Automatic Guided Vehicles

Maximizing Productivity Across Industry

DAIFUKU WEBB

JERVIS B. WEBB COMPANY

Standard & Customized AGVs handle a broad range of material handling needs from... 50 to 250,000 pounds

Jervis B. Webb Company has a long history of successful AGV installations in a variety of challenging industrial and commercial environments. Webb offers a complete line of standard and custom automatic guided vehicles/carts and system controls. But it takes more than just hardware and controls to put material handling systems to work for you. It requires a thorough understanding of your material handling needs to provide innovative ways to enhance productivity. As one of the largest producers of custom-engineered material handling systems in the world, Webb's broad experience enables them to provide solutions that will meet your needs today and in the future.

SmartLoader™ Automatic Trailer Loading Vehicles

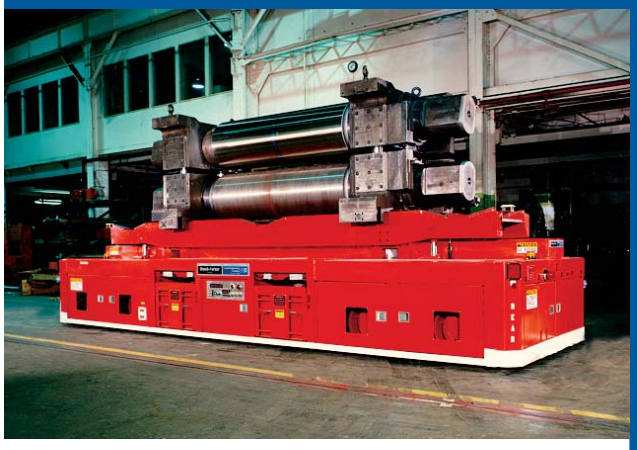
The SmartLoader system allows loads to be moved from palletizer output, warehouse, rack or floor staging into conventional over-the-road trailers without manual intervention.

Assembly Vehicles

Assembly Vehicles are ideal for on-board assembly operations and product manipulations. By replacing fixed assembly line conveyance, these assembly AGVs provide unequalled flexibility.

Heavy Load Handling Vehicles

Webb is the industry leader in heavy load application AGV systems. These rugged, high tonnage AGVs combine all the benefits of conventional AGV systems with the ability to handle loads weighing up to 250,000 lbs. We have supplied more heavy load application AGV systems and vehicles than all of our competitors combined.



Webb's innovative **AGV solutions** *used in the industry today include ...*

Modular Design Inside and Out **-** Webb utilizes modular design and manufacturing concepts that streamline the vehicle design and manufacturing process. By focusing on four basic vehicle application types, we have built a family of vehicles that all share common components. Whether your system calls for wire, inertial, or laser guidance, Webb's on-board vehicle controls are virtually identical.

Fork Type Vehicles

The HV fork type vehicle can handle a variety of pallet, bin or roll loads using standard fork designs. This versatile vehicle can also be fitted with a deck to interface with conveyor stations at fixed heights as low as eight inches or at multiple heights by incorporating a lift/lower device. These vehicles have standard load capacities up to 8,000 pounds.

SmartLoader™ Vehicles

The single or dual forked SmartLoader AGV uses technology adapted from guidance systems to deliver palletized loads into any conventional trailer. SmartLoaders have the capability to dynamically adapt to the position and length of the trailer being loaded. Automatically sensing skew angle of the trailer and adjusting to its position.

Towing Vehicles

Towing vehicles can handle load capacities up to 60,000 lbs. A number of trailer options are available including powered conveyor, tilt beds for automatic transfers, and standard load decks.

Unit Load Vehicles

Webb offers a full line of standard Unit Load AGVs. These AGVs are available with numerous load decks and load interface options including conveyor, lift/lower, and robotic arm configurations or a combination of load decks. Unit Load AGVs are available with load capacities up to 10,000 pounds.

Navigation Options

As a pioneer in the development of automatic guided vehicles (AGVs), Webb offers one of the most advanced selections of standard and custom AGVs, as well as the most accurate controls in the industry. Webb provides all guidance options for its AGVs including laser, inertial, wire and magnetic tape. Our wide selection enables us to provide you with the most cost-effective and efficient solution to meet your needs. For example our new SmartLoader™ 24/7automatic trailer loading AGV uses either inertial or laser guidance depending on your facility and requirements.

Laser

Laser-guided vehicles navigate by using a laser scanner that measures angle and distance to reflectors that are mounted to columns and machines. Laser provides maximum flexibility for easy guidepath changes with no system shutdown necessary. A vehicle's position is continuously calculated based on laser sensor input. Also, all navigation methods can be seamlessly combined in a concept called multi-navigation, which switches back and forth from laser to spot guidance without stopping the vehicle in applications requiring both modes of guidance. Laser guidance provides continuous calculation of vehicle position,high immunity to false reflections, and high position accuracy. Laser navigation allows vehicle speeds of up to 2-3 meters per second.

Inertial

Webb's proven inertial guidance system is similar to the technology found in commercial aircraft and military guided missiles. Inertial-guided AGVs use an on-board Vehicle Control Computer (VCC3) to accurately maintain intended routes and perform required tasks. Transponders or SmartMarks® embedded in the floor are sensed by the vehicle to confirm the specific location of the vehicle. Inertial can operate in nearly any environment, including tight aisles, extreme temperatures or outdoors and has a longer lifespan than other guidance options. Multi-vehicle systems are controlled by a Vehicle System Manager (VSM) that provides real-time control and monitoring of all vehicles. It routes AGVs from various locations to programmed destinations, monitors vehicle status and program status.

Wire

Webb's onboard vehicle controls for its wire-guided vehicles is similar to its inertial-guided vehicles. The only difference is wire-guided AGVs use a set of guide coils, while inertial uses a gyro assembly as its primary navigation sense. Wire-guided vehicles follow a low voltage, low frequency signal sent over in-floor wires. Vehicles can take a different path or select a different route by switching to a different frequency. This simple guidance system is still used today because of its accuracy, dependability and low cost in certain applications.

Magnetic Tape

Webb's SmartCart®, automatic guided cart, is navigated by magnetic tape that is installed on top of the floor – no cutting or drilling into the floor is needed. This method is the most cost-effective and flexible guidepath available today, allowing guidepath changes to be made in hours or minutes. Also, Webb provides CartTools®, a simple configuration tool which allows customers to easily modify routes and set up functions to be performed by the vehicle at specific locations along the guidepath. CartTools is a Windows-based PC software package.

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