

Industry Guide

Manage Aerospace Inventory



Increase visibility of on-hand inventory

Inventory visibility is the number one priority throughout the aerospace supply chain. It's crucial to track parts throughout their viable life from the minute they are received into inventory to when they are used in production through when they are removed, recycled or disposed of.

When visibility of on-hand inventory is available in real time it allows aerospace companies to become less reactionary and more proactive. Automated storage and retrieval systems (ASRS) integrated with inventory management software and pick verification processes can control access to stored items, improve inventory security and increase picking accuracy.



Keep inventory safe and secure



Improve inventory control



Increase pick accuracy up to 99.9%

Inventory regulations

Aerospace companies often must maintain thousands of SKUs in inventory to support the manufacturing build process and maintenance and repair (MRO) of their products. Strict regulations set forth by the Federal Aviation Administration (FAA) requires aerospace manufactures to keep a documented chain of custody for every part in inventory. Adding to the complexity, every SKU received into inventory must additionally be tracked by batch or lot number, and this information must be traceable through the distribution channel.

This is no small task.

Add to this managing the high-dollar value specialty tools required in aerospace manufacturing and inventory visibility quickly becomes of critical importance within the organization. To meet these unique challenges, aerospace companies are turning to ASRS solutions.



Maintaining inventory visibility

ASRS technology from Kardex Remstar – including the Vertical Buffer Module (VBM) Kardex Compact Buffer, Vertical Lift Module (VLM) Kardex Shuttle, Vertical Carousel Module (VCM) Kardex Megamat and the Horizontal Carousel Module can be integrated with Kardex Power Pick System inventory management software to provide specific features for aerospace operations. ASRS solutions increase inventory transparency and security through:

Preventing unauthorized access

Allow operator access to inventory on specific trays, carriers or pans based on user identification.

Improving control via trackability & traceability

Record inventory transactions and operator activity for improved inventory control.

Increasing accuracy with pick verification

Deploy a pick verification strategy for increased pick accuracy.



Prevent unauthorized access

Keeping inventory safe and secure from unauthorized personal is imperative. Using ASRS integrated with Kardex Power Pick System inventory management software allows you to approve operator access to specific trays, pans or carriers based on user identification.

When inventory security is critical, the Kardex Compact Buffer is an ideal solution. Unlike other ASRS which restrict operator access by tray, pan or carrier delivered; the Kardex Compact Buffer increases security even further by delivering only one SKU to the operator at the turntable picking station. This creates an enclosed environment to manage aerospace parts.

Further, with Kardex Power Pick System inventory management software all transactions are recorded and are available by SKU number or user ID via a transaction history report providing inventory transparency in any ASRS while enhancing security.

Improve control via trackability & traceability

Inventory control comes in two forms: trackability and traceability. While these terms are often used interchangeably, when it comes to inventory management trackability refers to the control of the SKU while traceability refers to control of the operator’s activity.

Trackability

Inventory tracking is SKU specific record keeping – tracking the SKUs movement from the point of receipt to its point of departure. For safety it’s often required to keep detailed records of the SKU (often including lot and batch information) used in each aircraft build or repair. Trackability aids in quick action during safety recalls - ensuring easy access to inventory data.

For highly regulated industries, such as aerospace, Kardex Power Pick System software can generate a complete record of the part, the date it was picked, the operator who picked it and the order or kit it fulfilled. Should an issue be identified, or a recall required, the software can quickly determine the location of both stocked and shipped parts.



Traceability

Inventory traceability is more operator specific. Capturing information about whom within the facility picked the SKUs for an order or kit allows aerospace facility managers to hold people accountable. This information can be detailed by operator or by SKU number. If there are inventory discrepancies, this data is valuable to track down where and when an error occurred.

Kardex Power Pick System inventory management software provides traceability through operator access. To access stored inventory, operators can be required to first input a personal login and password or scan an ID badge. For aerospace manufacturers using expensive specialty tools, this additional measure of accountability allows depleted, missing or misplaced tools to be quickly traced back to an individual. This significantly minimizes downtime on the production line and saves money replacing lost tooling. Reporting on transactions by operator also allows organizations to quickly identify and rectify operator performance issues.

Lot & qualification module for consignment inventory

It’s increasingly common for aerospace companies to manage inventory on consignment from multiple suppliers. ASRS is a secure storage solution which allows facility managers to maintain control of all inventory on hand, but when integrated with Kardex Power Pick System inventory data can be segmented by multiple suppliers. The Kardex Power Pick System provides a Lot & Qualification Module to assign a qualification corresponding to an owner for each quantity stored in the ASRS. Inventory levels can be tracked by owner and picking activity can be restricted/assigned to specific users based on these qualifications. This enables the Kardex Power Pick System to support consignment stock and other forms of inventory ownership within the same ASRS unit.

Increase accuracy with pick verification

Whether kitting for manufacturing or picking a part for an aircraft on the ground (AOG) in need of repair, accuracy counts. Additional pick verification methods can simplify pick confirmations and further increase picking efficiencies for the aerospace operations where pick accuracy is critical. There are different approaches for pick verification, all of which add value and increase accuracy.

Scan verification

Using automatic identification and data collection (AIDC) technologies, such as handheld or fixed-location radio frequency (RF) scanners or camera-based imagers to instantly validate an item based on its barcode will dramatically increase accuracy. These technologies can read barcodes on pick lists, single items or full totes to verify the item the operator has picked is indeed the right item required for the order or kit being fulfilled. This reduces human picking errors and speeds up (or eliminates completely) the need for a quality check later in the picking or kitting process.



RFID

With RFID verification, information is coded into a small tag or label using an integrated circuit and antenna. Data is then captured by an RFID reader using radio waves and transferred to a host data system. Unlike barcodes, data from an RFID tag can be captured without line-of-sight.

RFID can be beneficial throughout the entire aerospace supply chain. This provides visibility to the location of a part throughout its viable life from the minute it is received into inventory to when it is used in production through when it is removed, recycled, or disposed of.

Picture database

The Kardex Power Pick System has a picture database module providing photo verification in the picking process. It's easier to identify items with a visual photo instead of a line item with a long part number and difficult part name. With a database of photos taken of each SKU in inventory and connected to Kardex Power Pick System inventory management software, the picker has a visual reference right next to them on a display for quick verification. While this is less automated than the other methods, when implemented together, accuracy gains are higher overall.



Automation for aerospace stockrooms

Converting a stockroom with traditional shelving to an automated operation using ASRS also ensures quick access to parts and can save up to 85% floor space. This reduces walk and search time spent looking for MRO parts when AOG are waiting for repair.

Integrated pick-to-light technology directs the operator to the right part, reducing picking errors and increasing picking accuracy up to 99.9%. Using scan verification, the system can require the operator to scan the part before placing it into an order tote, ensuring they picked the correct part and batch number. The batch number is documented, allowing companies to trace each batch number to an order and then further to the repair.

Again it's possible to limit access to inventory on specific trays, totes or carriers (containing sensitive SKUs) within an ASRS to authorized individuals for increased security, keeping inventory safe from unauthorized users.

Automation for aerospace manufacturing

Automating the kitting process with ASRS tightens inventory security while better supporting your manufacturing line. Whether kits are filled on demand or they are buffered until required, batch picking can increase productivity. Batch picking utilizes a table or cart, known as the batch station, outfitted with order totes and put lights. This enables multiple kits to be built at one time during the picking process. Items are simply distributed among the totes as directed by the put lights. Once the kits are complete, they can be delivered to production immediately or buffered in the ASRS until required by manufacturing.

Integrating ASRS on the manufacturing floor can save time and increase productivity. This allows for inventory to be kept at point of use. Operating on the goods to person principle, inventory is brought directly to an operator with the push of a button. By eliminating walk and search time associated with traditional shelving, ASRS improves productivity by 2/3.



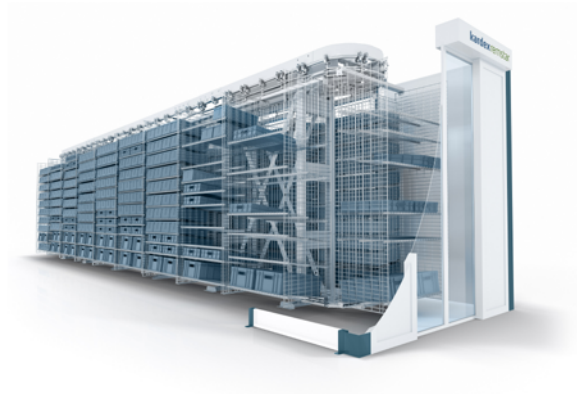
Inventory management practices

Aerospace companies need strategic inventory management practices to maintain visibility of inventory, become less reactionary and more profitable. By leveraging ASRS technologies integrated with Kardex Power Pick System inventory management software and pick verification methods, aerospace companies can improve inventory security, control access to stored items and increase picking accuracy up to 99.9%. Available ASRS technologies include:

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.

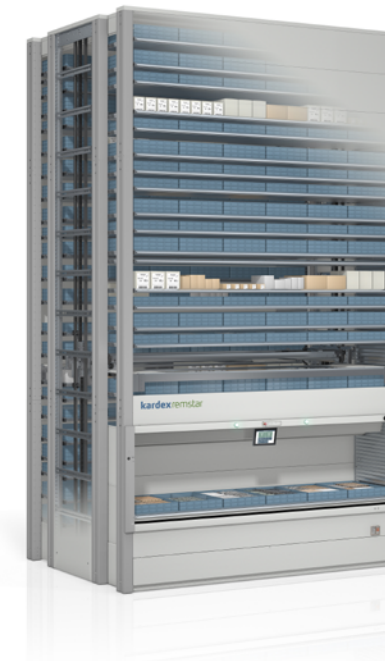
[Learn more about HCMs.](#)



Vertical 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 Lift Module (VLM)

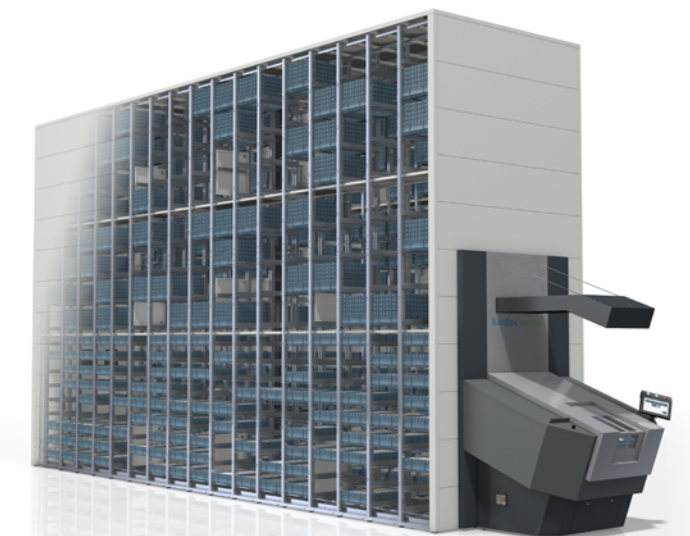
An enclosed automated storage and retrieval system that incorporates two columns of trays with a central inserter/extractor that automatically locates and retrieves stored trays from both columns, then presents them to the operator at a waist-high pick window. These systems save up to 85% of floor space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

[Learn more about VLMs.](#)

Vertical 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.](#)





Meet Kardex Remstar

As a global leader in intralogistics, we can customize a solution to optimize your aerospace manufacturing operations. Our ASRS solutions with integrated inventory management software and reporting tools are designed to help you efficiently manage your inventory – providing controlled access to stored items, improved inventory security and increased picking accuracy.



Contact a specialist