

# Infrastructure-Free AMR Logistics Automation

Provides smart logistics and factory solutions  
via AI-powered autonomous mobile robots

The logo for TWINNY, featuring the word "TWINNY" in a bold, white, sans-serif font. A small orange horizontal bar is positioned above the letter "I".

TWINNY Co., Ltd.

**Solutions**

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02	TCS Solution	03-04

**Autonomous Mobile Robots**

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**TWINNY**

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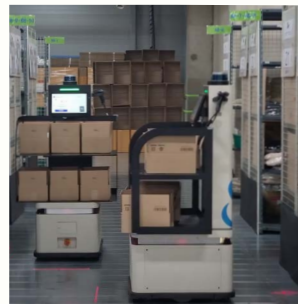
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# Order Picking Solution

An AI-based autonomous, customized logistics automation solution by TWINNY that maximizes operational efficiency by analyzing logistics center characteristics, environments, and workflow scenarios

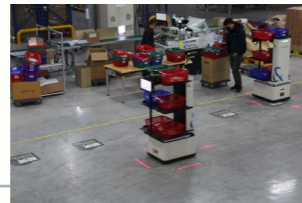
## Use Cases



**AGABANG Logistics Center**  
Mezzanine, B2B,  
High-Mix, Low-Volume,  
Multi-Order Picking



**STL**  
High Rack, B2C,  
Low-Mix, Low-Volume,  
Total Picking



**AGABANG Logistics Center**  
Lightweight Rack, B2C,  
High-Mix, Low-Volume,  
Multi-Order Picking



**YONGMA LOGIS**  
High Rack, B2B,  
Low-Mix, High-Volume,  
Total · Multi-Order Picking



**PICO INNOVATION**  
High Rack, B2B,  
Low-Mix, High-Volume,  
Multi-Order Picking

## Core AI Technologies

- 01 **Order Distribution Optimization** Analyzes orders to match optimized SKUs and locations, and consolidates invoices to maximize processing speed
- 02 **Obstacle Recognition Technology** Enables robots to detect and accurately avoid forklifts without reflective tape using forklift avoidance technology
- 03 **Multi-Robot Control** Enables multiple robots to plan routes without bottlenecks, ensuring stable operation even in noisy environments

## Scenarios

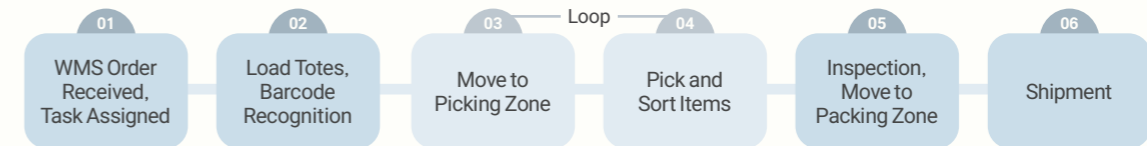
### Total Picking Scenario for Single Orders

Batch picking of multiple orders combined with AMRs reduces worker travel distance and increases picking density



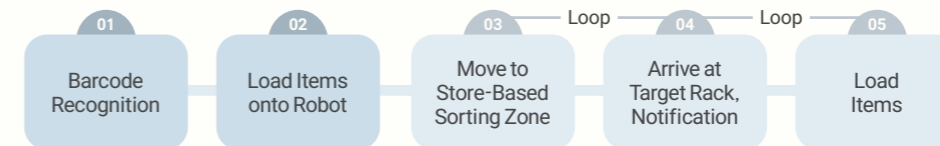
### Multi-Order Picking Scenario for High-Mix Orders

Uses order-based totes to perform picking and sorting simultaneously, ensuring both accuracy and productivity



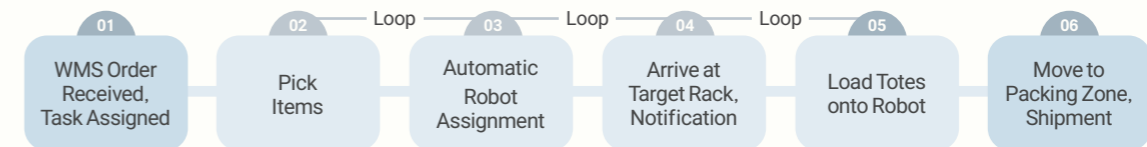
### Returns · Inbound Scenario

Standardizes inbound and returns processes through barcode-based automatic navigation



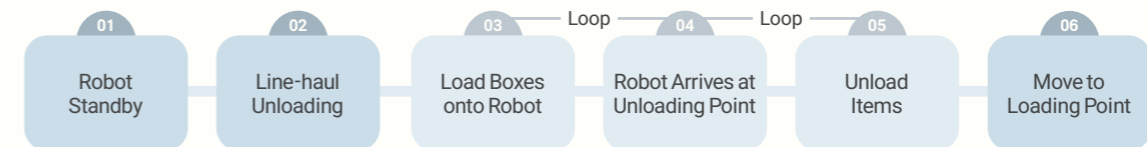
### Simple Transport Scenario for Any Logistics Center

Enhances operational efficiency by integrating with WMS, optimizing robot dispatch, and automating transport from heavy items to totes



### Sorting Scenario for Large-Scale Hub Centers

Enables automated transport through real-time distribution of same-day and early-morning delivery volumes to destination zones



# Autonomous Robot Operation Platform TCS Solution

An autonomous robot operation platform solution that integrates TWINNY software with diverse hardware systems

## Key Benefits

### 01 TWINNY's Proprietary Autonomous Navigation Software

Validates performance and reliability through real-world operations in diverse industrial environments

Ensures stable navigation in large, complex areas via 3D LiDAR-based precision localization

Enables rapid deployment within existing environments without infrastructure modifications

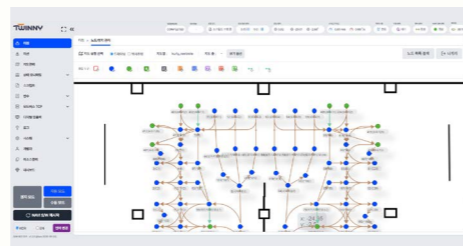
### 02 Web-Based Interface

Seamless Operation from Mapping to Control

#### TCS Agent

Provides an intuitive UI designed for effortless use by non-experts

Enables precise map generation and intuitive path configuration based on actual environments



#### TCS Server

Optimizes traffic flow via real-time monitoring of robot locations, status, and task progress

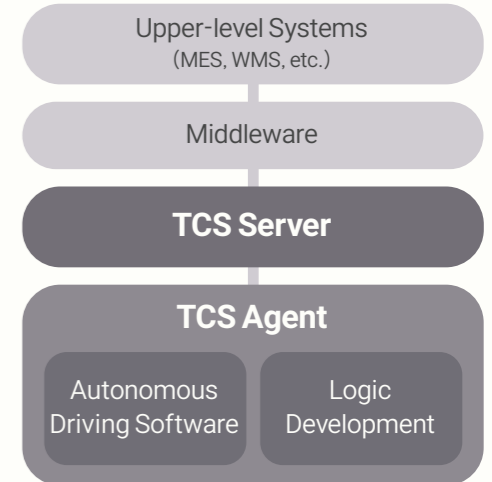
Delivers reliable operational results through simulators with autonomous navigation and control functions



### 03 Seamless Integration with High-Level Systems

Integrates effortlessly with various industrial systems, such as WMS and MES

## TCS Integration Architecture



## Use Cases

### 01



**DN Solutions**  
Integrates with collaborative robots to enable autonomous transport

### 02



**INFOIN**  
Delivers diverse services (coffee delivery, air purification, security, etc.) via autonomous navigation

**FieldRo**  
Powers autonomous driving capabilities on third-party hardwares

# Autonomous Logistics Robot NarGo Order Picking

03

An order picking robot that enhances picking efficiency in logistics centers through AI-based autonomous mobile technology



Brand-matching wrapping design ↑  
Cargo boxes customized to item properties →

## Key Benefits

### Quick Installation

Deployment in 3 weeks on average, no operational downtime

### Immediate Deployment, No Infrastructure Changes

Utilizes existing infrastructure and workflows without modification

### Improved Picking Accuracy

Reduces picking errors and omissions to enhance operational quality

### Reduced Workforce, 64% Labor Cost Reduction

Replaces repetitive tasks, enabling workers to focus on higher-value work

### Optimized Picking Routes

Minimizes unnecessary movement by optimizing routes based on order data

## Detailed Specification

### Safety Devices

3D LiDAR Environment Perception  
2D LiDAR Obstacle Detection  
Bumper Collision Prevention

### Basic Specifications

Size	696 × 546 × 1,509 mm
Shelf Size	500 × 509 mm
Payload	100 kg
Max Speed	1.5 m/s
Temperature	0–40°C
Humidity	≤ 80% RH
Illumination	100–1,000 lx
Network	Wi-Fi, LTE

### Battery·Motion Performance

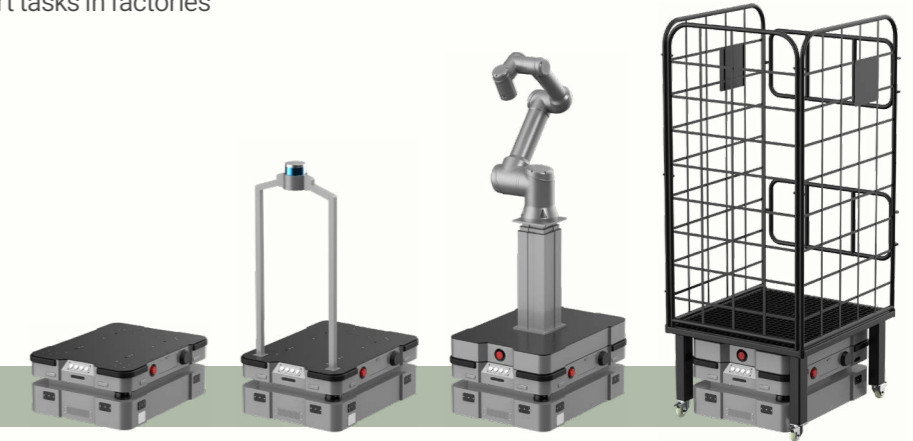
Battery	29.4 V, 54 Ah
Charging Hours	≤ 3 h
Operating Hours	≤ 8 h
Charging Method	Automatic/Manual
Step	± 20 mm
Gap	30 mm
Max Gradability	5°
Stopping Accuracy	100 mm

# Autonomous Logistics Robot NarGo Factory

04

An autonomous logistics robot that improves work efficiency and productivity by automating heavy-load transport tasks in factories

- ① Basic Type
- ② 3D Sensor Type
- ③ Robot Arm Type
- ④ Rolltainer Type



## Key Benefits

### Industrial Navigation, Stable Performance in Factories

Ensures reliable autonomous driving even in high-traffic factory environments

### Scalable Customization

Supports flexible integration of robotic arms, conveyors, and rolltainers

### Immediate Deployment, No Infrastructure Changes

Deploy directly on-site without additional infrastructure setup

### 24/7 Continuous Operation

Automates repetitive transport tasks to maintain seamless operations

## Detailed Specification

### Safety Devices

2D LiDAR Obstacle Detection  
Bumper Collision Prevention

### Factory300 Specifications

Size	820 × 622 × 330 mm
Payload	300 kg
Max Speed	1.5 m/s

### Factory600 Specifications

Size	762 × 1,052 × 378 mm
Payload	600 kg
Max Speed	0.9 m/s

### Basic Specifications

Temperature	5–40°C
Humidity	≤ 80% RH
Illumination	100–1,000 lx
Network	Wi-Fi, LTE

### Battery·Motion Performance

Battery	Li-ion, 50.4 V, 36 Ah
Charging Hours	≤ 3 h
Operating Hours	≤ 8 h
Charging Method	Automatic/Manual
Step/Gap	± 6 mm/30 mm
Max Gradability	5°

# NarGo Series

A series of autonomous mobile robots that automate material handling tasks across various industrial environments

## Key Benefits

### Customizable Cargo Structure

Tailors storage modules to meet specific service requirements

### Expanded Conversational Interface

Integrates LLM-based voice commands and context-aware interaction

### Integrated Indoor-Outdoor Navigation

Ensures stable autonomous driving in complex, dynamic environments

### Contactless Smart Delivery

Enables secure automated delivery within office and residential areas



NarGo60

NarGo100

NarGo Delivery

## Detailed Specification

### NarGo60 Specifications

Size	736 × 477 × 1,247 mm
Shelf Size	560 × 446 × 670 mm
Payload	60 kg
Max Speed	1.2 m/s
Temperature	5–40°C

### NarGo Delivery Specifications

Size	560 × 540 × 1,220 mm
Shelf Size	340 × 308 × 410 mm
Payload	30 kg
Max Speed	1.0 m/s
Temperature	0–40°C

### NarGo100 Specifications

Size	916 × 667 × 1,446 mm
Shelf Size	740 × 640 × 810 mm
Payload	100 kg
Max Speed	1.2 m/s
Temperature	5–40°C

### Common Specifications

Humidity	≤ 80% RH
Illumination	100–1,000 lx
Network	Wi-Fi, LTE
Charging Hours	≤ 3 h
Operating Hours	≤ 8 h

### Safety Devices

- 3D LiDAR Environment Perception
- 2D LiDAR Obstacle Detection
- Bumper Collision Prevention

# TarGo 100

A target following robot that increases work efficiency by supporting material transport while tracking the operator without additional devices

## Key Benefits

### Reliable Safety System

Plans secure robot trajectories by integrating a triple-layer safety system

### User-Friendly Operation

Features intuitive controls for immediate use without the need for training

### Device-Free Smart Following

Recognizes target information to track automatically without additional devices

### Tailored Customer Customization

Tailors storage modules to meet specific service requirements



## Safety & Reliability

- 01 Recognizes targets using RGBD camera technology
- 02 Perceives environments via 2D LiDAR sensors
- 03 Enables emergency stops through physical bumpers



## Detailed Specification

### Basic Specifications

Size	975 × 690 × 1,288 mm
Shelf Size	740 × 625 × 797 mm
Payload	100 kg
Max Speed	1.0 m/s
Temperature	10–35°C
Humidity	≤ 80% RH
Illumination	100–1,000 lx
Network	Wi-Fi, LTE

### Battery Performance

Charging Hours	≤ 3 h
Operating Hours	≤ 8 h

### Safety Devices

- RGBD Camera Target Perception
- 2D LiDAR Obstacle Detection
- Bumper Collision Prevention



# Clients of TWINNY

Our proven solution has already demonstrated its effectiveness across numerous enterprises.





## Autonomous Logistics Robotics Specialist, TWINNY

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