Six Ways to Increase Inventory Control

kardexremstar

Automation delivers inventory control

Whether you're managing inventory waiting to be picked for order fulfillment, expensive tooling needed for precision manufacturing or spare parts needed to keep an operation running at peak performance – knowing exactly how many items are on hand, precisely where they are and that they're in perfect condition is the key to a successful operation.

One of the easiest ways to ensure maximum inventory control is to implement an automated storage and retrieval system (ASRS) with integrated inventory management software. Whether an operation has a warehouse management system (WMS), enterprise resource planning (ERP) or manufacturing resource planning (MRP) system in place – or minimal to no inventory management system at all – the integrated inventory management software within ASRS address a variety of operational challenges associated with inventory control.

For better inventory control and to meet lean initiatives, ASRS utilize software that closely monitors inventory levels, eliminating overproduction and unnecessary motion, such as conducting physical stock counts or delays/waiting required by searches for misplaced items.

This white paper explores the six processes in which an investment in an ASRS with integrated inventory management software increases inventory control within warehousing, distribution and manufacturing operations.
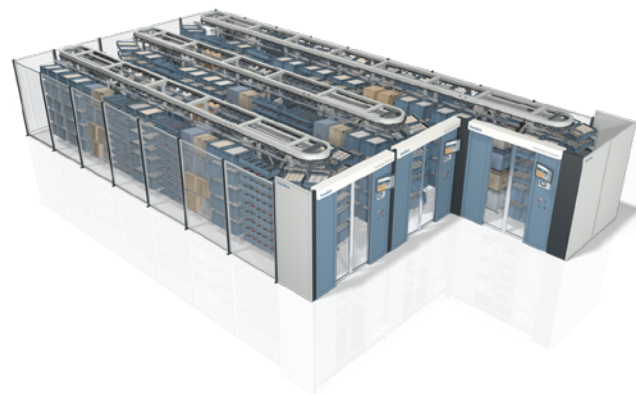
ASRS technologies

ASRS utilize integrated inventory management software to ensure maximum security and control over stored items. Whether you're looking to improve pick accuracy or you need to track and trace your inventory, software and automation are the perfect pair to keep your operations running smoothly. Not only that, but ASRS maximize existing space and increase productivity, delivering a return on investment (ROI) in less than 18 months.

Horizontal Carousel Module (HCM)

Consisting of bins mounted on an oval track that rotate horizontally to deliver stored items to an operator. These automated storage and retrieval systems save up to 60% of floor space when compared to standard shelving and rack.
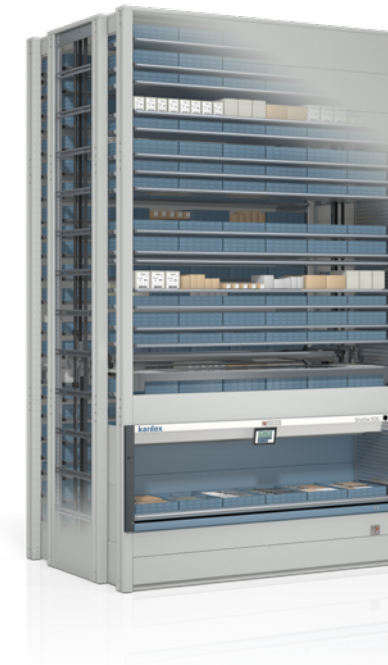
Learn more about HCMs

Vertical Lift Module (VLM)

An enclosed automated storage and retrieval system that incorporates two columns of trays with a central inserter/ extractor that automatically locates and retrieves stored trays from both columns, then presents them to the operator at a waist-high pick window. These systems save up to 85% of floor space compared to static shelving and rack.

Learn more about VLMs

Vertical Carousel Module (VCM)

Comprised of a series of shelves that rotate around a track – similar to a Ferris wheel – these automated storage and retrieval systems quickly deliver stored items to an ergonomically positioned work counter at the operator's command. When compared to static shelving and rack, they save up to 75% of floor space.

Learn more about VCMs

Vertical Buffer Module (VBM)

In the middle of a multi-segment shelving system is an aisle, where a moveable mast with a telescopic gripper operates. The control unit sets the gripper in motion picking a bin and transporting it to a picking station.

Learn more about VBMs
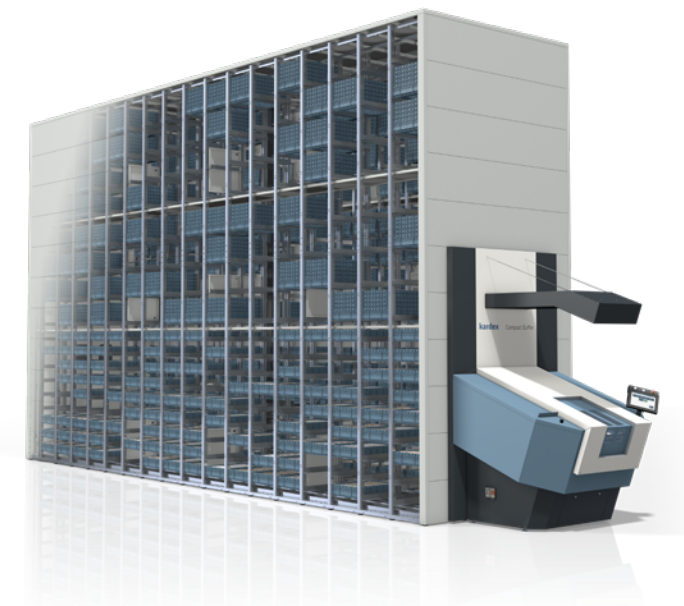
[1] Material Handling Industry, "Glossary>Shelving," accessed June 19, 2019, http://mhia.org/learning/glossary/s#shelving.

Six improved inventory control processes

1. Receiving

Determining how and where received inventory should be stored depends on many factors, including the types of products and by frequency of picking/velocity of movement (fast, medium, slow or very slow). Most operations focus their inventory optimization efforts solely on their fast movers – which typically comprise just 20 percent of their inventory. That leaves 80 percent of inventory (medium and slow movers) available for further optimization and control through slotting.

The slotting process determines the most appropriate place to store each item in a warehouse, including within an ASRS, based on pick velocity. This means fast and medium movers should be in the most accessible areas, while slow and very slow movers should be stored in areas less accessible.

Information from a WMS, ERP or integrated ASRS inventory management software can be leveraged and integrated with the slotting process for even greater inventory control. By ensuring these software systems are interconnected for ongoing communication, repetitive – and potentially error-prone – data entry can be avoided. This also enables broader inventory visibility in real time, resulting in a reduction in search time through faster and easier accessibility. Finally, this integration enables the software to automatically reslot products as needed to accommodate changes in inventory, special promotions or seasonal peaks.

Better organization – to help find the items even faster, partitioned trays or totes can be used for better organization making it easy to locate small components. Further, the inventory management software monitors the status of every item to organize stored products by frequency of picking together, or by their usage association to individual pieces of automated equipment and the maintenance required.

2. Pick accuracy

To ensure the right item is picked, ASRS can be equipped with a range of validation tools. This might include an RF barcode scanner used to capture barcode data associated with an item. The information captured by the scanner is relayed to the inventory management software, which verifies the picked part is the same one required by the order. For facilities requiring an operator to match part numbers or pick items from a specific batch, lot or serial number – visual verification can be tedious, time consuming and error-prone. For these applications, barcode scanning can be used to verify with the inventory management software that the correct item has been picked, saving time and ensuring accuracy.

Alternately, ASRS machines can be equipped with indicator lights to illuminate the item's location and pick quantity required for even higher accuracy. This cuts the time spent searching for a specific stock keeping unit (SKU) within the storage tray. Options include:

Display LED-Navigator
Integrated with VCMs and VLMs, this dynamic pick-to-light technology displays information for the operator. It uses light as a communication tool to provide part descriptions, quantities and other messages to help an operator select the correct item and amount for fulfillment.

ⓘ Learn more about the Display LED-Navigator
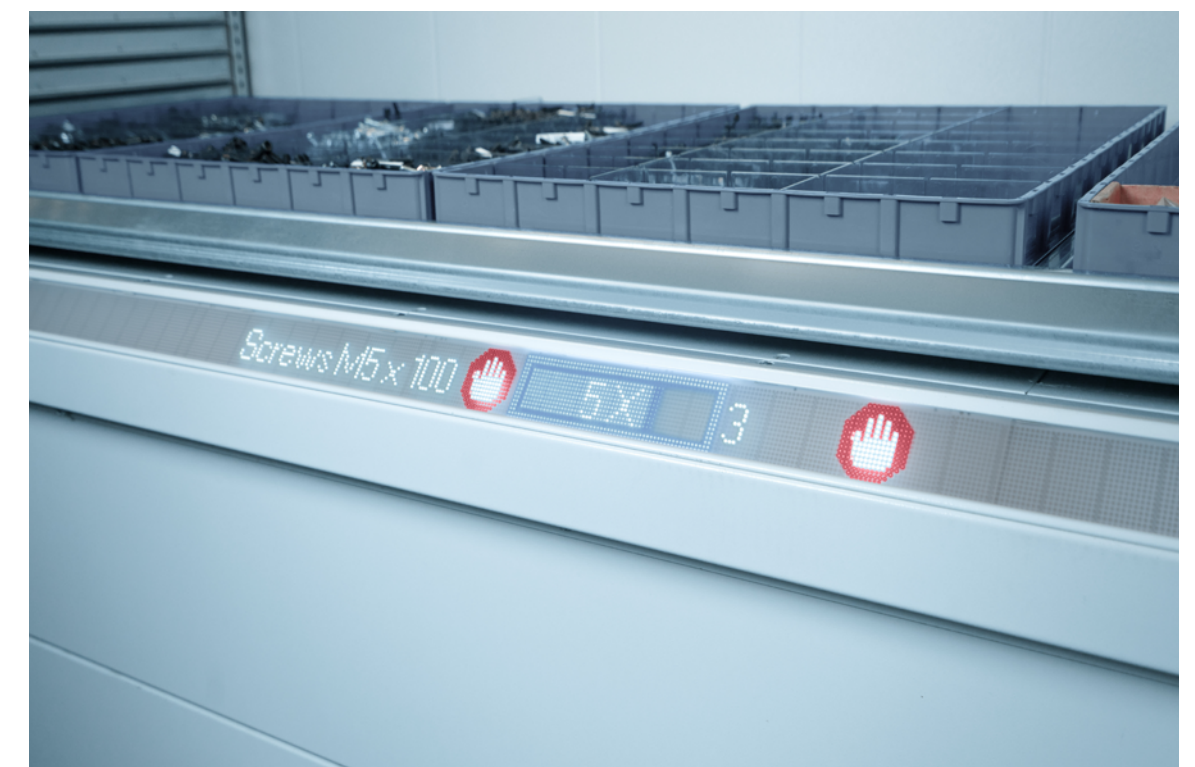
Light pointer
Used with VLMs or VBMs, the light pointer deploys an LED or laser light mounted on a slider that moves horizontally on a guiding system within the access opening of the storage and retrieval unit. Software-driven, the light pointer also swivels to project the light beam in the depth direction of the machine to illuminate any position within the storage tray, tote or bin. The light identifies the precise location of the item to be picked or replenished, eliminating search time.

Position indicator light bar
Incorporated into the access openings of both vertical lift modules and vertical carousel modules, these LED lights illuminate in alignment with the position of the required item where it is stored in the tray.

Item protection – when stored on shelves, parts are exposed to dirt and dust common in distribution, warehousing and manufacturing operations. This shortens their useful life and renders them unsuitable for use – creating scrap and waste. Because ASRS machines can be fully enclosed, the items they store are kept clean and protected. Not only does pick accuracy improve, but the parts picked are always in good usable condition.

Light tower
When integrated with HCMs, this unit houses picking display modules in extruded uprights (towers). The displays indicate the active carousel, shelf level, cell location and quantity to pick. Software-driven, a single light tower serves two HCMs working together in a picking pod.

Put/Batch lights
These light-directed picking modules direct an operator to put or store items in a specific or active location when replenishing stock. They can also be used for order consolidation, batch picking and sortation at workstations located near the ASRS.

3. Track and trace

For highly regulated industries – such as medical devices – the same ASRS inventory management software functionality can be leveraged for its track-and-trace capabilities. That's because the software maintains a record of the item, the date it was picked, the operator who picked it and the order it fulfilled. Should a defect be identified, or a recall required, the software can quickly determine the locations of both stocked and shipped products.

The inventory management software also provides traceability. To access stored contents, authorized operators can be required to first input a software-traceable personal login and password. For operations wishing to keep track of consumables (such as lubricants and filters) or shared tools and gear (from screwdrivers and ratchets to welding helmets and other safety items) required to service equipment, this additional measure of accountability allows depleted, missing or misplaced items to be quickly traced back to an individual.

Theft prevention – in contrast to open shelving which allows anyone passing by the opportunity to grab something off the shelf, an ASRS can be secured, requiring a software-traceable personal login before operation. This allows missing or misplaced goods to be traced back to an individual. The enhanced level of accountability and security eliminates inventory shrink and its negative impact on the bottom line.

4. Replenishment

Since the ASRS inventory management software can keep track of every item within the machine, it can be pre-programmed to send an alert when an item is approaching out-of-stock, triggering a call for replenishment from safety stock stored elsewhere. Upon placement of replenishment inventory into the machine, the software leverages barcode recognition by requiring the operator to scan both the item and its destination to verify placement into the correct storage location. This creates additional inventory control, preventing replenishment errors.

5. Inventory turn

With integrated inventory management software, an ASRS ensures items are picked by pre-set standards to optimize inventory turn. This ensures products are used well before their expiration date, or the oldest items are used first by directing first in, first out (FIFO) or last in, first out (LIFO) picking.

6. Cycle counting

In open shelving spread across hundreds or thousands of square meters, items can simply get lost. It can be a challenge to know how many items are in stock, and their precise location. Regular cycle counts can help account for items but are time-consuming and not up-to-the-minute current. Because an ASRS with integrated inventory management software tracks every item stored within the machine, managers can closely monitor stock levels in real time – and potentially eliminate physical counts – to reduce the amount of inventory they must have on hand.

Case Study

Increased inventory control with automated storage

The 641 sqm maintenance stockroom for Jazz Aviation, in Toronto, Ontario, is responsible for around-the-clock repairs to the airline's fleet of 125 planes.

Jazz Aviation consolidated half of its 20,000 SKUs into two VLMs. The VLMs' integrated inventory management software ensures all transactions are logged and traceable, keeping airplanes and passengers safe. Every SKU received into inventory has a batch, or lot, number. That must be traceable throughout the distribution channel, because it is crucial to know what part and batch number was used in each airplane.

To verify the pick based on the batch number, the operator scans the part before it goes into the order tote, ensuring they have picked not only the right part number, but also the correct batch number. Due to the batch picking and validation process, accuracy has increased to more than 99%.

Software delivers inventory control

Whether an operation has a WMS, ERP or MRP system in place – or minimal to no inventory management system at all – an ASRS with inventory management software, such as the Kardex Power Pick System, delivers a greater degree of inventory control. Scalable, it draws information from one or more machines, as well as can be used as a stand-alone WMS to direct manual picking in static shelving and pallet rack storage applications. Implementing such a software solution gives users enhanced inventory control throughout the six key processes outlined above.

About Kardex

Kardex is a leading intralogistics solution provider of automated storage, retrieval, and material handling systems. With two entrepreneurially managed divisions, Kardex Remstar and Kardex Mlog, as well as corporate ventures (SumoBox, Kardex AutoStore Solutions, Rocket Solution) offering complimentary cutting-edge technology, Kardex developed into a global industry partner.

Kardex Remstar is a global market leader for dynamic storage, retrieval, and material handling solutions. Kardex Mlog has a leading position in Central Europe for stacker cranes, conveyor systems, and automated material handling systems.
The two divisions are unified under a strong group brand. With over 140,000 installations Kardex has a broad existing customer base that counts on first-class after-sales services.

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