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Distribution's hidden treasures

A Worldsource automated material handling system design utilizing a Lightning Pick pack-to-light system allows this closeout retailer to process over 100,000 different SKUs annually with better than 99% accuracy.

TUESDAY MORNING COMPARES ITS CUSTOMERS TO TREASURE seekers. That's because each time you enter one of this retailer's nearly 700 stores, you find completely different merchandise than during a previous visit. In fact, products vary greatly from one store to another.

The company sells closeout and overstock department store-quality merchandise at 50-80% off retail prices. Items include cookware, linens, lamps, furniture, luggage and other household goods. Its closeout business model means that it has limited quantities of most SKUs, but must turn them very quickly.

"The products we handle range from A-Z," says Dennis Billings, vice president of distribution. "And several hundred SKUs that we handle each day we will never see again."

Besides processing so many SKUs, managers at its DC near Dallas were also challenged with annual growth that added 10-15% more stores annually. For most retailers, this is not a major problem; you simply order more of an item. But for a closeout retailer dealing with limited quantities, it means

adding exponentially more SKUs. The DC actually processed 30% more SKUs last year than the previous year to accommodate a 15% growth. Such increases were putting a strain on the DC's capacities that required a new material handling design.

"The key for us is being able to turn SKUs at a much higher rate than we could before," notes Kirk Longo, director of operations.

Most retail operations pick products for their stores from fixed locations, with workers moving to where products are stored. Due to the limited quantities of each SKU at Tuesday Morning, this was not a practical design. Instead, the retailer consulted with Worldsource, their systems integrator, which designed and implemented an automated material handling "solution," incorporating a Lightning Pick pack-to-light module from PCC Systems consisting of 1,500 light-controlled locations arrayed along 12 processing pack lanes.

PCC's Lightning Pick solution addresses the entire unit han-

dling process, from price marking through store sortation. First, all items allocated to stores are taken to a ticketing area on the DC's lower level. Each operator in ticketing receives bar-coded sheets of price tickets. As items are ticketed, they are placed into bar-coded totes. A scan of the tote ensures the system knows the contents. This information is relayed by the Lightning Pick system to the Worldsource PTMS+ conveyor control system. Upon arrival on the mezzanine, each tote is scanned and automatically sorted to a pack zone where shipping cartons assigned to specific stores are staged. A worker next scans the tote, causing lights

and quantity displays to illuminate adjacent to cartons that need that SKU. The correct items are placed into the carton and a button is hit to confirm the action. Full cartons are pushed off onto a takeaway conveyor for transport to sealing stations and shipping.

At peak, the facility processes 500,000 units each day, with the Lightning Pick pack-to-light system handling over 85% of them. The system is also extremely flexible. Zones in the pack-to-light can be expanded or reduced

depending on workload. Locations can also be dynamically assigned to match the volume requirements of each store. The system can eventually handle 1,000 stores.

The pack-to-light minimizes the number of touches performed on each SKU and has increased processing accuracies to over 99%. It has easily accommodated increased volumes and growth without adding labor.

"Worldsource and PCC partnered to provide a solution that met our unique situation," says Billings. "There were a lot of engineering challenges, but it now allows us to expand and stay in this facility for several more years."

—By David Maloney, Special Projects Editor

For more information on Lightning Pick, call 262-250-2143 or visit www.lightningpick.com.

For more information on Worldsource, call 630-795-1100 or visit www.world-source.com.



To see a three-minute video of Tuesday Morning's operations, go to www.dcvelocity.com and click on The Speed Challenge.