

Solution Guide

Maintenance & Repair Operations





Minimize machine downtime

Competitive manufacturing requires shorter production lead times and less inventory, making equipment utilization more important than ever. With advanced design and technology, today's machines are being called upon to increase manufacturing capabilities. Gone are the days with one eight-hour manufacturing shift. Many automated facilities today run production machines through the night with very few machine operators.

In an industry where time really is money, the challenge is limiting machine downtime on the manufacturing line; making machine maintenance and repair a valuable operation. When the manufacturing line goes down, an organization's ability to react quickly and minimize downtime can have a major impact on the bottom line.

The benefits of automation for maintenance and repair operations (MRO)

Having maintenance and repair parts in stock and readily accessible at all hours is critical. Using a Kardex Remstar automated storage and retrieval system (ASRS) to manage maintenance and repair parts increases inventory control, minimizes manufacturing line machine downtime, reduces part damage and improves part accountability and accuracy.



Increase inventory control



Minimize machine downtime



Reduce part damage



Improve part accountability & accuracy

Automation for MRO

To increase maintenance technician efficiency and reduce manufacturing downtime, organizations need better control of their maintenance and repair parts inventory. With automation, maintenance and repair parts can be inventoried, stored and retrieved from one location providing increased inventory control and greater efficiency.

Kardex Shuttle

With a Vertical Lift Module (VLM), parts are stored on a tray within the unit. When a part is needed, the technician simply scans a barcode or enters a part number and the part is automatically delivered to an ergonomic access for retrieval.

Kardex Megamat

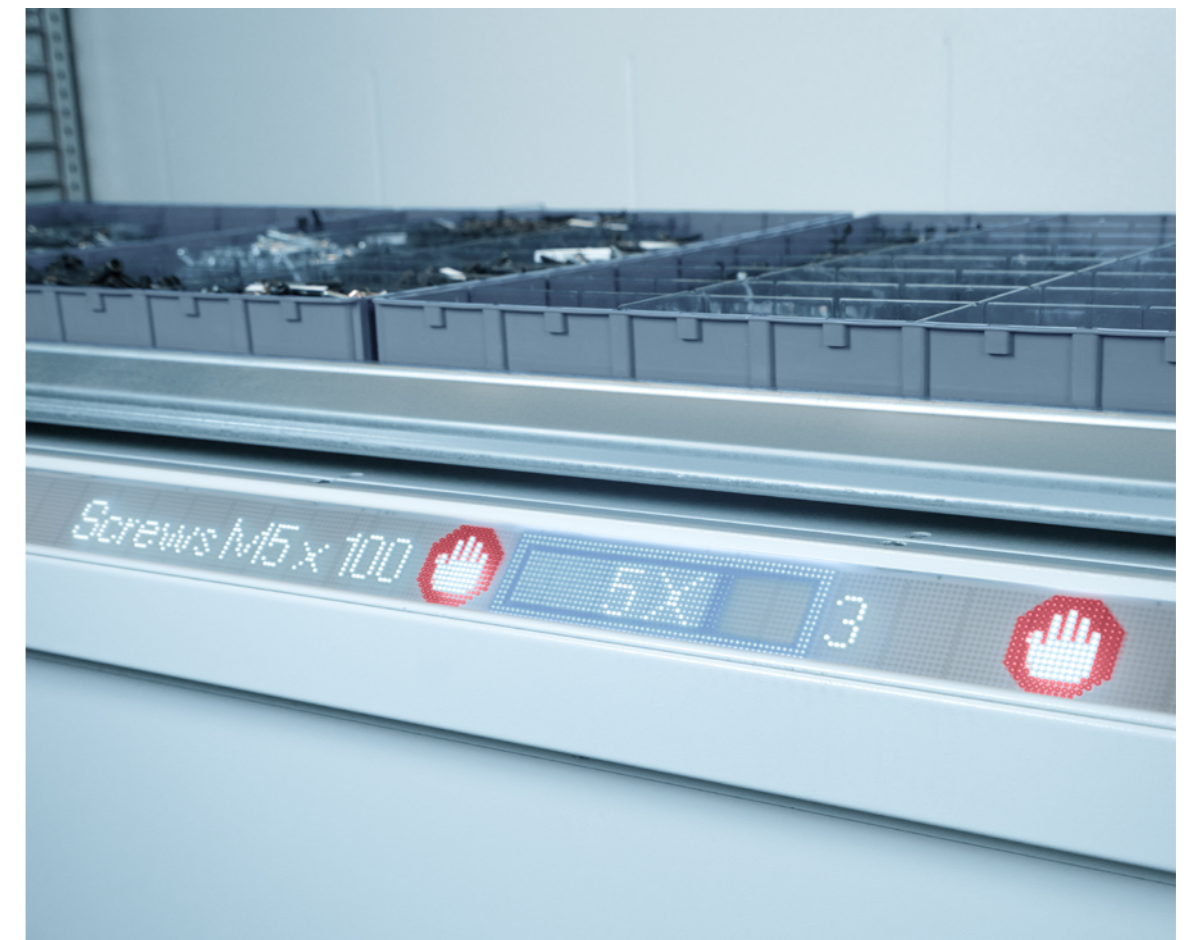
Using a Vertical Carousel Module (VCM) a series of carriers mounted to an oval track rotate in a vertical motion bringing stored items directly to an operator. Carriers can be configured to accommodate everything from nuts and bolts to heavy gears or motors.

Kardex Power Pick System

Integrating Kardex Power Pick System can easily interface with your existing maintenance system to streamline your MRO inventory management for increased accountability and minimized machine downtime.

Maintenance & repair operations system comparison

	Optimum unit height	Technician productivity	Inventory accuracy	Ergonomic accessibility	High density
Vertical Lift Module	> 20	Best	Best	Best	Best
Vertical Carousel Module	> 7	Best	Best	Best	Best
Drawer System	< 5'	Good	Fair	Fair	Fair
Shelving System	< 6'	Fair	Fair	Fair	Fair





Why automate MRO

Increase inventory control

Inventory control is a top priority in maintenance and repair operations. When parts are stored on open rack and shelving, free for the taking, inventory can be easily misplaced or taken without documentation. If a manufacturing line goes down and the necessary parts for repair are missing, it will cost your operation time and money waiting for another replacement part. When stored in ASRS, inventory is in an enclosed system and all inventory is tracked, eliminating the chance of misplaced parts. Further, access to high value parts can be limited to specific users, increasing control and security.

Minimize downtime

The longer a machine is down for repair or maintenance, the more revenue lost on the manufacturing line. Typically, maintenance technicians diagnose the problem, then spend time searching through rows of shelving or drawers for the required part while the machine remains inoperable. Using ASRS, the maintenance technician can find the part, clean and ready to use and get back to their repair work, minimizing machine downtime and getting the manufacturing line back up and running faster.

Reduce part damage, shortages & waste

The Kardex Power Pick System provides real time inventory reports, with an up to the minute view of your repair parts inventory. Reorder quantities can be set by part number. When the part quantity dips below the reorder quantity, purchasing is alerted to reorder the part, eliminating part shortages. Further parts are kept clean and in usable condition eliminating part waste due damage or rust.

Increase accountability

Further, by integrating the Kardex Power Pick System inventory management software with a Kardex Remstar ASRS technicians can be required to login before retrieving a part. By entering a user identification number, software can track exactly what parts were used by which technician. This improves technician part accountability and ensures technicians only take what they need. The Kardex Power Pick System can be integrated with plant maintenance software for increased visibility into the entire operation.

Increase maintenance technician efficiency

Scheduled maintenance is an important step in preventing machine failures. An ASRS can aid in planning scheduled maintenance by storing multiple parts together as a "kit" to be used for scheduled maintenance. The scheduled maintenance kit ensures that technicians have all the parts required before they begin, preventing stopping halfway through to search for an additional part, increasing overall maintenance technician efficiency.

Recover floor space for vendor managed inventory

Vendor managed inventory (VMI) often requires a special storage location separate from the other MRO tools and supplies being stored. In a manual system, this leads to wasted floor space. When automation is implemented, specific trays or carriers can be reserved for VMI in order to free up floor space for other value added activities while still keeping the inventory separate from other vendors.

ASRS in action

Due to the high value of the equipment on a manufacturing line, and the potentially high costs associated with their downtime, many companies invest in a team of in-house MRO professionals in charge of supporting these production lines. As a result, companies also need to invest in a certain amount of preventive maintenance supplies, tools and critical spare parts.

Large-scale automation solutions providers typically recommend a package of key spare parts to keep on hand. Having the parts somewhere in the building, unaccounted for and in potentially questionable storage conditions, can leave them prone to becoming lost or damaged.

Instead of a dedicated storage area open to pilfering on off-shifts, automated storage and retrieval systems can be a high-density solution to protect and track this inventory around the clock. Further, ASRS can consolidate inventory into an extremely compact footprint, leaving valuable square footage available for profit-generating purposes, rather than facilities support.

From small parts and tools to large motors and dyes, ASRS can manage a wide variety of inventory for maintenance and repair on the manufacturing line. In addition, consider storing PPE (personal protective equipment) such as goggles, gloves or other safety equipment so everything is available in one centralized storage location. In larger facilities, ASRS can also be a great solution for point of use inventory storage, placing units in key locations around the production floor for faster response times.