

CONSIDERATIONS FOR PURCHASING USED AUTOMATED STORAGE AND RETRIEVAL EQUIPMENT



ASRS

AUTOMATED STORAGE & RETRIEVAL SYSTEMS

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When considering the purchase of used Automated Storage and Retrieval Systems (AS/RS), it is important to consider all of the factors that may affect cost and operation. A used machine may not be compatible with existing infrastructure such as electrical supply and data networks, and could potentially require costly updates in order to meet current codes and safety standards.

This white paper has been published by the Carousel and Vertical Lift Module (C/VLM) working group of MHI to provide guidance when considering a used carousel or vertical lift module. Our goal is to help equipment buyers make the best decision possible through information and education.

Consideration #1: Condition

The first consideration should be the current condition of the equipment, regardless of its age. Do not assume that a newer unit is automatically in better condition than an older machine. Routine maintenance, usage intervals and environment have a greater impact on the condition of a machine than the calendar.

A newer machine that sees continual usage for three shifts a day, seven days a week, 365 days a year will have much greater wear on components than an older machine that is used only sporadically. Maintenance plays a vital role in the condition of a piece of equipment. A machine that has been under a preventive service contract its entire life will be in much better shape than one that has only been repaired in the event of a breakdown.

The workload of the machine plays a large role in its maintenance requirements. The average weight of the items stored in the machine should be within the rated capacity of the unit. The daily operation of the machine should match the rated duty cycle of its motors. Components will wear faster if the machine is operated at the limits of its rated capacity and beyond. Knowing the operational and service history of a unit is therefore very helpful in determining its current condition.

The environment in which the machine was installed also plays a role in determining its potential condition. Ensure that the unit was well protected from the elements. The environment surrounding the machine should be maintained within the temperature and humidity levels recommended for the motors and electronic components. If the machine was operating in a relatively dirty environment such as a factory floor or machine shop, extra cleaning and maintenance are required. A machine may be cleaned and repainted to prepare it for resale, so it is important to check the service history with the original equipment manufacturer.

The most reliable way to determine the condition of used equipment is research and inspection. A reputable reseller should be familiar with the machine's history and be willing to share the details of its use. They may also put you in contact with the machine's previous owner. By providing the serial number to the original manufacturer of the machine, you may be able to obtain a service history report, original manufacture date, and original install date among other valuable information.

A thorough inspection of the machine should be performed by a factory-trained and authorized service person. Only someone who is familiar with the operation and maintenance of the machine is capable of determining if it has been properly maintained and is capable of proper operation.



Consideration #2: Configuration

Most automated storage and retrieval equipment is designed to be physically compatible with the needs of the original installation. Moving AS/RS equipment to a new location may require expensive and time-consuming reconfiguration.

The carriers (shelves) of most AS/RS units are designed to accommodate the size, weight, and layout of the items stored by the original user. Most dividers and bins can be reconfigured or replaced, but some are permanent and may not accommodate new equipment or additional weight.

A carousel can contain several hundred trays or bins that can be expensive to replace if they do not match your size requirements or labeling needs. The cost of replacing a large number of bins can often offset the savings of buying a used machine.

Most units feature a standard-height access point for ergonomic reasons, but custom locations and dimensions are not uncommon. If you have requirements such as forklift access, overhead crane access or wheelchair access, these modifications to a used machine may significantly impact the cost and complexity of retrofitting a used machine.

Machines are often constructed of several large sub-components. Be sure to verify the size of a unit's components to ensure that they can be transported to your desired installation site. A machine originally installed in a warehouse with large doors and a loading dock may not break down small enough to be used in an office building.

Other equipment details such as the location of the service doors, electrical requirements of the motors, lighting and seismic considerations may also play a part in determining how much work will be required to make a used piece of equipment work in your location.



Consideration #3: Safety

Safety should be the most important factor when considering the purchase of used carousels and vertical lift modules. Never accept any equipment that has missing or inoperative safety protections.

Ensure that all safety systems that the machine was originally equipped with are in place and operational. If any safety system has been bypassed or removed, it must be restored to proper operation before the equipment can be put back into service. All warning labels and instructional placards must be in their designated locations and be clearly visible and legible.

Older equipment may not adhere to the latest OSHA and ANSI safety standards. An older machine could require extensive updates in order to be compliant with current regulations. Be certain to check your local codes to ensure compliance.

Older equipment may not have the latest developments in ergonomics, lighting, ease of use, access position and user interface. These features may reduce the productivity of the machine and hamper adoption of the equipment by employees. These factors must be taken into consideration when considering new equipment vs. used.



Consideration #4: Maintenance and Support

All mechanical equipment should receive routine maintenance, and may require ongoing technical support. It is important to determine what level of service you will have available for a used machine.

Most machines require expert installation by a factory-certified service technician. Certified personnel may also be required for setup assistance, programming and training. Older machines may not be eligible for these services, so check with the seller for information on third-party service and support available in your area.

The age of used equipment often affects the availability of spare and replacement parts. Before purchasing used equipment, be certain to investigate the availability of parts for the model that you are considering.



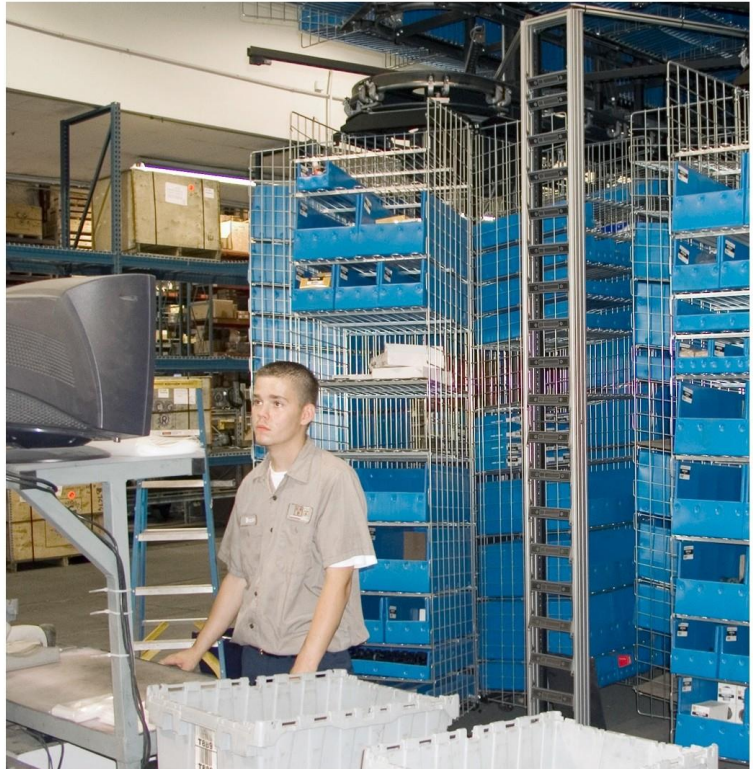
Color touchscreens, barcode scanners and RFID identification are just some of the many options available to boost the productivity of today's automated storage and retrieval equipment.

Consideration #5: Productivity and Compatibility

Used machines will not offer the same level of productivity, safety, inventory management options or security as a newer model. Operating costs including electrical consumption, routine maintenance and labor costs, which can increase the lifecycle cost of a used machine. Older machines may not be compatible with the latest computer technology as well.

Older machines may lack the necessary interfaces, connections and controls to interface with modern computer networks. Integration of an older machine into a modern ERP software system can be difficult and cost-prohibitive. Have a systems integration professional compare the technical requirements of your installation with any potential equipment to determine compatibility.

In addition, older units may not be compatible with time- and money-saving innovations such as batch processing, lending management, password access and minimum inventory levels. Be sure to include the improved productivity, security and operating cost of a newer machine when considering the cost of purchasing used equipment.



They also may not be compatible with other material handling equipment currently in use at your facility. Present-day badge readers, barcode scanners, pick-to-light systems, label printers and RFID systems may not interface with an older machine.

Consider how critical the operation of used equipment will be, and the value of the inventory stored within. Used equipment will not feature the redundancies and bypass systems of newer equipment and may not remain safely in operation in the event of a system fault.

Conclusion

When considering a used carousel or vertical lift module, the purchase price should be one of several important factors to consider. Installation, ongoing maintenance, upgrades and performance are all key factors in determining the true cost of a machine.

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