Distribution Center MANAGEMENT

July 2014

Managing people, materials and costs in the warehouse and DC

From the Golden Zone

Put wall systems: Why they work for piece pick operations

by Ken Ruehrdanz

Looking to boost accuracy and productivity in your piece-pick operations? Consider a put wall system, a scalable solution that works well in a variety of sectors, including office supplies, medical devices, toys, and jewelry.

The put wall system is based on an industrial engineering strategy that de-constructs and re-constructs orders to create an ultra-efficient order fulfillment process. The process includes a foolproof quality check by scanning each item at the put wall.

The entire process is paperless and managed in real time. For operational flexibility, each put wall can process single-line or multi-line orders. Put walls can also be mounted on wheels and moved around the distribution center or moved into position as daily requirements change.

The system even scales up for peak periods, by activating standby put walls. The modular construction of the put wall and software allows fast and easy future expansion. Among our clients who've seen impressive results with put walls are Internet retailer iHerb.com and third-party logistics provider OHL.

By consolidating orders and packing, the put wall boosts productivity, order accuracy, speed, and efficiency. A "divide and conquer" strategy, the put wall combines order lines from multiple orders and creates high-density, efficient picking throughout the warehouse. The put wall is used to consolidate and pack the items for each individual order.

The put wall is a goods-to-person system directed by software. A typical put wall system has multiple workstations and often uses a conveyor to deliver containers of preselected SKUs, usually plastic totes, into the put wall module. The workstation is made up of a wall of shelving with individual compartments or cubbies that each hold one customer order. Put walls can support any number of separate order compartments, with 30 to 75 the typical range. The compartments can be configured in multiple sizes to support multiple order volumes.

The front or induct side is dedicated to putting items into the compartments as they are removed one at a time from the pre-picked totes. Each compartment corresponds to a specific order. The back side is dedicated to packing orders.

The put wall system is implemented downstream from the pick process. The items for each order are picked before arriving at the put wall. A few examples:

Batch Picking. The batch pick configuration is efficient, because each picker will collect items for multiple inbound batch totes in a single pass through the warehouse. Instructions are sent by RF handheld devices, voice terminals, or lights. When all the items for a batch are picked, the containers are transferred to one or more of the put wall modules. Transportation to the put wall

system may occur by using pick carts or conveyor.

Pre-Put. The pre-put method collects the precise quantity of each SKU into one container for each put wall. The pre-put container travels to only one put wall.

SKU Buffer. This method is designed around a high-density staging buffer, such as a miniload automated storage and retrieval system or multi-shuttle. A tote of one SKU is retrieved from the storage buffer and routed to each put wall that requires that SKU. After the tote travels to all of the put wall workstations requiring that SKU, the tote travels back to the staging buffer and is stored.

At each put wall, an operator begins by scanning the next tote in sequence to be processed. Once the tote is inducted, the operator picks up the first item in the tote and scans it. A light mounted at the cubby location in the put wall illuminates, showing where to put the item. When all of the items for an outbound order have been placed in the assigned compartment, a light on the packing side of the put wall shines, indicating to the operator to begin the pack-out process. When the pack light is acknowledged, the system will assign the next available order items from the inbound container.

The packing side is designed with a work bench, packing materials, and shipping containers. Completed orders are packed into shipping containers.

Put wall rates range from 200 to 500 items per operator per hour. Software manages and directs both the picking and put wall processes. Orders can be sent from the host in multiple configurations including discrete orders, pre-batched order totes or pre-configured cart batches.

As more and more DCs have launched put wall solutions in recent years, the verdict is in: This new configuration performs well and has proven a successful solution for consolidating customer orders in a piece-pick environment. The pick productivity and order accuracy realized by users of the put wall is impressive.

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Distribution Center Management is published monthly by Alexander Communications Group, Inc., which provides news, data and information on key distribution and warehousing topics though its newsletters, books, and website.