Automated storage and retrieval systems, sometimes known as ASRS or AS/RS, are made of a variation of computer-controlled systems that automatically place and retrieve loads from set storage locations in a facility with precision, accuracy and speed.

**9.18 Billion**
by 2023

**7.37%**
CAGR growth between 2017 and 2023

Source: MarketsandMarkets

### Types of ASRS

**Unit Load**
Machines that store large loads (usually 1,000+ pounds), typically on pallets with storage rack structure, reaching 100 feet or more tall.

**Mini Load**
Operating the same way as a unit-load AS/RS, a mini-load AS/RS handle lighter loads, usually weighing less than 1,000 pounds.

**Vertical Lift Modules (VLMs)**
VLMs consist of a column of trays in the front and back of the module with an automatic inserter/extractor in the center that stores and retrieves the required trays.

**Shuttles**
Shuttles are used for the automated handling of totes, crates, or cartons all in the same system – for either warehousing or manufacturing.

**Horizontal Carousels**
Ideal for storing small parts and pieces, horizontal carousels are comprised of a series of bins that rotate horizontally around a track.

**Vertical Carousels**
Rotating vertically like a Ferris wheel, vertical carousels house a series of shelves or carriers to provide high-density storage.

**Cube Based Storage**
Ultra-high-density goods-to-person piece picking system which utilizes robots to store and retrieve inventory bins from a cubic storage grid.

### Benefits

- Improves throughput
- Increases accuracy levels to 99.99%+
- Increases ergonomics and worker safety
- Provides highest possible storage density
- Provides real-time inventory control
- Decreases labor productivity up to 85%
- Increases manufacturing productivity up to 85%
- Increases product security
- Saves up to 60% of otherwise wasted floor space
- Enhances product security
- Provides real-time inventory control

### Interesting Fact
Every U.S. patent ever issued is stored in vertical carousels at the Patent and Trademark Office.

AS/RS members... Are committed to safety, innovation and providing the right solution to ensure peak performance.

Learn about our 18 member companies, www.mhi.org/asrs.


As/RS members are the Industry’s leading suppliers of automated storage/retrieval systems. They supply systems worldwide in virtually every major manufacturing and distribution sector.

Learn about our 18 member companies, www.mhi.org/asrs.

### COMBINED EXPERIENCE
1,000s
Access to the combined knowledge / experience from thousands of installed systems.

### DIVERSITY & INNOVATION
18
Learn from 18 of the world’s leading AS/RS companies.

### RESOURCES
100s
Hundreds of resources for education and help. Access online websites, www.MHI.org and have direct contact with other members and network at MHI events**.

*Meetings are conducted in a safe harbor environment.
**MHI events include MODEX, ProMat and Spring/Annual meetings and Conferences.