

# Liberty Hardware



Founded in 1942, Liberty Hardware, a division of Masco Corporation (Stock symbol: MAS), offers decorative and functional hardware products including bathroom fixtures, drawer slides, knobs, hooks, wall plates, and more. The company sells products wholesale to home improvement stores in the U.S.

## Single aisle AS/RS ensures efficient, cost effective, and secure product handling

To improve operational efficiency in its handling of specialty items in its new warehouse, Liberty Hardware turned to Daifuku America Corporation. Daifuku conducted a study of the existing manual operations and determined that a single aisle mini



load Automated Storage & Retrieval System (AS/RS) would be sufficient to meet their current and future growth operation. The modified operation using AS/RS technology requires fewer personnel to pick orders than Liberty Hardware's previous manual operation, which consisted of multiple people manually picking from many aisles of conventional flow rack.

An additional benefit to the new system is the security the AS/RS provides for expensive inventory. Only the storage retrieval machine (SRM) can access the totes containing product, and only the warehouse control system (WCS) and employees with authorized access know the location of a particular product within the system. Products are tracked as they are added to and removed from the system.

## Original system design allows for expanded capacity

The mini load AS/RS is positioned in the center of the new warehouse. It is 32 feet tall and takes up



Not only does it control the operation of the crane, but it is the intelligent “brain” that directs picking efficiency. For example, the WCS retrieves SKUs that are part of single item orders before retrieving SKUs for multi item orders to ensure high throughput. The WCS interfaces with the Liberty’s own warehouse management system (WMS).

The AS/RS is situated in an area of the warehouse that allows for a second aisle of expansion, if the company’s growth requires increased capacity in the future.

approximately 1,900 SQF of floor space. The long length of the aisle creates 3,520 locations within two opposing racks for the storage of plastic totes, which hold multiple SKUs and fit the majority of Liberty’s specialty items. Totes in this system are color coded to correspond with 3 different location heights. This feature further maximizes the amount of storage within the vertical space.

At the end of the aisle, a u-shaped conveyor interfaces with manual flow rack. The system outputs to 10 consolidation lanes that can each handle up to 10 orders in progress and one additional lane for single item orders.

The system operation is controlled by Daifuku’s WarehouseRx warehouse control system (WCS).