wide, flat carrying surface that prevents jams. It allows the sorting of a wide range of product sizes and types with quiet and positive sortation and ultra-high throughput.

Coming into and out of the sorters, the DC is utilizing zero pressure accumulation conveyors to temporarily stop, hold, and release material. They allow product accumulation along a line without pressure buildup.

The DC's energy conservation module, conveyors and sortation is run under Dematic's SortDirector® warehouse control system (WCS), which integrates with the Robbinsville WMS and coordinates all product movement inside the distribution center. SortDirector runs on a Windows-based PC using an SQL database. It uses modular components of code to make it easily configurable. Providing graphic system monitoring for the entire conveying operation, it gives operators real-time control of product movement, and real-time reporting.

The Payout

By mid year of 2007, Lifetime Brands' Robbinsville, New Jersey distribution center had the capability of handling 45,000 cartons per day, and an extremely high order accuracy rate.

"The energy efficiencies in our N.J. facility have helped cut our distribution operating costs. We have reduced our distribution expense, as a percentage of sales, by 3.75 percent over the past five years."

Craig Phillips,
Senior Vice President for Distribution,
Lifetime Brands

"Uptime reliability is also critical to running an efficient DC," continues Phillips. "A key operational metric we look at is our systems uptime and in Robbinsville it is over 99%. We also attribute much of our inventory and order accuracy to the systems we have in place".

Customer benefits

→ 45,000 Cartons per Day

→ 35% Reduction in Energy Usage

→ 99% System Uptime

→ Reduced distribution expense, as a percentage of sales, by 3.75 percent over the past five years
