

Meyer Corporation, U.S.



Established in 1981, Meyer Corporation, U.S. is the largest cookware company in the United States. Widely recognized cookware brands distributed by Meyer Corporation, U.S. include: Circulon, Anolon, Farberware, Rachael Ray, Paula Deen, and KitchenAid.

Meyer Corporation, U.S.'s affiliates around the world include cookware factories in Asia and Europe. The several factories worldwide together comprise the world's second largest cookware manufacturing operation, one that manufactures over 100 cookware lines which are distributed in more than 30 countries. The combined factories employ more than 6,400 people, producing more than 42 million pans per year on average.

As a result of maintaining business growth, in 2007, Meyer Corporation, U.S. began planning for the acquisition of additional distribution space. The goal was to maintain and further enhance the speed and efficiency of shipping a growing range of product to

retail customers nationwide, while maintaining tight control on operational costs. The company wanted to consolidate facilities within a 10 mile radius to streamline business by centrally locating the stock and eliminate expenses associated with maintaining separate buildings. The answer lay in implementing a state-of-the-art automated warehouse designed to double the speed and volume of shipping capabilities in the most cost-effective manner possible. To address this need, Meyer sought out the expertise of Daifuku America Corporation, a leader in the field of material handling providing Automated Storage & Retrieval Systems for a broad range of industries.

The Eleven Story Rack-Supported Building Yields Many Benefits

Daifuku manufactured and delivered a 100 foot tall rack-supported Automated Storage & Retrieval System (AS/RS) comprised of 12 unit load storage retrieval (S/R) machines capable of handling pallets up to 1,200 pounds. In a rack-supported system,



the rack is incorporated into the actual building and serves as its basic structure while seamlessly integrating with the material handling system.

There are many benefits to a rack-supported AS/RS. For example, it allows for the maximum storage density possible, never interferes with the building structure and has the economical and environmental benefits of creating a lights out and possibly non-climate controlled area. In a rack-supported configuration the AS/RS is sheltered from other operations occurring within the facility but integrates with them via transportation systems, conveyor, or fork truck. In Meyer's Fairfield facility, pallets of product move into and out of the lights-out AS/RS storage area by one of four Daifuku Sorting Transfer Vehicles (STVs). The STVs run on a 500 foot looped rail in front of the 12-aisle storage system.

Product Moves seamlessly into the AS/RS

Products arriving at the facility docks are unloaded from trucks, placed on pallets, stretch wrapped and labeled. Fork-lift truck drivers scan the ready pallets and transport them to one of two adjacent AS/RS conveyor input stations. Ultimately, Automatic Guided Vehicles (AGVs), which are equipped with two independent roller bed conveyors, will replace the fork trucks. The AGVs, when operational, will simultaneously deliver two loads to the AS/RS input stations.

Pallets move from the input station and advance to a load sizing and identification station to ensure they will fit within the rack structure openings. The load identification label is scanned. If the load passes the sizing station, it moves to the STV pickup station. An STV is assigned to pick up the load and move it to one of the 12 aisles. Loads are delivered to the storage system in a round robin fashion so that like products are distributed to all aisles. Once the pallet is deposited at the assigned storage aisle, it advances to a pick up station. The S/R machine picks up the load and stores it in an open position selected by Daifuku's WarehouseRx Warehouse Control System (WCS) software. The WCS directs the cranes to pick and put away in the most efficient order possible.

If a load fails the size or identification check, it is picked up by an STV and moved to a reject conveyor spur for correction by a Meyer employee. Once the load is corrected it moves to a sizing check station and then to an STV station for pickup and storage in the rack structure. Two reject work stations are used for this purpose and also for cycle counting and inventory audits. If the two reject work stations are occupied, then rejected pallets are directed to the

jackpot conveyor lane for removal from the system. The jackpot lane is a single roller-bed conveyor, about 80 feet from the inbound conveyor. Pallets are taken to a rework area and quickly re-inducted into the system after corrections are made. This feature allows multiple pallets to be pulled and the product to be reconfigured for special orders.

Double Deep Configurations Provides Additional Storage Density

The unit load AS/RS in this facility is a double-deep system with locations for 66,000 pallets of kitchenware making it one of Daifuku's highest capacity systems installed to date. In such a double-deep system, pallets (usually of the same or similar items) are stored behind one another to further maximize storage capacity. In the Meyer system, the WCS stores pallets randomly and moves the front pallet to another location when it needs to access the pallet in back.

Meyer's high-capacity system processes over 60 pallets per hour and occupies 165,000 square feet of floor space. According to Meyer spokeswoman Cathleen Mandigo, "The equivalent number of pallets in a flat traditional warehouse would have taken up 750,000 square feet."

Despite some conventional handling, the facility is thought to be the largest automated warehouse in the western U.S., according to the Solano Economic Development Corporation. The longest AS/RS aisle runs 675 feet, which makes it the longest system installed by Daifuku America to date. The building and the system were designed to maximize storage along the unique diagonal property line. So while the longest portion is 675 feet, the aisles

shorten as they approach the other side of the building. The shortest aisle is 570 feet.

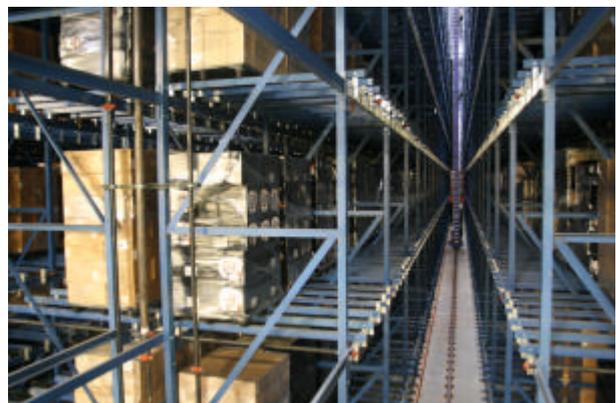
Product Moves Out of the System as Orders Are Received

As orders are placed, the WCS commands multiple storage retrieval machines as needed to pick up pallets and deliver them to aisle output stations. STVs pick up the pallets and drop them off at one of two conveyor output stations. The pallets advance to the end of the conveyor where a fork lift truck (or in the future, an AGV) picks them up and delivers them to the picking area.

Automated System Installation Completed Efficiently

Once the concrete slab was poured and ready, the automated system was installed in six months, and the entire 40 acre project was complete within ten months. In fact, the AS/RS rack was installed 66 days ahead of schedule. Five contractors worked together on the new warehouse for 160,000 man-hours with no injuries during installation.

The finished system will support a 24/7 operation beginning in the summer of 2010, for which Meyer will dedicate 5 employees to support the new AS/RS.



Employees will be charged with maintenance, IT, and warehouse management.

Meyer Considers System Expansion to Accommodate Future Growth

During system planning and installation, business continued to grow. Despite projections that the new storage system would handle the growth of the next five years, Meyer now believes that an expansion of the system may be beneficial within a few years. The company is considering adding additional unit load cranes, which would take up 135,000 square feet of floor space but would allow the company to further consolidate satellite storage facilities.

