ArcBest | Vaux

Vaux Smart Autonomy™
PRODUCT GUIDE

Contents

Vaux Smart Autonomy addresses all warehouse forklift tasks (not just the easy ones), and reduces operating costs.

1. Teleoperator is assigned mission to pick materials
2. Autonomy takes over, and the forklift self-navigates to the destination
3. Teleoperator is assigned mission to drop materials
4. All while the teleoperator works from anywhere in the world

Vaux Solutions
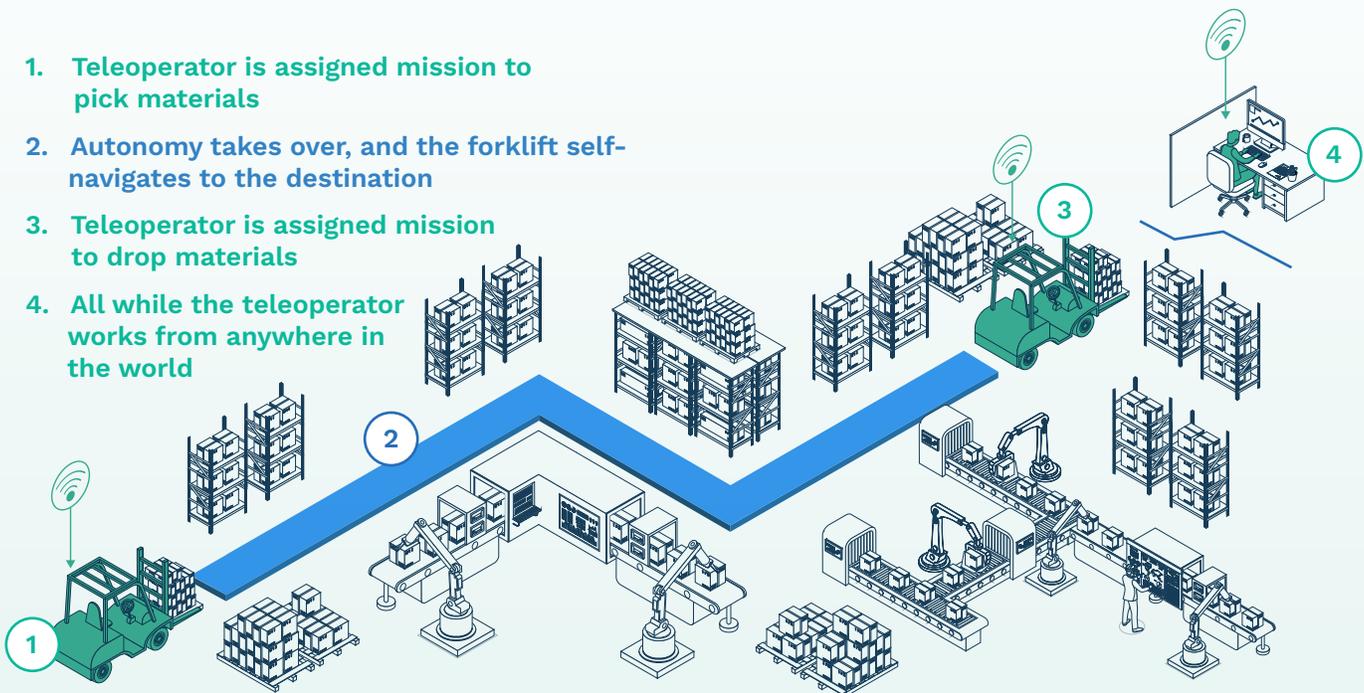
The Vaux™ Technology Suite

With Vaux, **intelligence drives every move** — optimizing workflows, reducing risk and unlocking new levels of performance across the supply chain. Vaux's award-winning portfolio of intelligent, connected technologies enables safer, faster and more efficient freight movement by combining automation, autonomy and real-time visibility across key operational touch points.

Vaux Smart Autonomy™

Advanced AMR forklift fleet that delivers end-to-end automation in complex operating environments, without requiring costly facility modifications.

Vaux Vision™

Real-time dimensioning and imaging for accurate freight records, fewer billing surprises, and smarter operational decisions.

Vaux Freight Movement System™

SUPPLYTECH BREAKTHROUGH AWARD 2025

MATERIAL HANDLING SOLUTION OF THE YEAR

TIME BEST INVENTIONS 2023

Provides the ability to stack unstackable freight for maximum load efficiency and space utilization while enabling rapid trailer loading and unloading and optimized freight staging.

Vaux Smart Autonomy Suite

The Vaux Smart Autonomy vehicle portfolio includes the following:

Smart Autonomy Vehicles	
MODEL	**PURPOSE**
Counterbalance Forklift	Trailer load/unload, cross-warehouse transfer, gravity feed drop, bulk and pin stacking
Reach Truck	Rack pick and put away

- These vehicles are capable of autonomous operations through the fusion of the Vaux Smart Autonomy software and hardware.

- Teleoperation is available when human interaction is required via wireless radio frequency (RF) communications.

- Each vehicle features a fully electric drivetrain and hydraulically actuated lifting assemblies, powered by an integrated rechargeable battery with smart contact charging that automatically recharges—keeping units moving with no manual plug-in required.

Counterbalance Forklift

The **Counterbalance Forklift** is used for trailer load/unload, cross-warehouse transfer, gravity feed drop, bulk and pin stacking.

Counterbalance Equipment Specifications

|	
Rated Capacity (24" load center)	4,894 lbs.
Vehicle Dimensions	134" x 47" x 98"
Maximum Speed	5 mph
Maximum Height	210 inches (17.5 feet)
Right Angle Stack	150 inches (12.5 feet)
Turning Radius	75 inches (6.25 feet)
Minimum Aisle Space for Navigation (Autonomous / Teleoperated)	108 inches (9 feet) / 52 inches (4.3 feet)
Maximum Operable Slope	13% (7.4 degrees)
Supported Workflows	Trailer load/unload, cross-warehouse transfer, gravity feed drop, bulk, pin stacking

Reach Truck

The **Reach Truck** is used for rack pick and put away.

Reach Truck Equipment Specifications

|	
Rated Capacity (24" load center)	4,000 lbs.
Vehicle Dimensions	101" x 58" x 140"
Maximum Speed	5 mph
Maximum Height	312 inches (26 feet)
Right Angle Stack	120 inches (10 feet)
Turning Radius	60 inches (5 feet)
Minimum Aisle Space for Navigation (Autonomous / Teleoperated)	108 inches (9 feet) / 64 inches (5.3 feet)
Maximum Operable Slope	0% (not designed for operation on or over grades)
Supported Workflows	Rack pick and put away

Vaux OS
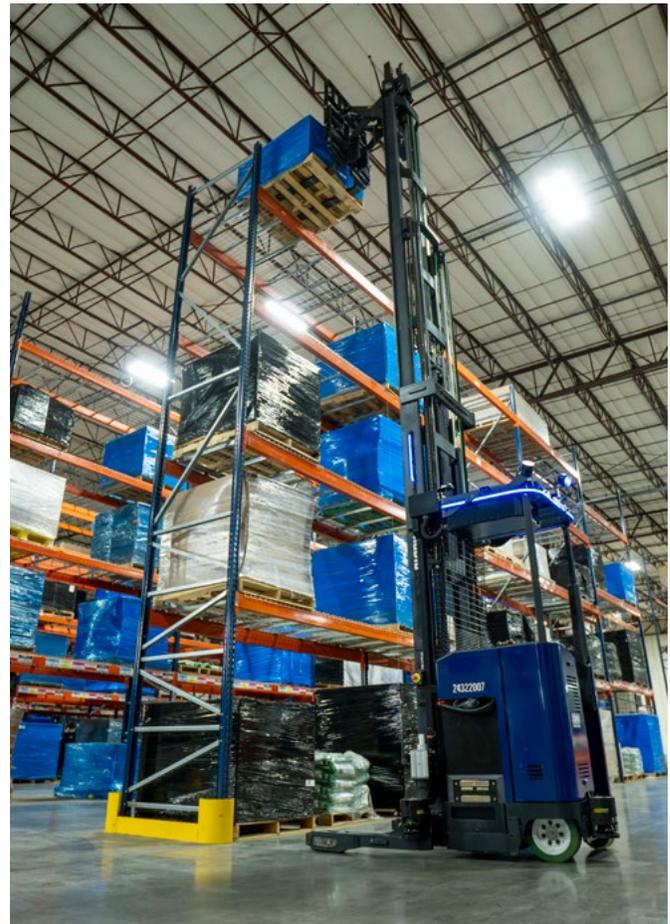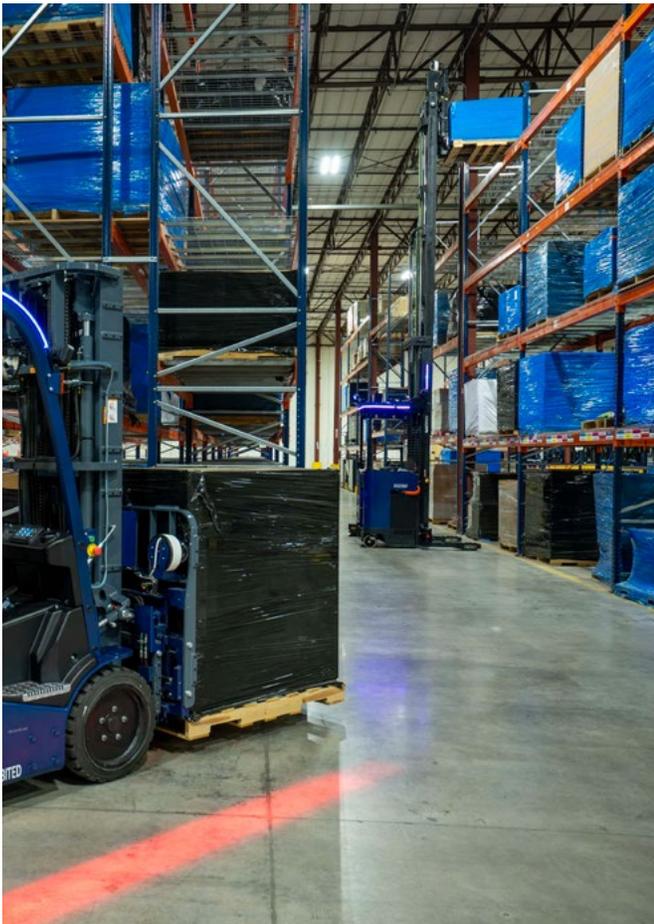
ROBOT FLEET MANAGER (RFM) orchestrates and controls all autonomous missions for the Vaux Smart Autonomy fleet.
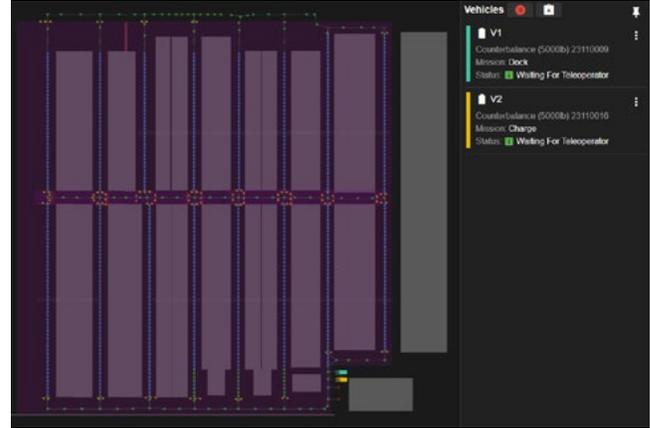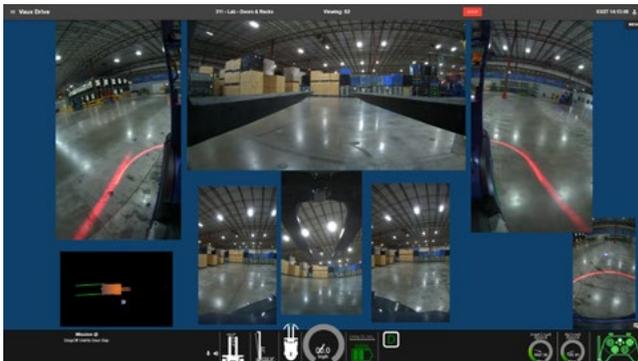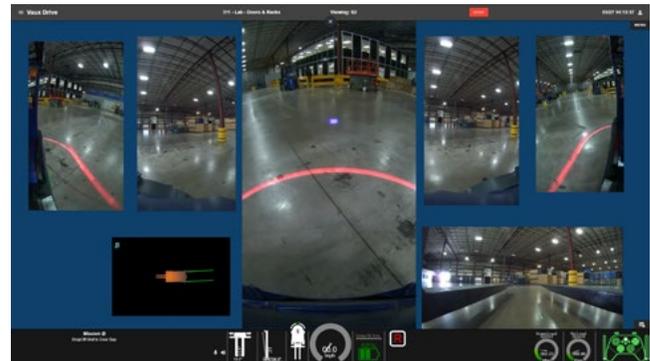

RFM screen

VAUX DRIVE PLUS is the primary operator interface for teleoperation. Video streams from connected remote vehicles are displayed live for operators, providing environmental awareness and visual interaction with the vehicle surroundings.
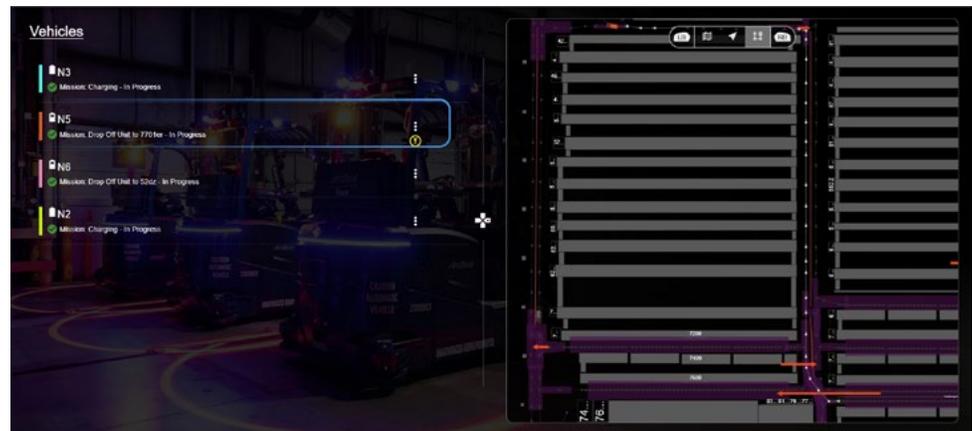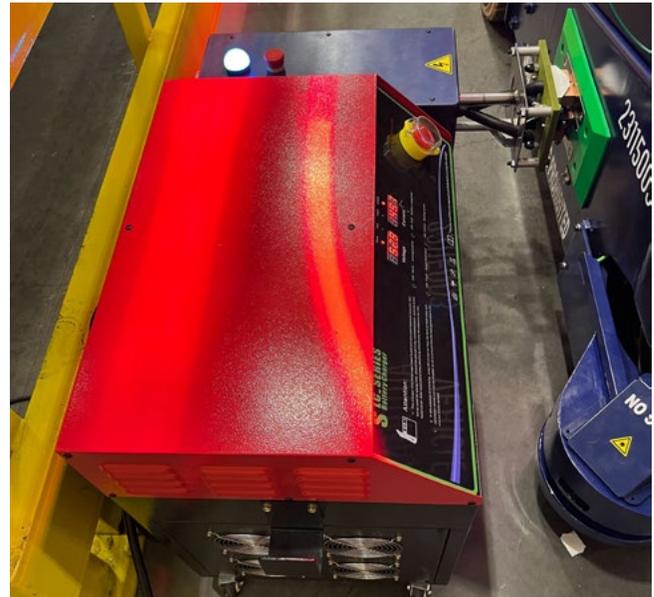

Drive Plus: HOME screen

Drive Plus: screen view in DRIVE

Drive Plus: screen view in REVERSE

Vaux Box

Vaux Box is an autonomous charging system that allows for charging during vehicle idle time.

Equipment Specifications

Max output current for Counterbalance Forklifts	200 A
Max output current for Reach Truck	300 A

FEATURES:

- Voltage and current overload protection
- Smart positioning sensing for accurate and safe alignment
- European style connector compatible with most smart chargers
- Intelligent communication capabilities to exchange information with connected vehicle and charger for optimal safe charging performance and compatibility
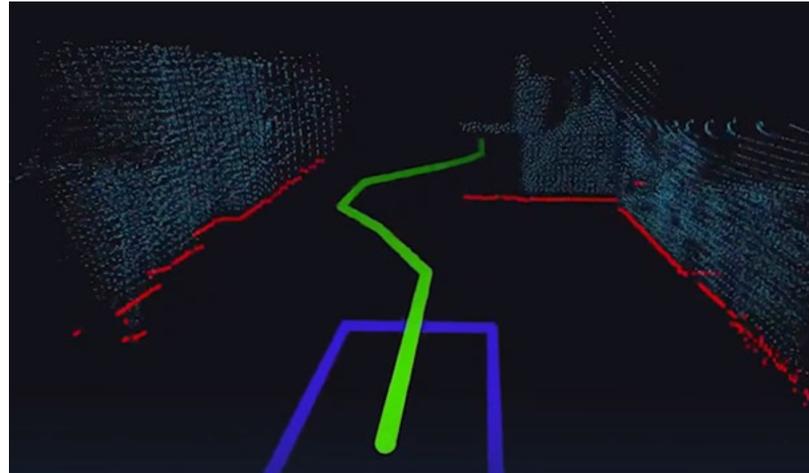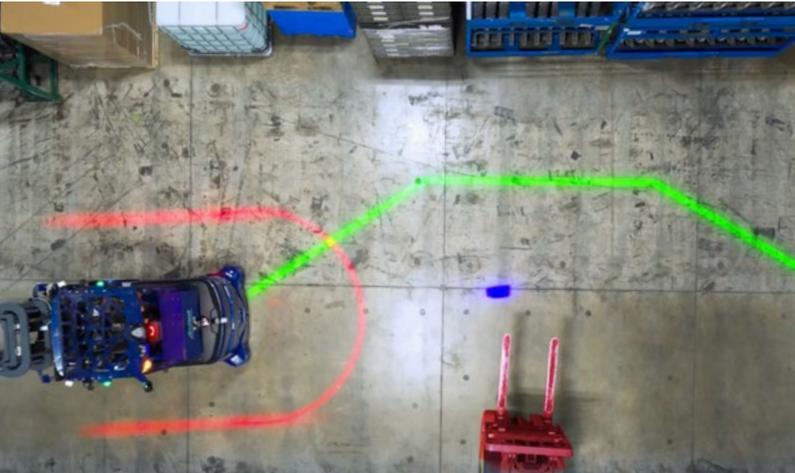
SAFETY OVERVIEW

Vaux Smart Autonomy vehicles include an integrated safety suite designed to support safe operation.

- LiDAR sensors
- Emergency Stop (E-Stop) buttons
- Cameras
- Audible alert systems
- Visual alert systems

To rapidly stop operations or in emergency circumstances, vehicles are equipped with EMERGENCY STOP buttons on the vehicle.

LiDAR sensing (2D + 3D) provides continuous obstacle detection and navigation support with all-around coverage.

- **2D LiDAR:**
  Continuously monitors the travel path and initiates a controlled stop when an object enters the defined safety zone.
- **3D LiDAR:**
  Adds complementary horizontal and vertical sensing to detect obstacles outside the 2D plane and support efficient maneuvering around objects.

OPERATING ENVIRONMENT

- Vaux Smart Autonomy vehicles are intended to be operated indoors on smooth and flat prepared surfaces.

- When required to travel up or down any incline, ensure that the forks are facing upward and that the slope does not exceed 13% (approximately 7.4 degrees).

- The intended temperature range is between minimum 24 degrees Fahrenheit to 113 degrees Fahrenheit.

- Do not operate in environments classified as ISO corrositivy category C3 or higher (including CX), or in flammable/explosive atmospheres.

Key Terms

2D Safety LiDARs: Safety laser scanners designed to meet certain criteria and adhere to specific standards and regulations that are required by OSHA for safety-related parts of control systems.

AMRs (Autonomous Mobile Robots): Robots that operate autonomously and can navigate in an uncontrolled environment without the need for fixed paths or tracks.

Drop Location: Designated area where goods, materials, or containers are deposited for storage or consumption. This is where teleoperators will conduct drop-off missions.

LiDAR Sensor: Light detection and ranging sensors that create 2D and 3D views of the local environment, ensuring safe operation throughout the facility.

Pick Location: Designated zone where items are retrieved or picked up. This is where teleoperators will perform pickup missions.

Robot Fleet Manager (RFM): An application in Vaux OS that orchestrates and controls all autonomous missions for the Vaux Smart Autonomy fleet.
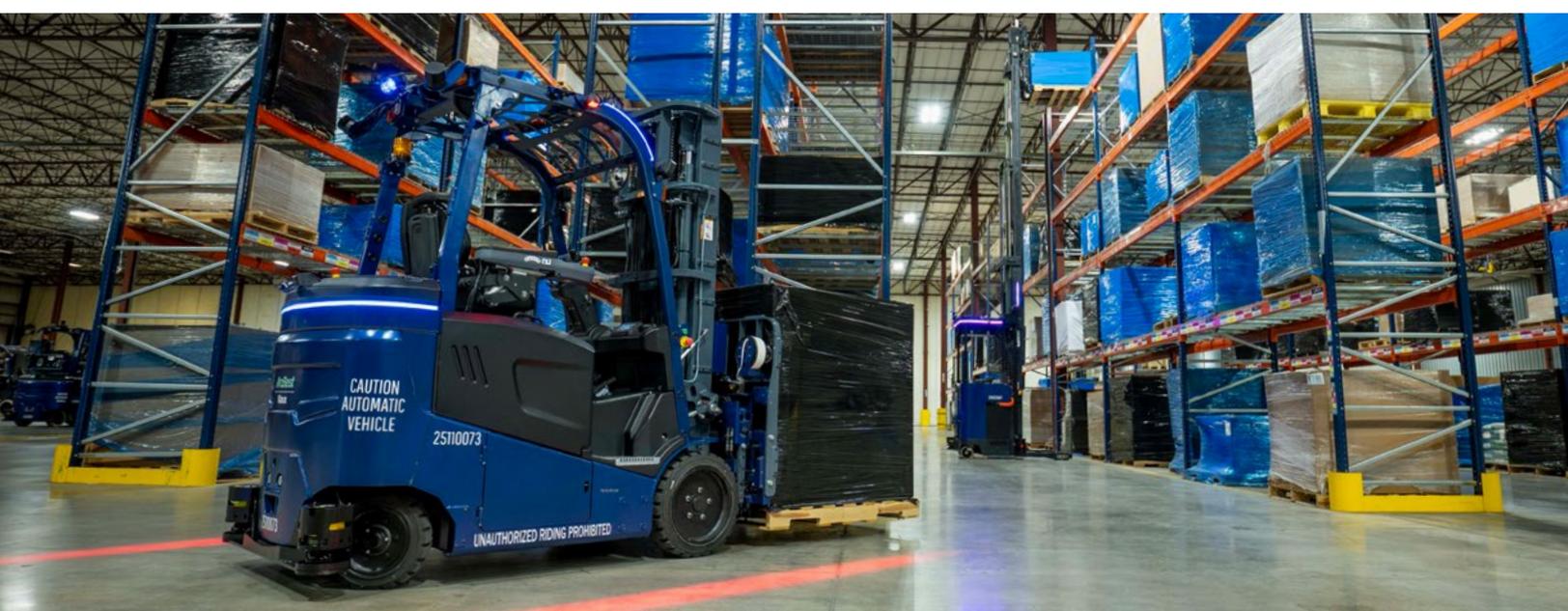
Teleop / Teleoperations: Allows for a human operator to remotely control vehicle functions from an operator workstation. Used in situations where the vehicle is not able to navigate around obstacles, or just when human interaction is required.

Vaux Drive Plus: An application in Vaux OS that serves as the primary operator interface for teleoperation. Video streams from connected remote vehicles are displayed live for operators, providing environmental awareness and visual interaction with the vehicle surroundings.

Vaux OS: ArcBest software suite that easily integrates with existing warehouse management systems (WMS) through APIs, giving customers real-time visibility for warehouse operations.

Customer Service Portal: Online Customer Support, Knowledge Base, and Help Desk to support Vaux Customers.

Warehouse Management System (WMS): A software platform designed to plan, organize, track, and optimize tasks, workflows, and resources within an organization.

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