

ORIONSTAR

AI WAREHOUSE ROBOT

CARRYBOT

FLEXIBLE DELIVERY, SMART MANUFACTURING



CONTENTS

- **CarryBot Features**
- **Product Functions**
- **Usage Scenarios**
- **About Us**

CarryBot Features

Meet OrionStar **CarryBot** here

ORIONSTAR

CARRYBOT

The World's First
Micro Fulfillment Center Logistics Robot



CarryBot Overview

CarryBot, developed by OrionStar, is an Autonomous Mobile Robot (AMR) designed for discrete manufacturing enterprises across domains including consumer electronics, warehousing, logistics, and beyond. It features autonomous navigation, reliable obstacle avoidance, strong load capacity, and multi-layer safety protection, helping businesses achieve smart manufacturing and ensure flexible and secure delivery.



CarryBot

6 Advantages

Flexible and Adaptable Delivery

- Compatible with multiple carrying attachments
- Adaptable to over 20 production scenarios
- VSLAM + autonomous navigation
- Adaptive to environmental changes

Flexible

1 cm Positioning Accuracy Trusted by Customers Worldwide

- Certified by multiple international authoritative safety standards
- Mean Time Between Failures of **40,000** hours
- Global shipments of 60,000+
- Service-oriented organization

Stable

Smart Interaction

- Multi-robot collaboration with automatic route planning
- Support smart summon solution and follow-me mode
- Easy operation with a 14-inch large screen

Intelligent

The Most Open Robot System

- **500+** free APIs
- 3 hardware expansion interfaces
- Average 7-day custom development

Open

10 Minutes Quick Deployment

- Single-robot mapping, intelligent sharing
- With integrated mapping software and no PC required, efficiency is tripled

Rapid

Effortless Human-Robot Collaboration

- **5** security protection measures
- **65** cm minimum clearance
- 3-6 times increase in efficiency

Collaborative



Getting to Know CarryBot

● Custom Fish-eye Camera

- Utilizes a Marker-Free Deployment approach to meet the deployment demands of large areas and high-ceiling environments.

● 14-inch 1080P Screen

- 14-inch large screen with high-definition resolution.

● Solid & Stable Chassis

- High passability due to the quasi-circular chassis design.
- It fits various complicated ground environments, since adopting the Independent Suspension System.



CarryBot 1

● Qualcomm Snapdragon Chip with 8-core

- World's first robot on Qualcomm platform with **Snapdragon 845 chip**, scoring 265,000 on Antutu benchmark, making it one of the most powerful SOC chips in Android with industry-leading performance.

● High Payload Delivery Needs

- It can effortlessly **transport bulk goods, hefty components, and large inventory items**. It's net payload **up to 100kg**.
- Flexible carrying attachments that adapt to a wide range of delivery tasks for various items.

● Navigation Cameras and sensors

- Built-in 240° LiDAR + 3D omnidirectional obstacle avoidance sensor **achieves safer delivery**.
- **RGBD*3 depth camera** can detect small obstacles quickly and accurately.

Adapting Flexibly to the Delivery Tasks of Various Items.



CarryBot 1



CarryBot 2



CarryBot 3

Shelves shall prevail in kind

CarryBot 1 Key Specifications

Overall Size	650 mm x 525 mm x 1377 mm
Net Weight	48 kg
Interactive Screen	14-inch, 1080 FHD
Typical Load	100 kg
Marker-Free	V-SLAM
Microphone Array	6-Mic array, 360° sound source positioning, 5 m sound range
Hardware Platform	Qualcomm 8-core chip + industrial-grade MCU
Battery Life	9 h (tested with a 100 kg load on marble floor)
Charging Time	4.5 h
Operation System	Android 9
Network Supports	4G supports TDD-LTE, FDD-LTE Wi-Fi supports 2.4G/5G
Navigation System	LiDAR x 1 + Depth Vision Camera x 3 + Fisheye Camera x 2 + Infrared Camera x 2 + Odometer + IMU x 1



CarryBot 2 Key Specifications

Overall Size	650 mm x 525 mm x 1377 mm
Net Weight	58 kg
Interactive Screen	14-inch, 1080 FHD
Typical Load	30 kg per tray, 100 kg in total (including trays)
Marker-Free	V-SLAM
Microphone Array	6-Mic array, 360° sound source positioning, 5 m sound range
Hardware Platform	Qualcomm 8-core chip + industrial-grade MCU
Battery Life	9 h (tested with a 100 kg load on marble floor)
Charging Time	4.5 h
Operation System	Android 9
Network Supports	4G supports TDD-LTE, FDD-LTE Wi-Fi supports 2.4 G/5 G
Navigation System	LiDAR x 1 + Depth Vision Camera x 3 + Fisheye Camera x 2 + Infrared Camera x 2 + Odometer + IMU x 1



CarryBot 3 Key Specifications

Overall Size	Robot: 650 mm x 525 mm x 1377 mm Shelf: 405 mm x 825 mm x 937 mm
Net Weight	67 kg (robot 48 kg + shelf 19 kg)
Interactive Screen	14-inch, 1080 FHD
Typical Load	100 kg (including shelf)
Marker-Free	V-SLAM
Microphone Array	6-Mic array, 360° sound source positioning, 5 m sound range
Hardware Platform	Qualcomm 8-core chip + industrial-grade MCU
Battery Life	9 h (tested with a 100 kg load on marble floor)
Charging Time	4.5 h
Operation System	Android 9
Network Supports	4G supports TDD-LTE, FDD-LTE Wi-Fi supports 2.4G/5 G
Navigation System	LiDAR x 1 + Depth Vision Camera x 3 + Fisheye Camera x 2 + Infrared Camera x 2 + Odometer + IMU x 1



Product Functions

Getting to Know CarryBot

Versatile Carrying Attachments

- The versatility of CarryBot attachments expands its application scope, **catering to various material handling needs.**
- This ensures smoother, more efficient, and seamless delivery.
- As a result, **productivity is boosted by 2-3 times.**

Multi-Layer Safety Protection

- Equipped with multiple safety features, including LiDAR, depth cameras, collision protection sensors, and emergency stop buttons.
- These features enable the robot to **navigate precisely, quickly avoid obstacles, and rapidly stop operation in emergency situations.**



CarryBot 1

Flexible Scene Adaptability

- CarryBot utilizes VSLAM+ technology, **allowing it to quickly adapt to changes in production layouts without the need for tags or facility modifications.**
- It supports **multi-robot collaboration**, During peak periods or increased handling demands, CarryBot's numbers can be easily and swiftly increased.

High Payload Delivery Needs

- CarryBot can effortlessly transport items within a micro-fulfillment center.
- These include small packages, daily goods, retail products, etc.
- This eliminates the strain and safety risks associated with manual handling, **with a net payload capacity of up to 100kg.**

The Versatile Carrying Attachments

The versatility of carrying attachments means that the CarryBot can be **customized to the specific needs of any operation**. Whether loose parts or packaged boxes, the robot can handle each delivery with precision and care.



Attachments are sold separately, please ask at the time of purchase.

Flexible Scene Adaptability

- **Flexible Adaptability**

CarryBot utilizes advanced VSLAM+ technology, enabling it to quickly adapt to changes in production layouts without the need for markers or facility modifications.

It supports multi-robot collaboration, During peak periods or increased handling demands, CarryBot's numbers can be easily and swiftly increased.

- **Cost Reduction**

This significantly reduces both deployment labor costs and environmental modification expenses.



Multi-Layer Safety Protection

Ensuring Safe Human-Robot Collaboration

1. Navigation Sensors:

- Equipped with multiple navigation sensors, including LiDAR and three depth cameras.
- Ensures precise navigation and quick obstacle avoidance.

2. Collision protection bar:

- Equipped with contact-detecting sensors.
- Upon sensing a collision, it signals the control system to trigger an emergency stop, preventing further collisions.



3. Audio-Visual Alerts:

- The circular marquee displays changes in the robot's movement status.
- It emits a warning sound when approaching people or obstacles to alert those nearby.

4. Height Limit Detection:

- Eliminate safety hazards caused by excessively stacked goods.



5. Emergency stop buttons:

- Installed at the front and rear of the robot.
- Ensures that operators can quickly access them from any position around the robot.

Ready to Use, Deploy in 10 Minutes

- Single-robot mapping, intelligent sharing.
- Deployment time is reduced from several weeks with traditional AGVs to as fast as 10 minutes.
- With integrated mapping software and no PC required, efficiency is triple.



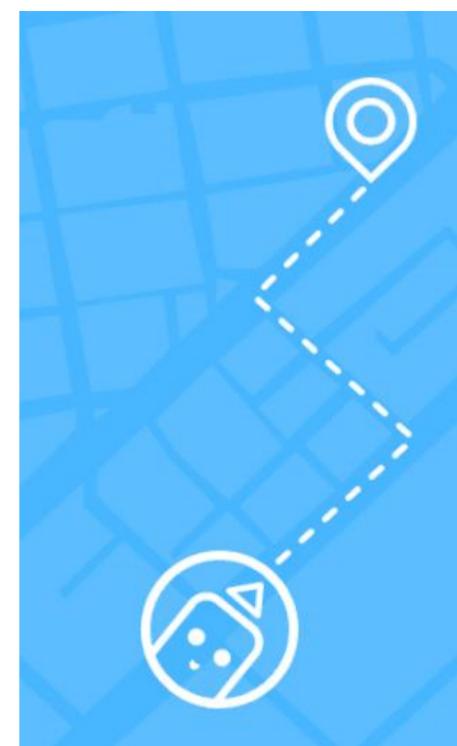
Auto-Navigation and Precise Positioning

- **Self-Navigation Technology**

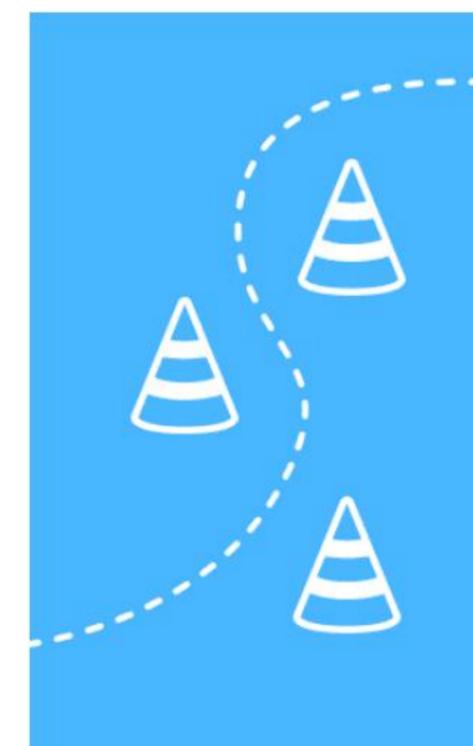
CarryBot has state-of-the-art navigation technology that integrates laser-based Light Detection and Ranging (LIDAR) with sophisticated visual positioning systems.

- **Precise Positioning and Quick Obstacle Avoidance**

It enables the robot to navigate complex environments autonomously, maneuver around obstacles with agility, and achieve pinpoint accuracy in positioning, ensuring delivery tasks are completed with increased safety and efficiency.



Intelligent
Navigation



Obstacle
Avoidance

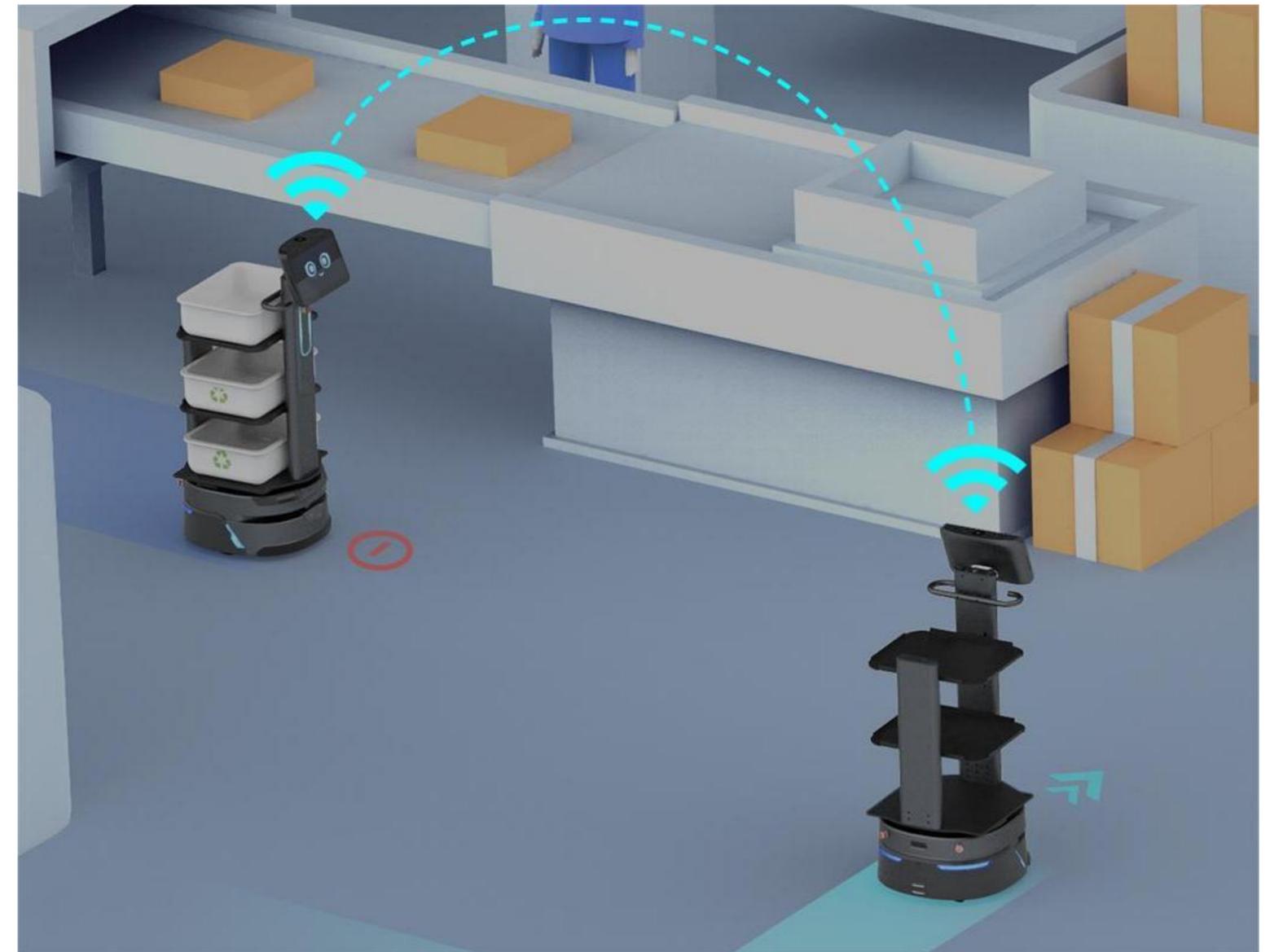
Multi-Robot Cooperation

- **Intelligent Robot Path Planning**

When multiple CarryBots working in the same scenario meet at a fork in the road, they can autonomously avoid each other without human intervention by following the priority of the robot number and traveling intelligently.

- **Improve Delivery Efficiency**

Multi-robot collaboration in Micro-Fulfillment Centers (MFCs) significantly enhances efficiency and flexibility



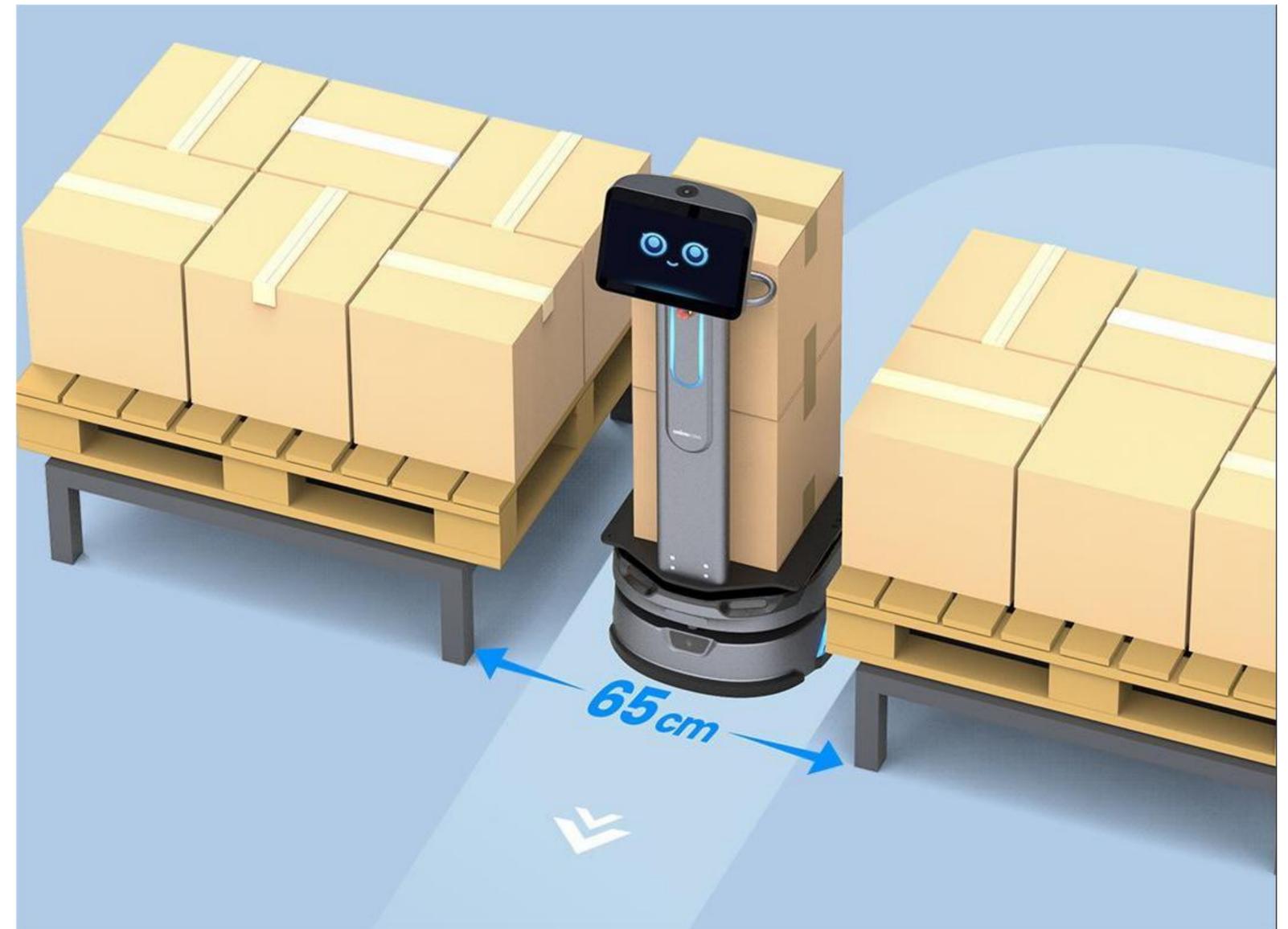
Flexible Passability

- **65 cm Clearance Capability**

CarryBot navigates efficiently through a minimum clearance of 65 cm, making it an ideal solution for the constrained spaces often found in micro-fulfillment centers.

- **Enhance Space Utilization**

This capability allows for optimal use of available space, enhancing the MFCs overall storage capacity and operational efficiency.



Advanced Chassis Design

- **Advanced Chassis Design**

The high adaptability of CarryBot is achieved by adopting the Independent Suspension System.

High passability due to the Quasi-circular Chassis design.

- **Enhanced Environment Adaptability**

Effortlessly overcome 10 mm thresholds and 30 mm grooves to adapt to diverse ground conditions, reduce environmental modification costs, and improve work efficiency and safety.



Expansionary Battery, Powerful Endurance

Large Battery Capacity, Fast Recharge

- Large battery capacity of 24.3Ah, **extended battery life up to 9 hours** (100 kg load on the marble floor).
- When power drops below 10%, it can **automatically return to the charger**.
- The robot can be **fully charged within 4.5 hours**, allowing it to quickly return to work.



International Certification, Quality Assurance

Management System Certification

Whole Machine Certification

Battery Certification



- ISO/IEC 27001:2013 ISMS Certification
- ISO/IEC 27701:2019 PIMS Certification
- ISO/IEC 42001:2023 AIMS Certification

- EU CE Certification
- Japan MIC Certification
- US FCC Certification
- Korea KC Certification

- CB Certification
- PSE Certification
- UN38.3 Certification
- MSDS Report

Industry-leading Secondary Development



•OPEN

50 server-side API interfaces, 23 client-side API interfaces were opened.



•EASY

Based on Robot OS, Android SDK made it **as easy as mobile APP development.**



•FAST

Exclusive plug-in based extra development technology, **development cost is 1/10 of the industry standard.**

Usage Scenarios

CarryBot – Application Scenarios

CarryBot is an optimal delivery solution for settings such as Micro Fulfillment Centers and Factories.



Micro Fulfillment Center



Factory



Warehouse



Retail

CarryBot – Factory Case Study

Facilitate Rapid and Smart Upgrades of Production Lines with CarryBot.

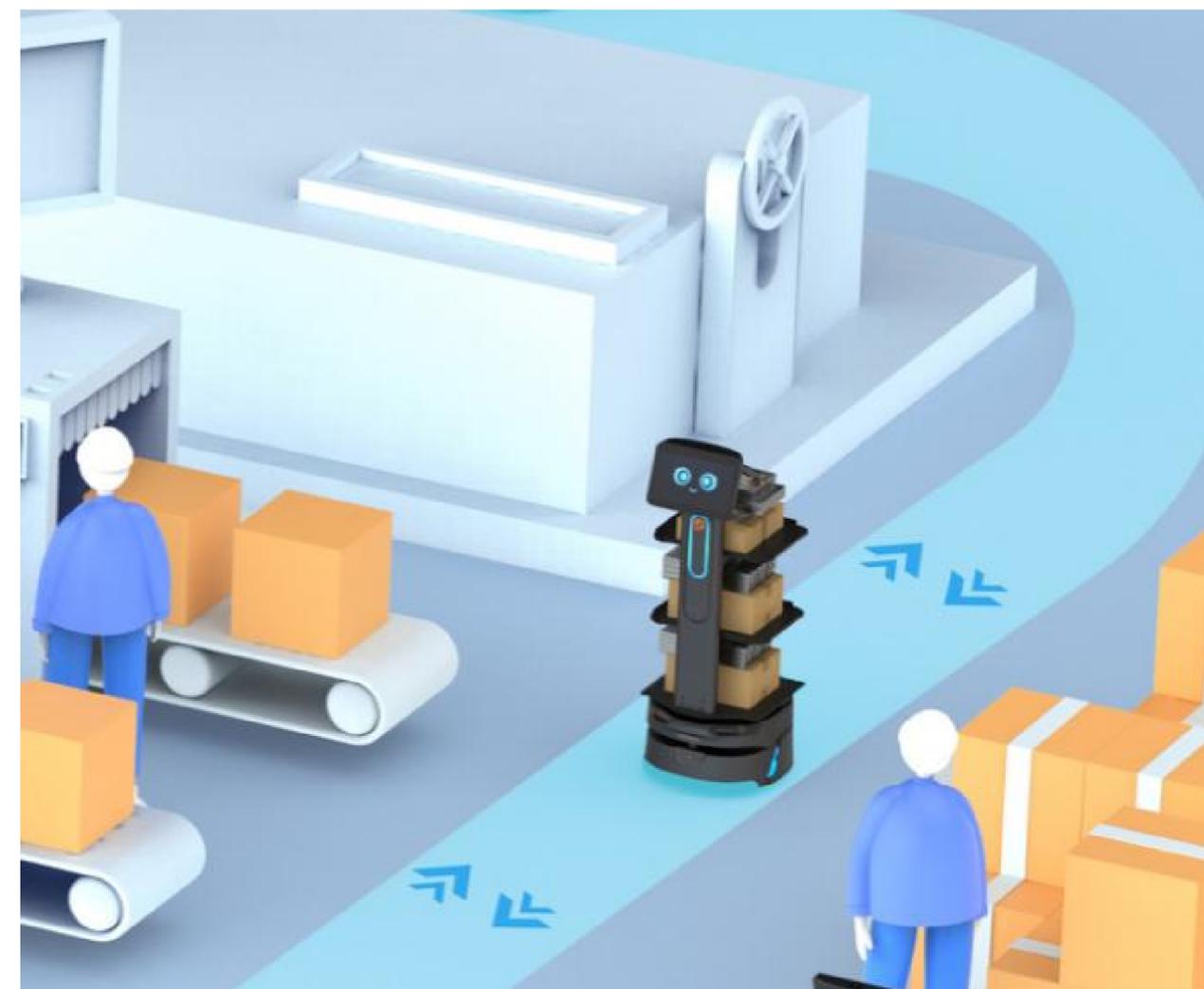




Point-to-Point Solution

Point-to-Point Delivery Solution is mostly used for **automating material transfer between raw storage and production through autonomous point-to-point shuttling.**

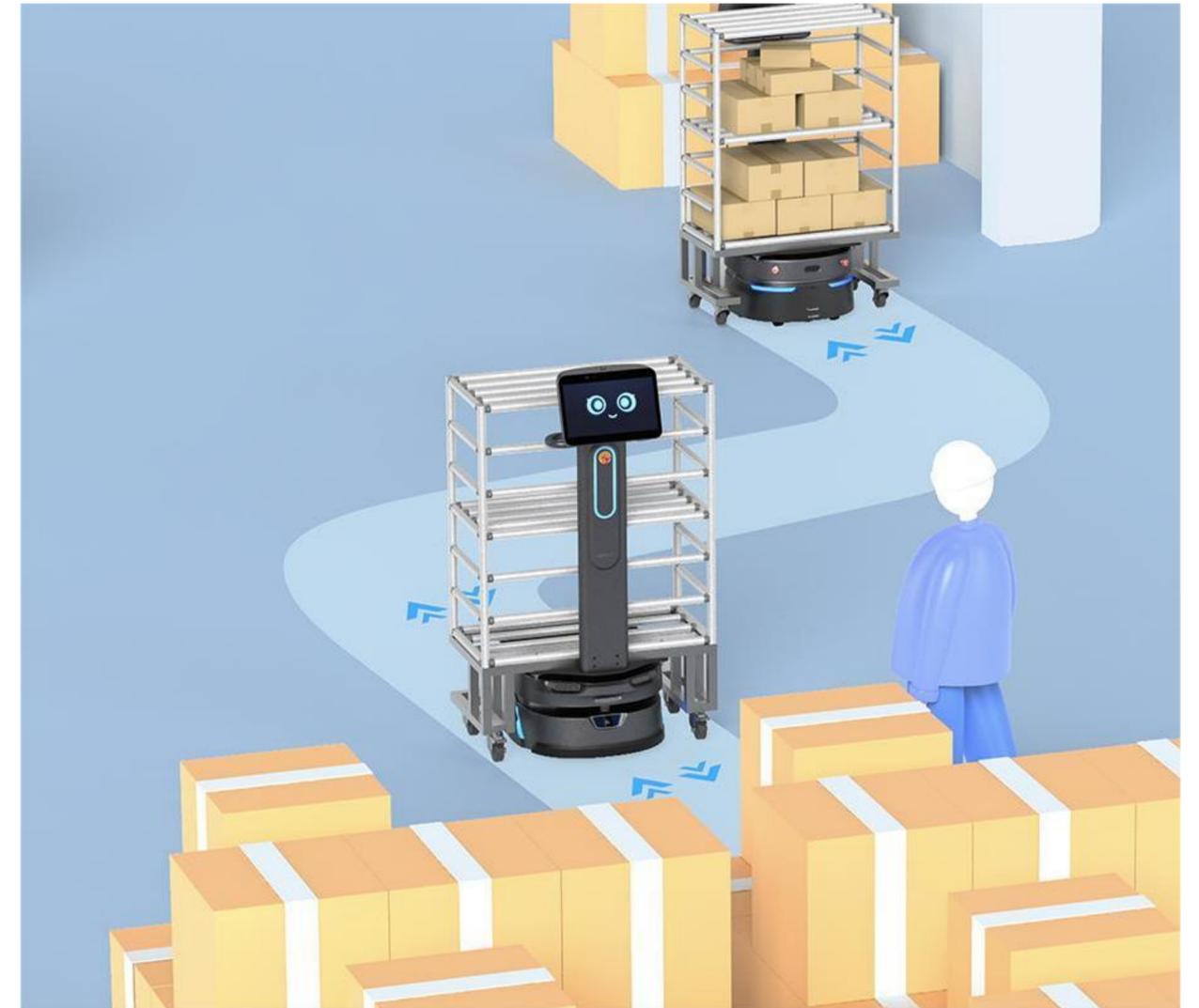
Introducing robots to shuttle between various fixed delivery points can effectively enhance factory efficiency.



Multi-Point Solution

The Multi-Point Solution is used to address the multiple delivery points within a factory. By configuring stopping points, while also customizing the duration of each stop, robots can automatically navigate the production line.

Robots also used for **collecting and transporting waste**, enhancing cleanliness and safety.



Smart Summon Solution

The Smart Summon Solution is like a call bell for robots. Whenever assistance is needed, the robot will promptly go to the designated location.

This enables factory staff to summon robots **in real-time to address the factory's temporary needs**, thus enhancing delivery efficiency.



About Us



OrionStar Robotics is a world-leading AI service robot solution company founded in September 2016. It employs self-developed, full-chain artificial intelligence technologies such as voice interaction and visual navigation, and integrates unique product development and technical application capabilities.

It has launched a series of industry-leading robots, including **delivery robots, service robots, and warehouse robots**. It has established the Robot OS, an open platform for OrionStar robots, and is driven to use AI technology to empower more people with truly useful robots. It prioritizes customer satisfaction as its top priority and has formed a "Service-Oriented Marketing Strategy" to provide customers with exceptional service.

60,000+

Global Deployments

550 Million

Total Service Times

60+

Sales Countries and Regions

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