



Logistics Sorting Solutions



AGIBOT Innovation (Shanghai) Technology Co., Ltd.

Creating Unlimited Productivity through Intelligent Machines

Use Case Challenge Points



Labor Efficiency Bottleneck

- High labor intensity with low accuracy
- Labor efficiency limits equipment performance
- Significant fluctuations in labor demand, with high labor costs



Poor Compatibility of Legacy Robotic Arms

- Limited flexibility and adaptability, making it difficult to meet diverse production needs
- Poor generalization for various packages, resulting in low sorting efficiency for irregular packages



High Upgrade Costs for Legacy Solutions

- Costly equipment upgrade and extended modification period



Logistics Sorting Solution Overview

The AGIBOT G2 serves as a logistics sorting and infeed station. It organizes packages on the workbench, ensuring their barcodes face upward, and feeds them one by one onto the conveyor belt, where they are sent to the next stage.



Step 1

The head camera precisely locates packages

Step 2

Picking from the material stacking area to the singulation zone

Step 3

Identifying logistics sorting location information

Step 4

Self-adaptive adjustment for the end effector to grab a single package

Step 5

Place individual packages on the infeed table with the barcode facing upward



Typical Logistics Sorting Scenario Process

- Precise positioning: The head camera accurately identifies the package location;
- Package transfer: The end effector grabs a single package from the material stacking area and transfers it to the singulation zone;
- Label identification: G2 recognizes barcode and other visual information on the packages;
- Conveyor belt: The robot places individual packages with barcodes facing upwards on the feeding station, and the packages/materials are then conveyed to the next sorting stage.



Key Performance Indicators

- Operational efficiency: Achieves a sorting throughput of 40% to 100% of the human operation benchmark;
- Utilization rate: By deploying shared equipment across multiple operational lines, efficiency is increased several times compared to legacy robotic arm solutions.



Product Advantages

Without relying on pre-programmed paths or extensive manual commissioning, our end-to-end data-driven Vision-Language-Action (VLA) model effortlessly addresses the pain points of current logistics sorting scenarios.



Labor Efficiency Breakthrough

- Supports continuous 24/7 operation
- Compatible with other equipment
- Enables flexible robot deployment based on fluctuating labor demand for package sorting



Convenient Deployment and Operation

- Enables rapid deployment, reducing deployment time to hours
- Supports remote OTA upgrades



Strong Scenario Adaptability

- Compatible with common package forms, including boxes, bags, and irregular items
- Compatible with various package feeding orientations



Strong Environmental Adaptability

- The machine features an IP42 protection rating and operates within a temperature range of 0°C to 40°C



Product Overview



Multi-Scenarios Operational Capability

- Vertical operation height of 2.3m, horizontal arm span of 2.35m, and single arm payload capacity of 5kg for uninterrupted operation
- A total of 26 degrees of freedom (DOFs) (excluding end effectors), including 3 DOFs for the head, 7 DOFs for each force-controlled arm, 5 DOFs for the torso, and 4 DOFs for the chassis
- Supports sub-millimeter precision operation, making it competent in multiple scenarios, such as factories, warehouses, and homes
- Supports data collection operations with integrated VR and controller-based data acquisition solutions



Excellent Chassis Mobility

- The chassis features a four-wheel design supporting 360° omnidirectional movement, as well as in-place rotation and crabbing
- The maximum chassis speed is 1.5m/s



Stable Operation and Mass Production

- Built with industrial-grade components and validated through extreme environment testing, the robot is designed for robust durability and reliability, with 30,000 hours of stable operation
- Supports large-scale production with immediate mass delivery capability



Multi-Modal Perception Capability

- Equipped with a circular microphone array, enabling directional audio pickup and active noise cancellation
- Equipped with 3 fisheye cameras, dual LiDAR units, and 8 ultrasonic radars, providing 360° full-range coverage from close, medium, and long distances



High Safety

- Proactive safety: Supports collision prediction and active obstacle avoidance
- Passive safety: Full joint force-controlled arm, immediate stop upon collision detection
- Operation and maintenance (O&M) safety: Real time device status monitoring and alerts, comprehensive operation controls, one click fault recovery, and OTA upgrade support

Case Study

Damon Logistics Sorting Project

Damon Technology (Stock Code: 688360), a leading intelligent logistics system solution provider in China. To accelerate the commercial application of data-driven logistics sorting scenarios, nearly ten AGIBOT G1 robots have been deployed in real commercial logistics sorting environments. This marks the first commercial evolution of "data-driven" embodied intelligent logistics operations from development to deployment.

Products Applied

AGIBOT G1 + Genie Studio

Application Scenarios

The AGIBOT G1 serves as a logistics sorting station, suitable for secondary sorting, order staging, and other outbound operations, as well as forward and reverse sorting for apparel, multi-SKU item storage and retrieval in warehouses, and abnormal item sorting in the express industry, etc.



Core Highlights

Based on AGIBOT's self-developed embodied model training, the robot gradually expands from recognizing single items and basic "atomic actions" to performing multi-task combinations, improving its ability to "learn tasks from tasks" through autonomous evolutionary data collection methods.



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Shenzhen: Shenzhen Bay Technology & Ecology
Park, Nanshan District

Giga Data Factory

No. 5358, Zhoudeng Road,
Pudong New Area, Shanghai

AGIBOT Factory

Lin'gang Intelligent Manufacturing Park,
Fengxian District, Shanghai