

Order Picking Systems

BY JEAN FEINGOLD

Order picking is how warehouse and distribution center workers fulfill orders. “Order picking systems help reduce errors in picking by telling the worker what to pick and then confirming what was picked,” noted Brian C. Neuwirth of MHI member UNEX Manufacturing, Inc. “As order picking is the most labor intensive process in a warehouse, whatever can be done to speed picking improves productivity.”

Order picking systems include inventory holding storage, pick instructions and places to put the picked items. To determine the best solutions, begin by conducting an in-depth analysis of your space, SKUs and flow.

Case and each (split case) picking

Customers want products in either full-case or less-than-full-case quantities. “In case picking, product is picked in full-case or carton quantities from varied storage mediums,” Neuwirth explained. The majority of faster movers are picked from pallet positions. Medium to slow moving products are picked from carton flow racks. Slow moving products are picked from shelving. When workers pick product, it may go to a pallet, tote, cart or conveyor. As the picker travels the aisles selecting product, orders are grouped and sequenced for shipping.

In each picking, also known as split case picking, products are sold in less-than-full-case quantities. Order pickers individually select the product from a master case or carton. For most operations, each picking represents a smaller percentage of picks, although in direct-to-consumer operations, the majority of orders are each picked. “Each picks use carton flow or shelving systems,” said Neuwirth. Design these systems to present the product to the order picker so the worker can select an individual piece without interference. After picking,



Capital Candy order picker uses UNEX Pick-Plank for ergonomic picking.

products are placed into totes or master cartons and transported via conveyors or carts to the next stage of the order fulfillment process.

Current technologies

Pickers can use simple paper lists, checking off items as they complete orders. Paper or mobile computer-based systems require workers to read instructions and scan barcodes or key-enter information to confirm their tasks.

Because order picking operations can account for more than 50 percent of a facility’s operational costs, it is desirable to optimize the process and reduce mis-picks.

Voice-picking, RFID tags and pick-to-light equipment substantially automate this process. Voice-picking equipment allows hands-free picking, further improving efficiency and accuracy and providing better ergonomics.

Merchandise must be stored in sturdy conveyor systems, storage shelves or pallet racks. Arrange these holding units in an organized pattern within the facility that makes sense, like housing fast-moving items together separated from slow-moving items.

“Tilted pick shelves tilt forward so that when an item in front is picked, the others slide forward,” noted Neuwirth. “Shelves can hold labels, light bars and mounting devices to improve efficiencies.” Because items slide forward automatically, workers don’t have to reach into shelves to pick the next item, resulting in improved ergonomics and faster pick rates.

“Pallet racks fitted with flow conveyor lanes maximize the number of SKUs that can be stored,” Neuwirth



Split case picking with UNEX Manufacturing.



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added. “They provide products at the optimal pick point, at the front of the rack, eliminating bending and reaching into the rack. Inventory is condensed, increasing the number of SKUs per bay and decreasing travel time between picks up to 85 percent.”

Reducing mis-picks

Because order picking operations can account for more than 50 percent of a facility’s operational costs, it is desirable to optimize the process and reduce mis-picks. These mistakes include picking incorrect items, picking the wrong quantity

or failing to pick needed items. Mis-picks can be very costly to a distribution center once item costs and shipping, packing and inventory return expenses are totaled.

To avoid mis-picks, use a binning system giving SKUs permanent addresses so workers know where each product will be. Pick-to-light systems also reduce mis-picks. “A visual indicator of the item and quantity to be picked will make sure order pickers can easily avoid picking the wrong SKU or not picking enough of a given SKU,” Neuwirth said. Slotting SKUs that don’t resemble each other in size and appearance can also make picking easier. Automated goods-to-man systems bring the required SKUs directly to order pickers, reducing travel time and workers traveling to the wrong location.

Ergonomic considerations

“As a labor intensive function, special attention needs to be given to the physical stress experienced by order pickers,” pointed out Jim Galante of MHI member Southworth Products and chairman of MHI’s EASE Council. “Consider how you can reduce the distance walked and how far the picker must bend or reach to gain access to the merchandise along with limiting the size and weight of the items to be carried. These are all ergonomic factors that can be modified in favor of the picker with a well-designed order picking system.

“Each repetitive physical material handling activity should be carefully examined,” Galante continued. “By installing an order picking system that minimizes these activities’ impact on pickers, there will be fewer lost time injuries, improved efficiency and enhanced productivity.”

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Addendum to the Q1 Safer Handling column: In the Q1 issue, this column included a comment on wire mesh safety panels. *MHI Solutions* would like to clarify that netting is a different material than steel mesh. Each material has different performance characteristics. For pallet racking applications, thousands of systems have been installed and are currently containing pallet loads of up to 6,000 pounds. Note also that there are safety nets on the market today that have been dynamically tested to 17,500 foot-pounds of force.