

Case Study

The Children's Place
Fort Payne, Alabama

Super Streamlining High-Rate Throughput in Retail Apparel Distribution

The Children's Place Retail Stores, Inc. is a leading specialty retailer of children's merchandise. The company designs, contracts to manufacture, and sells high-quality, value-priced clothing, accessories and merchandise under the proprietary The Children's Place name.

The latest 700,000 square-foot Fort Payne, Alabama distribution center, opened by The Children's Place in conjunction with Dematic, features 50,000 linear feet of state-of-the-art automated conveyor, four high-rate sortation units, a 2,600-store-location put-to-light order fulfillment system, and full-case crossdocking capability, and is nothing short of a model for super-streamlined, high-rate, retail apparel distribution.



The challenge

For The Children's Place, the task was straightforward - build a new distribution center to help supply its expanded number of retail apparel stores in the southern United States, and relieve some of the distribution load on its other three North American DCs to speed up store delivery times across the continent. With a net increase of 250 The Children's Place stores over the past 5 years, the new DC could not be too soon to arrive.

Our solution

"We brought Dematic in to manage the material handling part of the DC," says Don Whiteford, Director of Engineering for The Children's Place. "The Fort Payne distribution center is the fourth facility where Dematic and The Children's Place have worked together and they fully understand our throughput requirements. Dematic engineered the latest system to meet the projected throughput requirements of the DC from receipt through shipping. This includes conveyors at receipt, throughout the DC and shipping, sortation equipment, pick systems, print-and-

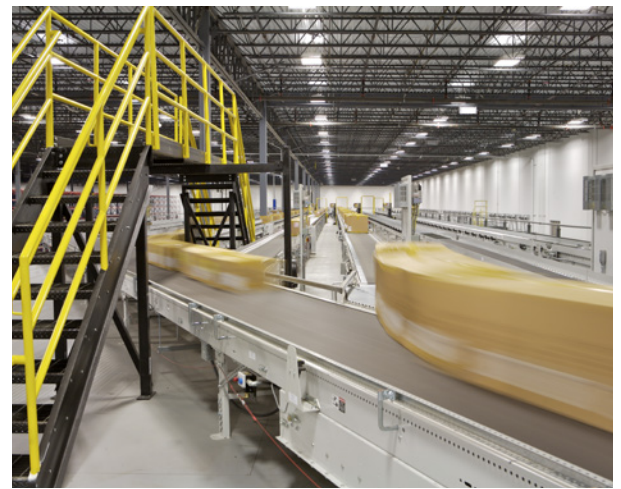
apply, mezzanines, and the warehouse control system to operate and monitor the equipment."

"The DC was a Greenfield project. We started clearing the land in October 2006, Dematic was on-site installing equipment the following February, and we had our opening in July of 2007. It was a very tight timeline."

Don Whiteford, Director of Engineering
The Children's Place

Automated Receiving, Streamlined Crossdocking

The automation starts at receiving. More than 90 percent of The Children's Place product comes to the DC in ocean containers. Each container has its own ASN (advanced shipping notice) which is linked to the Warehouse Management System (WMS). Each of the cases has a vendor specific label, which is a unique identification for that specific case. This gives the DC the ability to precisely track its inventory via Dematic's warehouse control system (WCS).



These labels are read and synchronized by WCS to effect real time, high-rate routing through the DC. The cased product is either cross docked to shipping, or conveyed to the racking area for store distribution.

Full-Case and Broken-Case Picking

Aside from crossdocking, there are two other ways that The Children's Place sends product out of the Fort Payne DC. It is either full-case, or less than full-case. Full cases come out of the 60,000 pallet location rack system, and go directly on the DC's four dedicated "slapper" lines, through the LPA system for labeling and straight to shipping. Less than full-case orders are consolidated by the DC's put-to-light modules.

The put-to-light system is bringing SKUs to a specific location for a specific store. In this case, 2,640 put-to-light locations are used to hold product destined for each of the stores. The picking begins in a tote-build area consisting of 24 stations where full cases are opened, de-cased and the product assigned to totes. The pick area is located on 156,000 linear feet of mezzanine platforms.

The totes are then fed into a Dematic RS Series high-rate sliding shoe tote sorter and sorted into one of 40 put-to light lanes. The products are processed into shipping cases for specific stores. Full cases are then sent outbound onto another RS Series high speed sliding shoe sorter into the LPA area. A shipping label and carton content label is automatically applied to each case,

which is then transported to the RS Series sliding shoe sorter for shipping, and to the designated shipping area for automated loading.

High-Rate Sortation

In the Fort Payne DC, four RS Series Dematic sliding shoe sorters give high-rate, accurate package handling up to 180 cases per minute. Interleaving extruded aluminum slats provide a wide flat carrying surface that prevents jams. This allows the sorting of a wide range of product sizes and types, with quiet and positive sortation and ultra-high throughput.

"Smart", Energy-Efficient Conveying

The conveyor also has the ability to automatically turn itself off when it is not needed. This is a tremendous capability for energy savings. Compared to conventional conveyor systems, it reduces power consumption up to 30 percent, reduces labor up to 20 percent, and conveys a wider variety of product. Integrated distributed controls provide diagnostics and new levels of user control, with system and unit adjustments to maximize performance and reliability.

"We wanted the Dematic conveyor for a number of reasons; it is the latest and greatest in conveyors and we have never been shy at purchasing state-of-the-art equipment," says Whiteford. "The Children's Place is always concerned about environmental conditions, and when we are running that much conveyor there is a pretty big electric bill."

Warehouse Control System

Dematic's SortDirector® is being used for the warehouse control system (WCS) which provides state-of-the-art graphic system monitoring for the entire conveying operation. It integrates with the WMS and coordinates all product movement inside the distribution center.

At a glance, users can identify system status and easily diagnose material handling equipment issues. It provides a full layout view of the system, which displays the operating conditions of material handling components by color coding. To access more detailed information users can select a component to display additional information and options. It is also Internet enabled for ease in remote viewing.

The Benefits

"The biggest improvement that we have seen so far is increases in our receiving capacity and throughput by almost 50 percent over our other DCs," says Frank Loewen, Senior Director of Logistics for The Children's Place.

"We have been processing, on the outbound, over 2.5 million units shipped per week," continues Loewen. "This is being done on one shift. Before we opened up the Alabama DC, our average transit time was over 3 days. When we opened Alabama, this was reduced to less than 2 days, which represents about a 40 percent reduction in delivery transit time to our stores."