



white paper

“Goods to Person” Order Fulfillment

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Creating Logistics Results



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“Goods to Person” Order Fulfillment

Introduction

Engineering order fulfillment systems for distribution operations includes the consideration of many factors. Finding the design that is optimal for a particular application depends on the information from two key areas: the activity profile and the user’s business objectives.

Elements of the activity profile (the data & facts) include daily unit volume, units per order, lines per order, packing sequence, unit cube & cube movement, unit structure, cartons per order, total SKUs, % daily SKU’s active, order download, % volume cross-docked, etc. A solid understanding of the activity profile will point the way to the most appropriate solution.

Operational drivers that are strategic to the business objectives include: extend order cut off time, accommodate spikes in throughput, perform order fulfillment on 1 shift of operation, expandability for future growth, ergonomic design, initial investment cost, manageability, total labor, accuracy, product security, space, and speed. These business drivers will also impact the selection of the most appropriate order fulfillment solution.

Distribution facility managers will find that their analysis will often point the way to more than one solution that will satisfy their requirements. Comparing and contrasting the various order fulfillment configurations (pick to cart, pick to pallet, put to pallet, pick to conveyor, batch pick & sort, pick & pass, zone route, goods to person, etc.) is a topic for another report. This white paper will focus on the attributes of a major solution category for order fulfillment called “goods to person”.

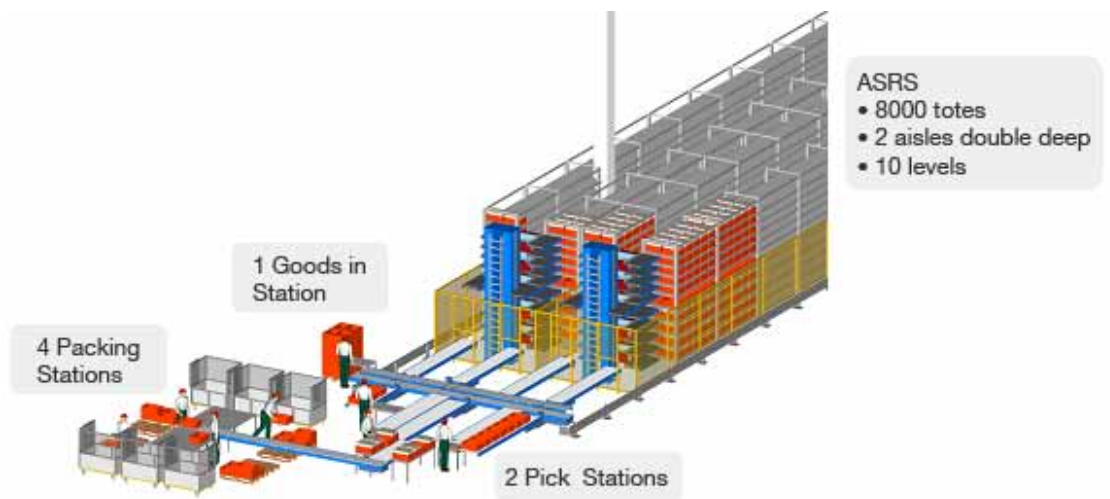




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What is Goods to Person?

“Goods to person” means that the order picker stays in one place, and the system brings the “goods” or SKUs (stock keeping units) to the person. The SKU is picked and then sent back to a storage location. The basic system components consist of a storage medium for the product inventory, a conveyance method to bring the SKUs to the pick station, an ergonomic workstation, and software to control the flow. There are various system configurations; for example: one SKU to one order container, or one SKU to multiple order containers, pick only station, combined pick and pack station, etc.



Typical “goods to person” layout featuring staging of inventory in the ASRS connected by conveyor to pick and pack stations





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Benefits of Goods to Person Order Fulfillment

Significant benefits can be realized with the use of a “goods to person” system. Even though there are many variations on how a system can be configured, most all the designs allow the following benefits:

Eliminate picker travel time, use less labor – Order pickers do not need to roam the warehouse walking to and from the dedicated pick faces. Travel time is the largest time component of a traditional order picker in a “person to goods” arrangement. By minimizing this time component, productivity is increased and labor to operate the facility is reduced.

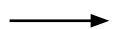
Omit the dedicated pick face – Typically, a “goods to person” system involves staging the inventory in an automated device such as an automated storage & retrieval system (ASRS). Think of it as a black box where all the SKUs are stored; a SKU is retrieved when it is required. This omits the need for SKU slotting and ongoing re-slotting management (moving the pick faces as activity rates change) that is typical of a “person to the goods” warehouse.

Reduce system footprint – The space required for a “goods to person” design is less than conventional “person to goods”. If the storage medium is high density, significant space savings can be achieved. A typical footprint may be 30% to 50% less than conventional storage.

Product Security – When the product inventory is placed into a high density automated system (ASRS), it is secure and not available for access by your staff. Product security is important to maintain inventory accuracy, reduce theft, and assure first in, first out strategies.

Ergonomic workstations – The pick stations can be designed for employee comfort. Working heights, range of motion, and environment (lighting, temperature) can be optimized for the employee. Some designs omit the requirement to move and lift totes/cartons. Furthermore, workstations can be outfitted to support special needs employees, thereby allowing universal access.

Speed in order selection – The pick station design allows high worker productivity. Since there is little or no travel time, and the item to be picked is ergonomically served to the worker, high rates of order selection are achieved. Most operations obtain rates in the 500 to 1000 lines picked





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per hour per operator. The “goods to person” system allows fast and slow moving SKUs to be treated equally, which removes the need for separate pick areas based on SKU velocity. This is important for applications where SKU velocity changes on a daily basis.

Accuracy – Order picking using a “goods to person” station is more accurate because operators are typically handling one SKU at a time, making errors less likely. Most “goods to person” stations utilize put-to-light technology to indicate quantity and location to put the item, further enhancing accuracy. The picking process is performed by one person, thereby improving traceability.

De-coupled workstations – Staff can work in parallel, unaffected by each other. Stations can be opened and closed according to business volume on a particular shift of operation. There is redundancy in this configuration since items can be processed at any location as the workstations are completely de-coupled.

High utilization workstations – Work flows into the pick station smoothly and consistently. Order pickers are highly utilized, since they do not need to wait for work. Worker productivity is not affected by the structure typical of a traditional pick module (high activity in one zone, little activity in another zone, pace issues in a pick-and-pass environment, etc.).

Sequencing – When building a customer order, a precise sequence of SKUs can be achieved. For example, items can be presented to the order selector by weight (heavy to light). Or, in another example, orders can be built in sequence by family group.

Order Profile – The system is not affected by changes in order profile. For example, single item orders and multi item orders are accommodated with equal efficiency. This means that trends, such as more orders with fewer order lines, do not compromise productivity. This feature adds to the ability of “goods to person” systems to accommodate change as order profiles change in the future.

Efficiently Accommodates SKU Growth – If more SKU are added, the storage system can absorb the new loads (if sized for growth) or the system can be expanded with additional automated storage modules, or existing modules can be extended.





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Examples of “Goods to Person” Implementations

There are many warehouse operations that utilize “goods to person” order fulfillment configurations. These applications had the appropriate activity profile and business drivers to realize the benefits.

A personal care products distributor was picking slow and fast moving inventory using pick lists in a “person to goods” arrangement. There was an unacceptable level of errors in inventory and order accuracy. This operation implemented a “goods to person” system for medium and slow moving inventory and a separate pick to light sub-system to accommodate the very fast moving inventory. The “goods to person” system provides pick rates of up to 850 order lines per hour per pick station while reducing picking errors by more than 75% with the one to one pick arrangement. Furthermore, the SKUs are stored in a high density ASRS that reduced the system footprint by 40%.

A pharmaceutical distributor needed to improve order accuracy, increase productivity, and decrease order processing time. A “goods to person” system was implemented that utilized an automated storage and retrieval system to stage the inventory, one replenishment station, 2 pick stations, and 4 packing stations. Picking errors were reduced from 1% to less than .01%. The staff to operate was reduced since each pick station can now obtain 400 lines per hour. In addition, product security was increased by staging the inventory in an automated system thereby reducing access to narcotics. Also, product retrieved from the ASRS and presented to the order picker can be sequenced (heavy, light, liquid, etc.).

An industrial supplies distributor implemented a “goods to person” order fulfillment system and gained many logistics results. First, order cut off time was extended by 3 hours, since order processing time was decreased from 3.5 hours to 30-60 minutes. Also, reduced order processing time allowed more time to bundle orders for shipment and reduce shipping rates. The picking process is performed by one person, thereby improving traceability. Finally, the system offers redundancy as items can be processed at any location as the workstations are completely de-coupled.





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Summary

“Goods to person” systems should be considered especially when the user’s business objectives link to the benefits: need for product security, lack of space, ergonomic worker issues, etc. A typical user profile may have a split case picking operation, 5,000 or more orders per day, and a high quantity of slow moving inventory (typically 8,000 or more SKUs). This method is not industry specific, but rather, it fits a wide array of market sectors. Industry sectors that have successfully implemented “goods to person” systems include distributors of: books, pharmaceuticals, retail grocery, retail general merchandise, retail apparel, meat, dairy products, industrial parts, medical equipment, and personal care items to name a few.

About Dematic

Dematic provides logistics solutions that optimize material and information flow from receiving to shipping within the four walls of the factory, warehouse, or distribution center. These solutions, built around automated material handling technologies, process improvements, and software, are engineered to improve overall supply chain and business performance.

Dematic’s integrated systems are supported by a seamless, one source, implementation capability that reduces time, cost, and risk. This is accomplished by owning and controlling data driven design services, real time WMCS software, proven material flow technologies, and best in class engineering, project management, and life cycle support services.

Dematic is dedicated to customer satisfaction & guarantees successful system performance. For more information, visit: www.dematic.com

If you are interested in learning more about this topic and how we can help, please contact Dematic at (877) 725-7500.

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