

# Different Automated Storage and Carousel Storage Solutions



Many small retail warehouses used to be unable to afford **automated storage** or **carousel storage solutions**. They didn't have the funds or the know-how to purchase such cutting-edge equipment. Automated storage systems, on the other hand, have swiftly evolved to provide a number of alternatives as time has passed. **Carousel storage solutions** have grown popular even among small businesses due to changes in speed, size, affordability and versatility.

Do you have any doubts about whether automated storage and retrieval systems are appropriate for your facility's operations? We've put together a lot of information below to help you figure out if this high-density storage system can help your warehouse run more efficiently, including the many types of storage systems and their uses.

## What is an Automated Storage and Retrieval System (ASRS)?

An automated storage or retrieval system is a high-density storage system specifically intended for storing and retrieving products on-demand in warehouses or facilities.

As previously indicated, this systematic technology includes cranes, **vertical lift modules**/vertical lift machines (VLMs), vertical carousels, shuttles, mini, micro and unit loads. Furthermore, using specialised warehouse management software the mentioned storage systems are controlled.

## Benefits of Installing an Automated Storage System

Integrating this automated storage system, facilities can complete daily inventory storage and retrieval activities.

Aside from that, there are plenty of other advantages, including:

- Taking advantage of the facility's underutilized vertical space
- Efficient use of the floor space
- Higher Inventory control and storage management
- Increased productivity
- Workplace hazard and accident reduction
- Increased output and improved outcomes
- Lowered Labor costs with better security.
- Better picking rates and accuracy

Applications of the Automated Storage and Carousel storage solutions

- **Goods to Person operating principle**

Picking up orders, packing them and processing them is without a doubt one of a warehouse's most time-consuming processes. Picking up orders manually can take up to half the time it takes to sort the ordered item. For its Goods to Person Ordering Picking principle, automated storage systems are a superior addition to such a method. The picker does not have to seek around for the selected item in this mode of operation. On the other hand, the picker can easily organise the products using a crane, shuttle, VLM or vertical carousels

- **Speeding up shipment order processing**

It is impossible to overestimate the importance of e-commerce shipping in order fulfilment operations. Customers can now place orders at any hour of the day or night. Previously, a number of e-commerce firms had to operate under certain restrictions. Variations in operator shifts like night or weekend delivery shifts were the reason behind such restriction. Companies can no longer operate 24 hours a day, seven days a week. All thanks to the **automated storage** system. After hours of operation, the system places the products in temporary storage for processing until the shift resumes. Even when orders do not physically leave the storage facility, the company does not lose orders and can continue to create.

- **Managing the buffer storage**

Every process in a typical warehouse takes a varied amount of time to complete. Mishandling of the inconsistencies disrupts the entire process of the warehouse. **Automated storage** systems try to avoid such breakdowns by ensuring that enough supplies/products are available at all times to keep things functioning smoothly.

- **Efficient storage**

One of the most important features of an AS/RS is its ability to store goods in a way that makes effective use of available space over time. Installing an AS/RS automates the process of long term product storing and retrieval. Facilities can smartly use or optimise inventory based on information such as batch number, lot number and so on by combining the automated system with warehouse management software.

## **The Different Types of High-Density Automated Storage Systems**

Unit load AS/RS and mini-load AS/RS are the two most common types of automated storage systems. Aside from them, there are six different types of storage systems to consider.

- Unit load for ASRS system (crane) (Both Fixed-Aisle and Movable Aisle)
- Mini load System for **automated storage** and retrieval (crane)
- Shuttle or AS/RS robot
- Automated system carousel (Vertical Carousel, Horizontal carousel and robotic horizontal carousel).
- Vertical Lift Module or Vertical Lift Machine (VLMs)
- Microloaders

Let's explore each one in detail

- **Unit Load for ASRS System (crane)**

This type of ASRS system is useful for handling exceptionally bulky and heavy loads. The storage system's high loading capacity allows it to handle both pallets and cases. This system consists of a narrow aisle rack that can move up to 100 feet in order to retrieve the stored products (pallets) as needed.

- **Fixed-Aisle ASRS**

This type of ASRS easily handles exceptionally heavy and bulky loads. The storage system's high loading capacity allows it to handle both pallets and cases. This system consists of a narrow aisle rack that can move up to 100 feet in order to retrieve the stored products (pallets) as needed.

- **Movable Aisle ASRS**

This system is quite similar to the fixed unit load ASRS and functions in a very similar way. A crane moves between short aisles of pallets along a predefined path in this storage facility. This also allows the crane to traverse down many aisles, increasing productivity.

- **Mini Load System for Automated Storage and Retrieval**

The Mini Load [automated storage](#) system easily handles smaller loads in contrast to unit load ASRS. They are capable of handling small trays or boxes in place of whole pallets. Therefore, for applications like storing large stock units, this system is highly effective. This design, on the other hand, lacks the necessary floor space for standard carton flow shelving.

- **Shuttle or AS/RS Robot**

A robotic shuttle running between racking structures is known to distribute items or stocks in a shuttle-based storage system. They can operate on single or numerous levels, depending on the operation's protocols. Accordingly, the shuttles are primarily responsible for delivering trays or boxes to the system's integrated working station.

- **Automated System Carousel**

Carousel-based systems have a product or inventory bins that revolve constantly along a track. The system would rotate to bring the proper bin of a particular item that needed to be chosen at the operator's request.

This carousel-based ASRS has either horizontal carousels (storage bins that move horizontally in a circular motion) or vertical carousels (storage bins that move vertically in a circular motion) (storage bins that move vertically like a Ferris wheel). Another type of storage device that serves the same functionality is robotic horizontal carousels.

- **Vertical Lift Module or Vertical Lift Machine (VLMs)**

A vertical lift module (VLM) is a closed system with a central extractor and trays columns on either side. The goods-to-person principle is used by vertical lift modules.

The inserter or extractor locates the appropriate tray and delivers it to the operator for order completion in response to the operator's request. After the order is complete, the vertical lift module will restore the tray to its proper spot before delivering the next tray.

- **Microloaders**

Micro Load stocker ASRS can help store and retrieve individual trays or cartons. In a high-density footprint, this technology is ideal for buffering and sequencing. Micro loaders have a centrally situated inserter/extractor device that selects a specified inventory sequence. They are then discharged onto the processing conveyor that has been waiting for them. Varied models, on the other hand, have different techniques of storing and extracting by taking one or a group of roughly five elements at a time.

## Automated Storage and Carousel Storage Solutions: Right for Your Facility?

The success of integrating an [automated storage](#) and retrieval system into your warehouse operation is primarily determined by your company's goals. The business cycle, operational goals, amount of growth or progress and investment are all factors that influence your requirement to use this system.

If you're interested in purchasing one, it's a good idea to contact well-known high-density storage companies like vertical carousels Australia. Above all, it would be beneficial to consult with your warehouse design team to determine the best carousel storage options for your operation.

**Reference:** <https://www.verticalcarouselsaustralia.com.au/different-automated-storage-and-carousel-storage-solutions/>

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