Fast Order Fulfillment

kardexremstar

Introduction

Today's wholesale warehouses need an efficient, dynamic, and flexible system for fast order fulfillment to keep pace with significantly changing consumer behaviors.

E-commerce forces change

As e-commerce sustainably grows, warehouse operations feel the pressure intensifying daily. Consumers place orders more frequently, in smaller quantities, later in the day, and with unprecedented delivery expectations.

These changes and new expectations cause bottlenecks for many B2B and B2C wholesalers using traditional fulfillment methods. There isn't enough time for a picker to take a trolley through endless rows of racking to pick, pack, and dispatch quickly enough. It is no longer sufficient to have efficient warehouse processes – fast and flexible are equally important.

The Kardex Frame Pick System is an innovative goods-to-person solution with many advantages and without the hassle of installing a complex system of rigid conveyors or investing in other costly material handling equipment.

Reduce walking by 65%

Eliminate picking errors via a combination of smart and intuitive technologies

Achieve a fourfold increase in productivity with intelligent order batching

Automated technologies

At the heart of this system is the Kardex Compact Buffer this. With two, four, or six units connected in series, it creates a highly-compact storage area and manages inventory in standard plastic bins (600 × 400, 640 × 440 mm).

Fast order fulfillment

Once a batch of order lines is released, the Kardex Compact Buffer quickly presents an operator with the relevant storage bin. A user-friendly screen/LED pointer informs the operator how many products to pick and put in the order bins.

Unique bin positioning

Instead of conveyor-transport, bins stay on order picking trolleys behind a put-to-light display frame. After an operator picks the right quantity, a display indicates how many go in which bin. A button confirms each 'put'.

The packing area

The displays on the frames light up once workers pick all trolley order lines. An operator then transfers the trolley to the packing area where orders get packed and wait for dispatch. The next trolley wheels into the vacant space.

Innovative software

A predefined software strategy links orders to the empty trolley bin when an operator uses it to select the relevant number of orders. A single scan connects the trolley and frame and adds it to the batch of orders being processed.
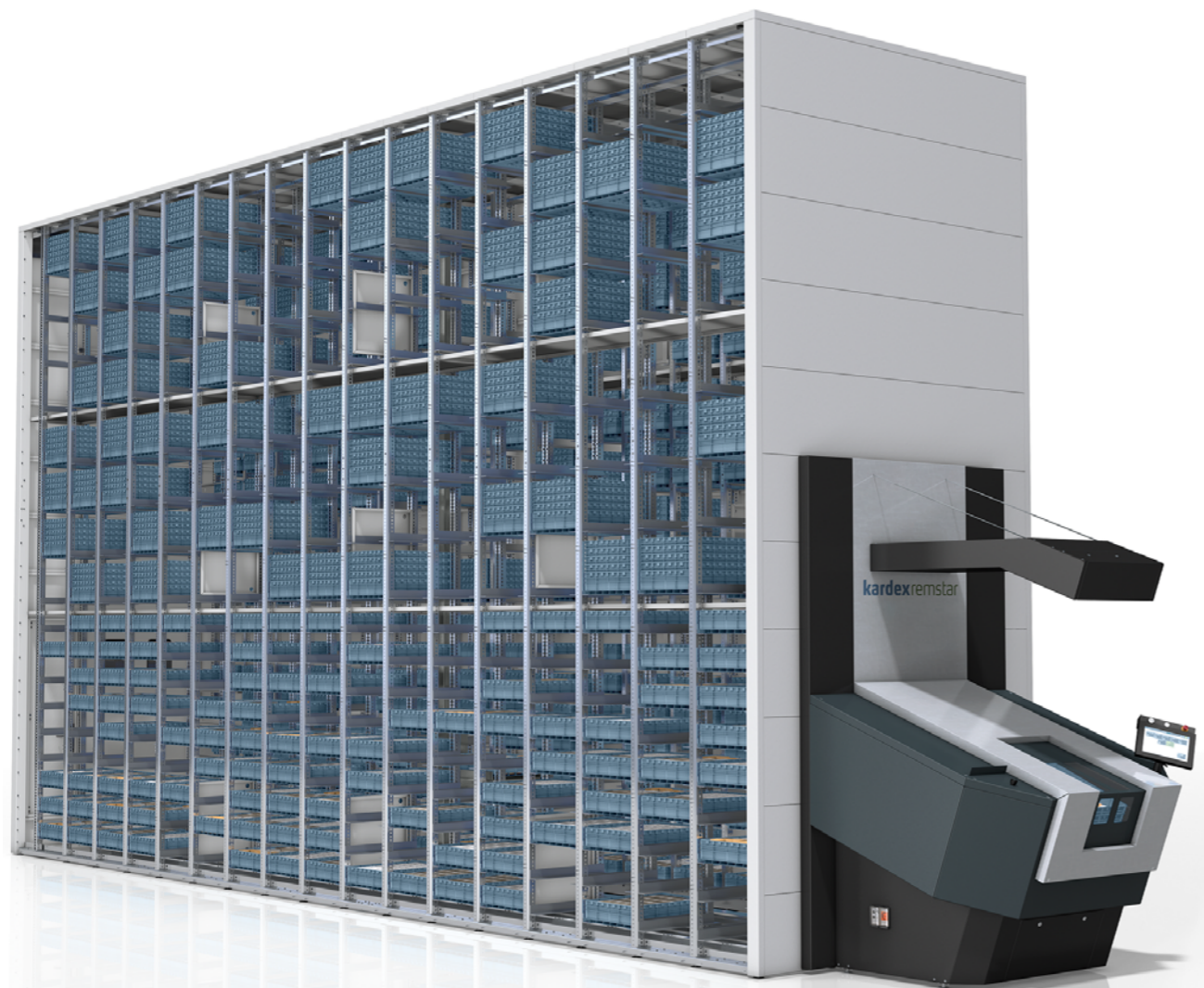
Efficient & flexible

Many warehouses with rack systems use picking trolleys with 4, 8, or 16+ bins for batch picking. The Kardex Compact Buffer enables the same concept, adding an additional frame fitted with an interactive put-to-light display.

Users tailor the picking trolley's design to the frame configuration and the number of displays. For example, if a trolley has space for four bins, a frame with four vertically mounted displays on both trolley sides is sufficient. When working with more bins, it's possible to fit multiple horizontal displays to the trolley above or below one another.

Each interactive put-to-light display comprises an alphanumeric digital display and a confirmation button with multiple-colored LED lamps. A single scan is all it takes to connect a new trolley holding empty bins to the frame and its displays. After an operator picks an item and confirms the pick, the LED lamps indicate the bins to put these items. The alphanumeric display shows the relevant quantities. After confirming the "put", the Kardex Compact Buffer returns the storage bin to the rest of the inventory before retrieving the next one.

Quick & compact

A single Kardex Compact Buffer presents up to 150 storage bins per hour, 50% more than the number of trays a vertical lift module presents per hour. It's ideal to have two or more Kardex Compact Buffer units because as an operator picks from a bin in the first unit, the other unit(s) already presents the next bin.

Each Kardex Compact Buffer can have an extra capacitive touch screen displaying picking instructions (e.g., quantity, product code). The screen provides information about additional fulfillment activities such as recording product serial numbers or labeling/packing items. A LED pointer indicates which compartment to pick from when working with subdivided bins.

Since one Kardex Compact Buffer takes up less than 25 m² it's easy to store multiple items within a small footprint. Meanwhile, the height can be up to 12 m. Because bins of different heights fit within the same unit, the storage capacity optimally aligns with the available space, the picking inventory, and the products' dimensions. A single unit can hold almost 2,500 bins based on a bin height of 200 mm.

Easy & practice-based

The software integrates various units and put frames into an efficient solution for fast order fulfillment. Based on best practices, it combines a number of standard software modules. It's straightforward, quick and easy to integrate with an existing ERP or warehouse management system in only a few months.

The software module for storing items in a Kardex Compact Buffer is a good example. It's not build around complex algorithms that calculate the best bin format for each item based on its master data, such as dimensions. In this era of ever-changing product ranges comprising items from hundreds of different suppliers, one cannot be sure about the accuracy and completeness of the master data. Therefore, this software relies on the operator's experience, allowing to select the best bin format and indicate the number of items for each bin.

The software registers all activity times to accurately control stock and apply inventory management methods (e.g., first in, first out). Also to help stock accuracy, each pick is registered. The software then knows when a bin should be empty and asks the operator to confirm.

Modular & scalable

The Kardex Frame Pick System is a modular, flexible and scalable solution. Depending on the product range, the inventory turnover, and customer order patterns, it's possible to configure two, four, or six Kardex Compact Buffer units. With a maximum of six units, the walking distance is limited to less than 12 m.

Companies can start with two Kardex Compact Buffer and simply add more. Furthermore, it's easy to increase the number of trolley positions so workers pick from multiple trolleys at once. A large number of trolley positions makes it more likely that a storage bin will match with multiple customer bins.

The system is scalable both in terms of order picking capacity and storage capacity.

When configuring six Kardex Compact Buffer units in a series, three order pickers work alongside one another at peak times. By using different colors, each operator knows which customer bin to put the picked items into. The blue unit items (as indicated by the colors on the screen) correspond with the displays illuminated in blue. This system is easy to understand, even for new employees, thus eliminating the need for time-consuming training.

The advantages

The Kardex Frame Pick System enables wholesalers and e-commerce companies to take an important step in optimizing their future operations. Automating the fulfillment process for medium and slow movers delivers a first quick-win that forms the basis for further process automation and robotization. If companies want to take things further and also improve the efficiency of the internal transport of customer bins, a conveyor is one option. Another option is an automated guided vehicle (AGV) which picks up and transports the order picking trolleys. The possibilities are endless!

The Kardex Frame Pick System is a fast order solution ideally suited for small movers and medium movers (i.e., products with a low inventory turnover – the long tail). These are currently scattered throughout the warehouse, making picking these items a time-consuming process that entails long walking distances. A compact storage system combined with a fast and efficient order fulfillment solution substantially improves productivity, potentially by as much as 400%.

The Kardex Frame Pick System is not a top-end solution for the entire product range, not least because it is unlikely that all items will fit into the plastic storage bins. However, that's not a problem because this solution is easy to implement in combination with other storage and order-picking systems. If an order includes items from different storage systems, the order is simply divided into part-orders that are picked in parallel. They are then combined into a full order in the packing or dispatch area.

The Kardex Frame Pick System – a total solution

Kardex Compact Buffer, frames with put-to-light, Kardex Power Pick System Life Cycle Service, Bins, trolleys, printers, and additional software optional.

ℹ️ Learn more about order fulfillment

Customer example

Let's look at a real-world example. Imagine that a wholesaler's product range stores 5,000 stock keeping units (SKUs) in 3,000 compartmentalized bins. In a traditional warehouse with a rack system, storage bins would take up 450 m² of floor space. The Kardex Frame Pick System stores them in only 67 m². This equates to an 85% reduction in the required floor space.

Now imagine that this warehouse fulfills around 500 orders with an average of five order lines per order per day. Based on an order picking trolley that can hold 16 orders simultaneously, a traditional warehouse requires eight order pickers. When using the Kardex Frame Pick System, the number of bins presented increases to as many as 300 per hour. After factoring in the walking distance between the two units, the assumption is that this solution boosts productivity of each order picker from 60 order lines an hour to 270 order lines an hour.

Fourfold increase in productivity

Warehouse requires only 2 order pickers

Accuracy rate increases to 99.8%. Nearly no incomplete orders = costs saved
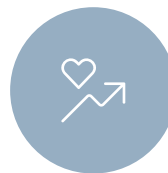
Copes with peaks and extends with growth

Significant improvement in order picking performance

Maximum storage density

Colors and interactive displays eliminate search times

Sourcing a total, integrated solution (including storage system, put frames, software, bins, and service package) from Kardex Remstar means less project management, shorter lead times, and reduced costs. The put frames easily adapt and physically separate order pickers from other warehouse vehicles. These put frames enable the use of cost-effective picking trolleys.

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