

Mercian Corporation



Mercian Corporation is the leading domestic wine makers in Japan. Headquartered at Chuo-ku, Tokyo, Mercian built the new Fujisawa Distribution Center inside the Fujiwara Factory in May 2001. With the health-conscious trend of recent years, the consumption of wine has increased about three times that of ten years ago. Mercian was able to keep up by greatly increasing shipping capability while achieving a significant reduction in inventory and logistics costs. This was accomplished by centralizing all inventory from multiple warehouse locations, the introduction of AS/RS (Automated Storage/Retrieval System), and innovative picking robots.

Mercian cut inventory and lead-time in half while doubling shipping capacity

Mercian has six manufacturing factories in Japan. Located near the greatest consumer area in Japan, the Fujisawa Factory is the company's core production point, making about 60% of all Mercian's alcohol products.

The Fujisawa Distribution Center stores 500,000 cases their over 700 types of wine and alcohol

Fujisawa Distribution Center

- Building Area: 4,960m² (53,389 sq. feet)
- Total Floor Area: 8,640 m² (91,063 sq. feet)
- A Picking Robot with the newly-developed Random Mixed-Load Simulator and Screen Recognition System increased picking capacity about 300% with the maximum of 3,600 cartons per hour
- Unit Load AS/RS with 22 S/R machines and 9,636 pallet storage capacity
- Overhead strong conveyor provides a maximum use of the conventional storage area on the first floor
- 28 high-speed transport vehicle STV's (Sorting Transfer Vehicles) offer key transfer operation between storing, picking, and retrieving



products that are made at the Fujisawa Factory. Based on inventory replenishing commands and shipping commands from the Logistics Control Center and the Eastern Japan Order Center (Kanagawa), bulk items are shipped in pallet units and small-to-medium volume items are shipped in palletized case units to five depots nationwide. Products are then transported to 30 transfer points, achieving next-day delivery service.

In the past, inventory items were stored at multiple locations in the Kawasaki Distribution Center and at their rented warehouses. Increases in rent and internal transportation costs, overstocking due to multiple locations, and increased manual labor for case picking with small-batch shipping continued to be a problem.

The new Fujisawa Center that connects to the production and packing lines was built to 1) reduce logistics costs by centralizing inventory and introducing an AS/RS, 2) handle peak times (twice the shipping volume as in a normal time), and 3) guarantee flexibility as production amounts, types, and delivery systems change. By introducing an automated system with the latest technologies, the

lead-time was cut in half and total automation of case picking was achieved while shipping up to 26,000 cases per day.

Total Automation for “Pallet-to-Pallet” Picking

The special features of the center are the high-density AS/RS and the total automation of “pallet-to-pallet” picking with state-of-the-art robots on the second floor. In the past, the majority of case shipping was done by initially de-palletizing to case units before storing in a buffer system such as a case-storing AS/RS. As shipping requests are received, cases are retrieved and palletized before shipping. By combining the pallet AS/RS and picking robots, the new center achieved a simple and economical system.

On the second floor, 22 S/R Machines were installed at both sides of the picking area. High-capacity S/R Machines and double AS/RS ensure continuous operation should any error occur. For load handling, loop type high-speed transfer vehicles were introduced with the capacity to process up to 1,300 pallets per hour, the highest capacity in domestic systems.

At the picking area, a newly developed mixed load simulator instantly determines a palletizing pattern for ordered items. Based on the results, required pallets are retrieved from the AS/RS in the order of command received. Six high-capacity robots pick items from the retrieved pallets, then palletize into mixed loads for each shipping destination.

The first floor is used as a conventional storage area and shipping handling area. A 16-unit truck berth was built on the side that faces Building 3 to provide fast shipping and to handle peak times with up to 140 truckloads per day.