



Automatic Guided Vehicle Industry Sales Projections for 2012 Still Strong

Flexibility, versatility of systems—bolstered by evolutionary advances in controls—key selling points

Continued strong sales of automatic guided vehicles (AGVs) and systems are projected for the remainder of 2012, according to the Automatic Guided Vehicle Systems (AGVS) Industry Group of the Material Handling Industry of America (MHIA). This extends the increase in sales of new, retrofit and expanded systems noted by the group at MODEX 2012 in February.

“In 2011, AGVS member companies saw dollar sales of \$108 million, including 925 vehicles and 130 systems sold,” notes Sarah Carlson of Daifuku Webb and Chair of AGVS. “Compared to 2007—the last year before the great recession—that’s nearly a 25% increase in sales, more than a 70% increase in number of vehicles and more than a 25% increase in number of systems.”

Further, said Carlson, the combined numbers for 2010 and 2011 were particularly strong, with total sales exceeding \$200 million for the two years combined. This represents installation of nearly 1,700 vehicles and 240 systems cumulatively.

“Halfway through 2012, our industry continues to see a high level of interest and many orders already on the books,” says Carlson. “The economy continues to improve and more companies are looking to add automation to further increase productivity and lower their operating costs.”

Manufacturing operations continue to be the primary end users of AGVs, says Randy Winger, Dematic Corporation and Vice Chair of AGVS. “In 2011, manufacturing accounted for 75% of all systems, with the remaining 25% in distribution centers.”

Facilities are investing in AGV systems because of their inherent flexibility and scalability, Winger notes. The bulk of that flexibility can be attributed to a continuous evolution of the controls and software that direct the vehicles’ travel and tasks.

Where AGVs Are Used

Assembly: Moving products through production processes

Kitting: Collecting parts for assembly

Transportation: Loading pallets and loose parts

Staging: Delivering pallets for production processes

Warehousing: Moving products from stretch wrappers to docks or storage

Order Picking: Moving ordered products to trailer-loading area for distribution

Parts/Just-In-Time (JIT) Delivery: Towing trailers of parts/materials to consumption points

Transfer/Shuttle: Transfer loads across high traffic aisles

For real-time control and monitoring of multiple units, the software uses wireless connections to collect data, then interfaces with upper level programmable logic control (PLC) systems or TCP/IP software for destination and routing logic. The software directs the vehicles' travel by wirelessly communicating specific tasks to the AGVs via radio frequency (RF) transponders and tags. Instructions include stops, starts, changing speed, lifting, lowering, multi-point turns, reverses, diverging from the guideway, and interfacing with other material handling equipment and systems—both automated and static.

The flexibility of the controls allows a single AGV model to be outfitted with a choice of guidance system options. The most popular are magnetic tape, magnetic bar, laser and optical sensors. In certain applications, a single AGV might employ more than one guidance system, says Winger. "For example, in a truck-loading application, an AGV will use one guidance methodology outside the truck and a different, more localized guidance methodology once inside the truck."

Today's AGV systems can be reconfigured to new paths in a matter of minutes with the advent of point-and-click, drag-and-drop graphics in the control software, Winger continues.

"It's very easy to pull up a graphical display of the path, make a change and execute the path visually, on screen, to confirm that it will work in your system. Once the new path is set to go live, in less than two seconds the vehicles will start following it," he says. "Conversely, it's very easy to restore the original path if the changes don't yield the desired throughput."

With the advent of Windows-based control systems and software, continues Carlson, users can now obtain more graphical, visual reports that give information about the entire AGV system. The software constantly collects, retains and conveys system data for analysis to help ensure the maximum operational effectiveness of the AGV fleet. "The control software makes it very easy for users to track charging, maintenance, downtime, and other productivity metrics to keep their system performing as it should," she says.

Further, adds Carlson, the AGV units themselves are now equipped with human machine interface (HMI) screens that make it easier to pinpoint, troubleshoot and diagnose any problems that may develop. "The HMI provides specific information about what's going on with that vehicle, whether that is a battery that's low on charge, information about the vehicle's location within its system, or information about what prompted an emergency stop," she says.

Should the issue be beyond the user's capacity to solve, the AGVs and their control software system can also be accessed remotely by their supplier for additional diagnostics and support—all functions that were not available even just a few years ago.

AGVS Industry Group members are the Industry's leading suppliers of automatic guided vehicle systems. They supply systems worldwide and in virtually every major manufacturing and distribution sector. The AGVS Industry Group is a recognized independent authority for end users and suppliers on market trends, standards, technology developments, and applications. Our mission is to promote the market growth and effective use of AGVs in manufacturing, warehousing, distribution and other key markets.

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