

Automated Storage & Retrieval Systems for 3PL Cold Storage Applications



Whether you are storing products manufactured by your own company or handling your customer's products, some things always remain true. Goods should be stored in a way that is organized and efficient without taking up too much space. Plus, orders should be filled quickly and accurately with minimum labor costs.

Since the 1960s, companies around the globe in a variety of industries have improved their operations by using Automated Storage & Retrieval System (AS/RS) technology. AS/RS is a combination of equipment and controls that handles, stores, and retrieves materials with precision, accuracy and speed. Configurations include pallet and tote handling. An AS/RS enables companies to recapture floor space, improve efficiency and ensure inventory control.

Applications range from order fulfillment of full pallets to consolidating rainbow pallets or boxes with mixed SKUs.

AS/RS Benefits:

- Organized Facility (Goods are accounted for and easily accessible)
- Inventory Control (Errors reduced)
- Consistent Product Handling (Less product damage and spoilage)
- Space Optimization (Utilization of vertical space enables a smaller footprint)
- Energy Efficient (Many facilities can operate without lights)
- 360/24/7 Operation (System uptime can be around the clock)
- Removing People from Harsh Environments*

**Additional Benefit of AS/RS in a Cold/Freezing Environment*

AS/RS Customer Examples:

Company names have been withheld to protect the competitive advantage of Daifuku customers.

FOOD RETAILER

To save money, a food retailer outsourced their entire distribution operation to a 3PL. With operations consolidated into one place, the company reduced logistics costs associated with material handling and made their in-store labor more efficient.

The DC was divided into chilled and non-chilled areas. In the chilled area, a Unit Load AS/RS ensures product freshness by retrieving items first in-first out. Items are then picked and placed on flow rack. In the shipping area, products are double checked for freshness using RF technology. Fresh items are distributed to picking carts to be consolidated by store aisle, then onto conveyor, and finally sorted to delivery shoots by shoe sorters. The system is similar for non-chilled products.

By implementing automated technologies, the food retailer's processing capability increased by 40% with a 50% shorter lead time. Stores can now receive needed items same day so less inventory is needed at each store, and because the shipments are organized by aisle, the in-store workload is decreased as well.

COLD STORAGE DISTRIBUTION COMPANY

A large DC aimed to expand its services by offering to handle frozen, cold, and room temperature products. The company guarantees that products will remain at optimal temperature during storage, transportation, and delivery.

The DC introduced a large capacity freezer AS/RS, sorters and picking devices to provide quick, accurate response to customer needs. The Unit Load AS/RS has an input/output capacity of 330 pallets/hour. With the digital pick system, the company processes 7,300 pieces/hour, and the surfing sorter enables 3,500 cases to be sorted each hour.

The forward thinking company also installed a solar power system, which produces enough power to equal the usage of 50 households, and a freezer cycling system that achieves zero ozone depletion and a global warming coefficient of less than 1.

FOOD WHOLESALER

A food wholesaler introduced multiple AS/RS and a picking system to greatly increase efficiency for small lot distribution for its customer, a food co-op. The facility has 4 AS/RS – a Unit Load freezer system, a Unit Load fridge system, a Mini Load freezer system, and a Mini Load fridge system. The 4 Automated Storage & Retrieval Systems automatically replenish the picking stations, which handle 549 different items.

Common Questions:

Q. How long does it take to install and have an AS/RS system up and running?

A. It varies. Each company has to go through the discovery, design, implementation, and testing stages. However, a simple one aisle system may take 8 months once the design is approved. A multi-aisle integrated system will depend on its complexity, but average customer systems take about 9 to 14 months from design approval.

Q. What is the cost of an AS/RS system?

A. It varies based on system requirements, but most Automated Storage & Retrieval Systems have a pay back of 2 to 3 years. Contact Daifuku for a quick budget price based on your company's requirements.

Q. How do I determine if AS/RS is right for my company?

A. Daifuku America Corporation does offer free facility evaluations. Many of our business partners also offer in-depth studies. Data from your facility will be used to determine the best solution for your company's optimal ROI.

About Daifuku

With over 20,000 global crane installations, no one is more experienced than Daifuku at engineering high-performance automated material handling and warehouse management systems, specifically designed to meet and overcome any challenge.

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