SEEGRID

Palion Tow Tractor

Transform material handling with Seegrid Palion Tow Tractor, the intelligent AMR for horizontal moves.

Palion Tow Tractor autonomously transports cart trains and other payloads using proprietary technology for hands-free flexibility—increasing productivity and reducing cost.

Automate. Optimize. Achieve.

Consumer expectations and supply chain pressures continue to become more demanding and complex. Now more than ever, material handling automation solutions are a necessity for manufacturing, warehousing, and distribution facilities to increase safety, gain a competitive edge, tackle growing challenges, and continuously improve.

Does Your Operation:

- Change and innovate processes?
- Adopt new work shifts?
- Move equipment between facilities?
- Experience peak seasons?
- Launch new product lines?

- Experience labor shortages?
- Make changes to floor layout?
- Operate with just-in-time delivery?
- Experience downtime?
- Have safety incidents?

- Encounter product damage?
- Have social distancing regulations?
- Need to improve throughput?

Achieve your automation goals and take your business to the next level.

Industry-Leading Solutions for Today—and Tomorrow

Seegrid is the leading provider of connected AMRs for material handling with millions of production miles driven. With flexible and reliable AMRs, enterprise software, actionable analytics, and best-in-class services and support, Seegrid offers a complete connected solution for end-to-end autonomous, safe, and reliable material movement.

Achieve Your Goals.
Advance Innovation Initiatives.

Seegrid Palion AMRs integrate into your workflows during live operations, prove quick ROI in just 6-24 months, and seamlessly scale across your entire network of facilities.

Proven, Predictable Performance

Seegrid Palion AMRs do exactly what you train them to do—delivering goods on time, every time.

Automate Repetitive Tasks

Make the most of complementary strengths: Seegrid Palion AMRs do monotonous hard labor, working alongside humans focused on value-add, cognitive tasks.

Reduce Operating Costs

Seegrid robots optimize workflow processes and cut costs out of your operation with consistent and efficient delivery of goods.

Quick Time to Value

Seegrid robots can be immediately dispatched or redeployed while production is running for unparalleled flexibility and the lowest total cost of ownership.
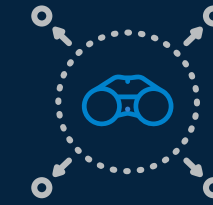
Intelligent. Aware. Transformative.

Seegrid Palion AMRs are vision guided and see the world just like humans do. Using stereo cameras, sophisticated algorithms, and machine learning, our patented technology enables Seegrid Palion AMRs to build a detailed, three-dimensional map of the world around them to reliably navigate the most dynamic environments.
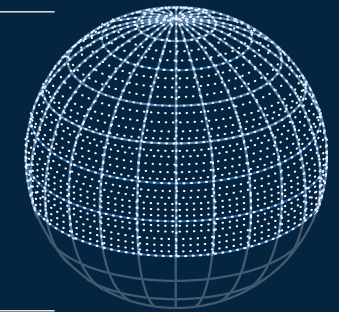
Material Automation Starts Here

Our technology is a continuation of breakthrough robotics pioneered by world-renowned roboticist Dr. Hans Moravec, our chief scientist. After decades of perfecting vision technology, Hans founded Seegrid in 2003, bringing mobile robotics to material handling. Seegrid's navigation technology is proven and unique, protected by 100+ patents, trade secrets, and proprietary information.

FULL HEMISPHERE VIEW

Palion AMRs use stereoscopic cameras and evidence grid technology to capture a view of the world similar to how humans see. As they drive, robots take pictures and interpret data in real time to navigate reliably even if the environment is dynamic.

Palion AMRs see and process more, collecting a higher density of information, prioritizing and filtering data

RELIABILITY

With thousands of data points, Palion AMRs navigate seamlessly in high-traffic, dynamic facilities.

FLEXIBILITY

Route changes can happen while production is running by simply driving or walking the robot through the new route.

Proven to Perform Safely

Millions of production miles driven.

Seegrid Palion AMRs are the market leader in robust navigation, and go above and beyond ANSI B56.5 safety standards, as well as satisfy all applicable safety requirements of ANSI R15.08. Our robots work seamlessly—and safely—alongside their human coworkers.

Safety systems including UL approved components such as e-stops are included on the robots to ensure safe operation around machinery and personnel. Seegrid's approach is to not only meet, but to also exceed regulatory requirements by building an envelope of constantly scanning safety sensors to ensure the robot will always stop before contacting any obstructions, including people.

Safety Sensors

Equipped with two safety systems, Seegrid AMRs go beyond safety requirements. The redundant safety systems cause the robot to reduce speed and come to an immediate, complete stop when a person or object is detected.

Emergency Stop Buttons

A highly visible button provides another safety mechanism onboard the robot. When pressed, the motor brake is immediately applied, bringing the robot to a complete stop.

Turn Signals

Indicator lights atop the AMR indicate direction of travel during turns, so employees will always know which way the AMR is moving. This not only enhances safety, but it also increases the comfort and confidence of employees working alongside the autonomous robots.

Horn Honks and Motion Alarms

Seegrid Palion AMRs use distinct alerts to notify human coworkers of their movements. An auto horn indicates motion is starting, a travel tone indicates a robot is in motion, and a horn signifies travel in reverse.

Seegrid Palion AMRs have logged more autonomous miles at customer sites than any other mobile robotics company in the world.

Palion Tow Tractor

Seegrid Palion Tow Tractor is an autonomous mobile robot that transforms horizontal material movement–tugging cart trains and other payloads up to 10,000 pounds using proprietary autonomous navigation technology for a safe, flawless delivery every time.

Repeatable and Efficient

Palion Tow Tractor precisely executes production schedules, intelligently moving multiple payloads in one trip for real cost savings.

Synchronized Self-Charging

Auto-Charge

Keep your Seegrid Palion AMR fleet powered up and on the job with automated battery charging managed by Supervisor, Seegrid's fleet management software.

Auto-Charge removes a costly and dangerous human touchpoint and boosts productivity by automating the scheduling, dispatch, and charging to keep operations running 24/7.

Hands-Free Charging

Supervisor acts as your automated battery manager, monitoring AMR battery levels and autonomously sending AMRs to and from Auto-Charge as needed – eliminating reliance on dangerous manual battery charging.

Optimized Charge Scheduling

Keep your fleet running 24/7 by scheduling AMRs to charge when they're not currently doing a job – in-between shifts, during breaks, while waiting for a job in a taxi stand/queue, or during off-shifts. Supervisor can direct AMRs to the nearest Auto-Charge station when they reach a certain battery level and set timers to keep AMRs moving and product flowing.

Drive-In or Drive-Thru

Auto-Charge is designed to fit seamlessly within your facility's space and complement your workflows. Drive-Thru allows you to charge while the AMR is carrying a load, like an empty tote, while Drive-In is ideal for customers with dedicated charging areas.

Fast and Opportunity Charging

Auto-Charge works with Enersys Nexsys Thin Plate Pure Lead (TPPL) batteries optimized for fast- and opportunity-charging. TPPL batteries can fast charge in just over an hour, allowing AMRs to go back into service before they are fully charged.
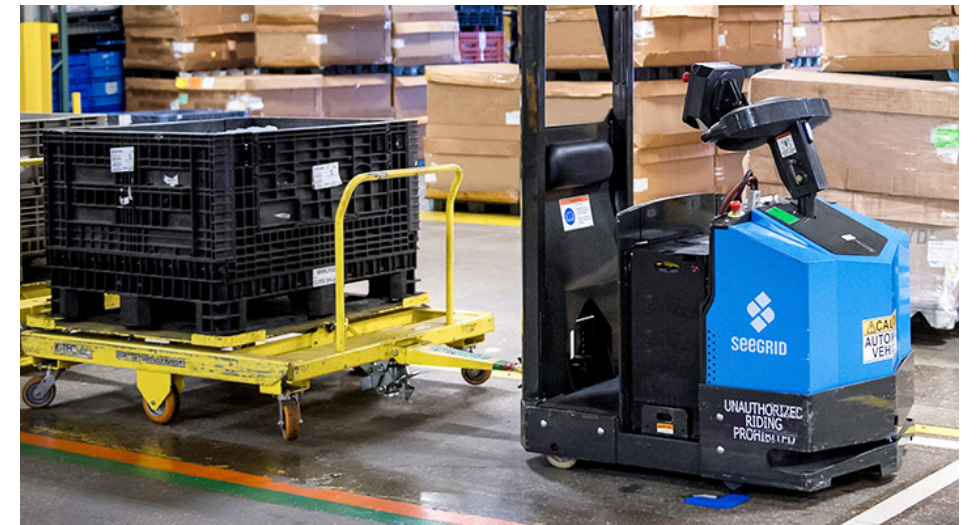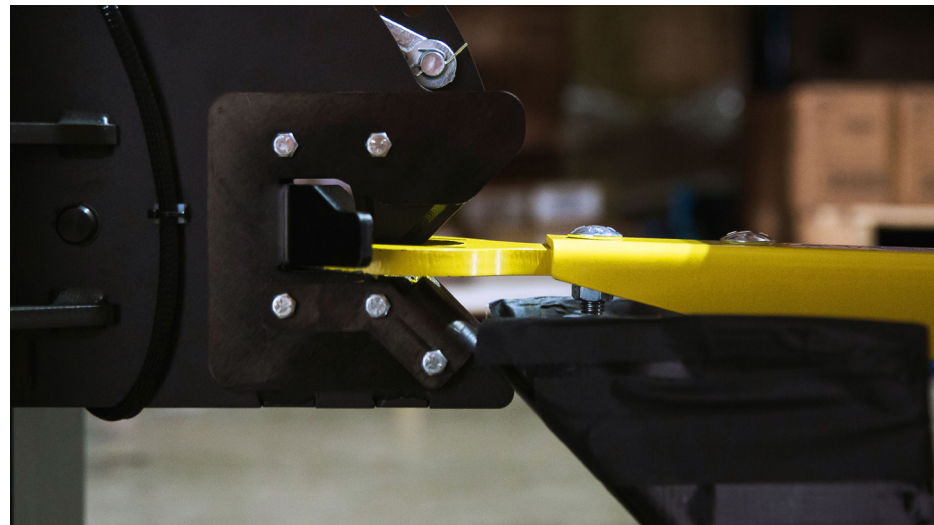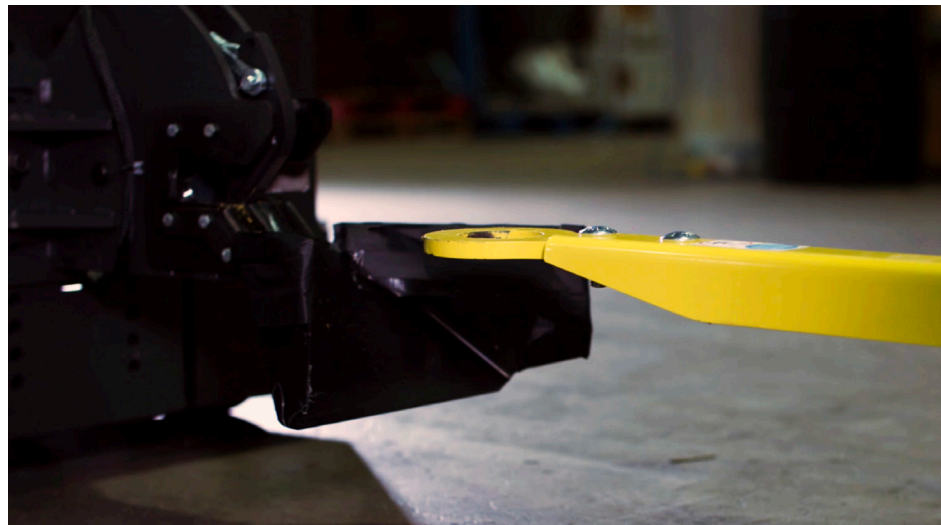
Auto-Hitch and Unhitch

Palion Tow Tractor can autonomously connect to and disengage from payloads, removing human touches from the material flow process and providing safer, more efficient workflows.

Safety and Productivity

Auto-hitching provides efficient continuity of your workflow while eliminating potential hazards and wasted time spent manually connecting and disconnecting the hitch to pick up and drop off payloads.

Versatile Design

Palion Tow Tractors are designed to support a variety of cart hitches to best suit your facility's needs.

Key Applications for Seegrid Palion Tow Tractors

Seegrid Palion Tow Tractors increase units per hour, reduce product damage, and allow you to "zone" your operators for increased productivity and reduced downtime for several key applications.

PARTS-TO-LINE

Transfer parts, materials, or work-in-progress goods to another processing stage.

PUTAWAY

Transport product from the receiving dock to storage location.

TRASH REMOVAL

Remove scrap, dunnage, or packaging material from the production floor.

REPLENISHMENT

Move inventory from storage to picking and shipment locations.

LONG HAULS

Transport product over a long, one-way distance.

CROSS DOCKING/VIRTUAL

Move product from the shipping to receiving area, receiving to shipping area, or from/to the staging area.

PRODUCT SPECIFICATIONS

Maximum Capacity	10,000 lbs.
Maximum Automatic Speed	Up to 4.0 mph Reverse -0.7 mph
Width	36''
Height	76"
Length	60"
Weight	1,860 lbs.
Wheels	Rubber
Environment	Only indoor operation Temperature 32°F min, 104°F max Humidity 20-95% RH (non-condensing) Floor conditions should be free from oils, moistures, and debris Floors should not be uneven/cracked

Features	Flexible, infrastructure-free navigation Operate in manual or driverless mode Route transfer between robots: train one and transfer route knowledge to all Supervisor for connected fleet management and enterprise intelligence Live-Charge standard Auto-Charge compatible Auto-Hitch for payload engagement
Turning Radius	Automatic outside min: 96'' Manual outside min: 46''
Battery	Voltage: 24V Max. capacity: 840 Amp x Hr Compartment: (LxWxH) 31''x 13''x 32'' Connector: Standard, Red SB-175 Weight: 854 lbs. min., 1,500 lbs. max. Change roll deck: Standard

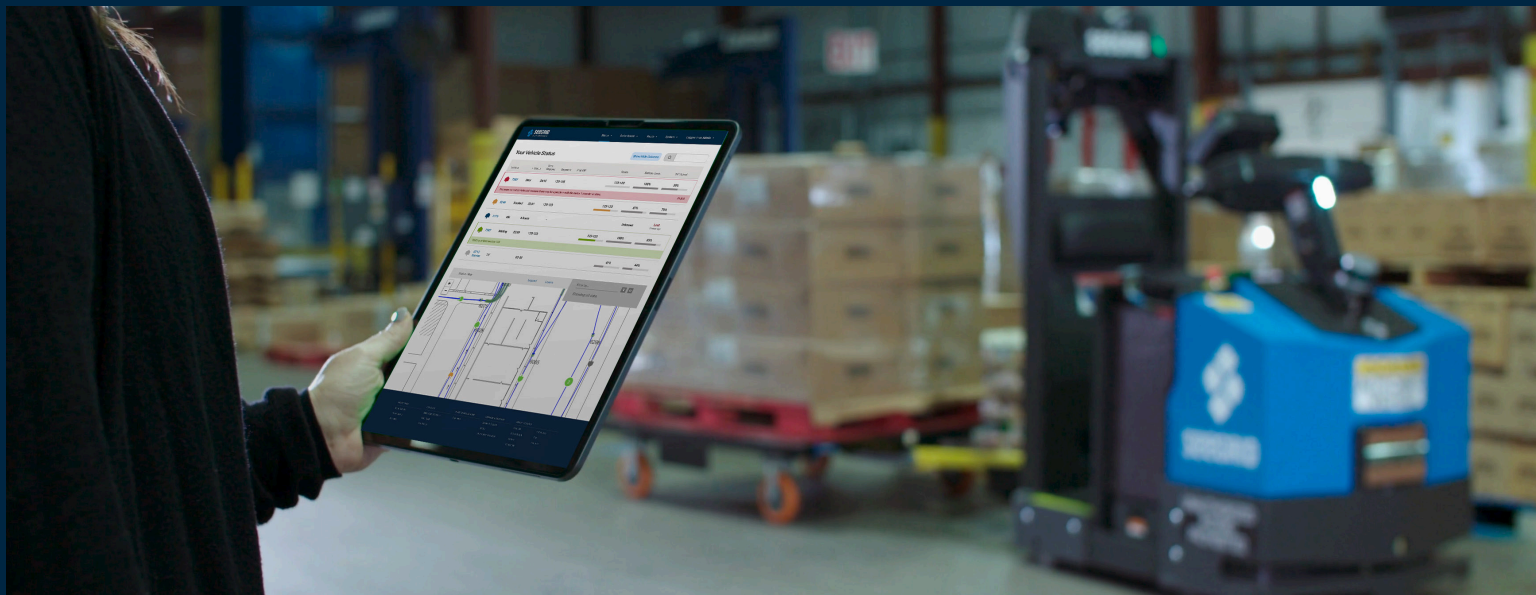|	
Safety	ANSI/ITSDF B56.5-2019 ANSI B11.0 Primary personnel detection safety system Secondary object detection system Reverse object detection system ISO 13849 category 3 emergency stop buttons LED lightbar Turn signals Acoustic and visual warning system Safety mat in driver's compartment
Standard Safety Behaviors	Stops if it detects an object in the primary personnel or secondary object detection systems and resumes travel once object is removed Always sounds horn before beginning or resuming automatic travel Sounds horn and activates light when traveling in reverse
Trained Behaviors	Timed pauses at intersections where other traffic has right of way Wait to start until operator presses Push to Work button Sounding the horn in busy areas, near walkways, in turns, etc.

Supervisor

Real-time fleet management at your fingertips.

Monitor your fleet and control the movement of materials throughout your facility. Our powerful fleet management software oversees your Seegrid Palion AMR workforce—maximizing the operational efficiency of your fleet and material flow.

Transform into a factory of the future, where everything is connected, material movement is automatic, data is reported back, and everything is in sync.

Track From Any Device

Monitor the flow of materials throughout your facility from any smart device. Map and status views show where your Palion AMRs and materials are going.

Dispatch On-Demand

Dynamically re-route Palion AMRs to any location with remote calling, or dispatch available robots to a different task to support changing demand.

Instant Notifications

Customize your notifications to ensure Palion AMRs are always top performers. Automatic text and email alerts can inform when a robot has a low battery, completes a delivery, and more.
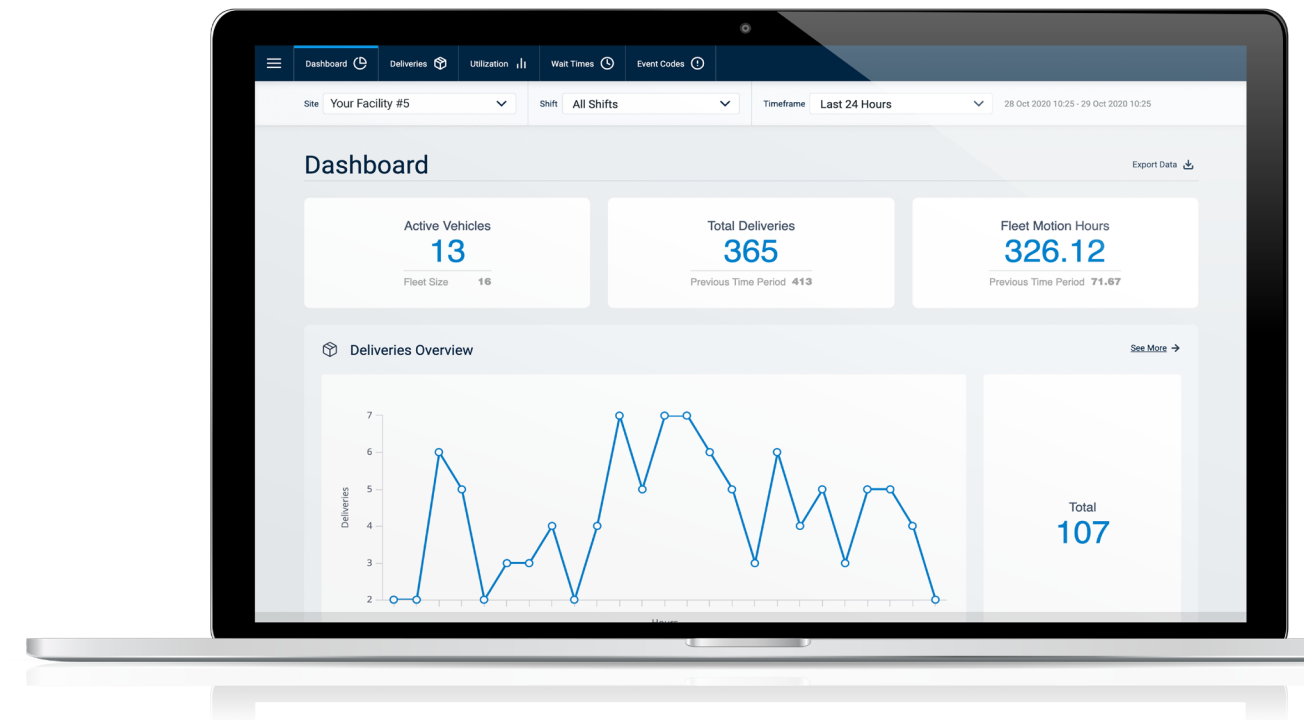
Material Transit Tracking

Alert assembly operators that Palion AMRs are en route with subway-style estimated time of arrival projections. With Supervisor's ETA views, team members on the floor know exactly when their material will arrive.

Fleet Geek™

Deliver results with actionable insights.

Fleet Geek, Seegrid's cloud-based fleet analytics solution, provides virtualized reporting of your Palion AMR fleet performance to deliver the intelligent insights needed to maximize business value and drive continuous improvement. With real-time insights, users can ensure the fleet is hitting key performance indicators and operating effectively.

Ensure your automation project is effective, on track, and successful.

Accelerate adoption of Palion AMRs within your facility.

Better understand fleet performance with up-to-the-minute delivery views.

Streamline processes and reduce downtime with insights into robot activity.

Seamlessly monitor your fleet's movement with insight into overall distance traveled.

Fast-track your ability to scale with proven, data-driven success.

We Work and Win Together

When you work with Seegrid, our team becomes your team.

Seegrid advises and supports you from the initial application scope to daily analysis of your fleet and everything in between. We are passionate about making you successful.

Proven, Low Risk Implementation

With more than 1,000 AMRs running in live production, Seegrid has a proven track record for integrating into complex customer environments.

Scope and Consultation

Our team of application engineers will work closely with you to develop custom recommendations aimed at optimizing operations to achieve your goals while maximizing the value of your investment.

Training and Education

Seegrid Palion AMRs are intuitive and easy to use. Our specialists work directly with your employees, making them feel comfortable and confident to work alongside the robots. Seegrid provides classroom style, hands-on training to help your employees understand how to operate Palion AMRs, manage the fleet, report on success, and continuously improve to deliver even more value.

Ensuring Success

Seegrid's customer success team will support you from project kick-off through implementation and beyond. Post-install, they will keep tabs on your fleet, measuring productivity, and suggesting ways for your facility to continually innovate.

Dedicated Support

We are passionate about your success. Our team is available to assist you at any point in time to ensure you are operating as efficiently as possible without disruptions.

seegrid

Turnkey automation for the
most challenging environments.

216 RIDC Park West Drive
Pittsburgh, PA 15275
U.S.A.

US +1 412-379-4500
Support line: 1-877-SEEGRID

sales@seegrid.com
seegrid.com