Picking Robot

Robotic solution that completely automates order picking
to maximize efficiency and productivity

Interlake MECALUX

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The picking robot is a pick-and-place cobot (collaborative robot) designed to automate order picking. The robot retrieves products from a storage tote and deposits them in an order tote autonomously. Thanks to innovative deep learning-based vision software and a highly versatile gripping device, the robot handles a wide variety of items with absolute precision, regardless of size, shape, or finish.

Advantages

High throughput
The cobot can achieve up to 1,000 picks/hour. Its operating speed and capacity to work uninterruptedly 24/7 significantly streamline order picking and boost productivity compared to manual solutions.

Maximum efficiency
Goods-to-robot order picking systems minimize the possibility of error and free operators from repetitive tasks.

Great flexibility
The gripping device adapts to the characteristics of the product to be handled. As a result, the cobot can work with a wide variety of items of different shapes, surface finishes, and sizes.

Absolute precision
The vision software instantly calculates and identifies the best pick point for each product according to its attributes and position inside the tote.

Autonomous operations
Through the vision software's advanced AI algorithms, the robot can recognize unknown items without the need for prior training. This ensures immediate adaptation to warehouse inventory and variations in SKUs.

Integration and adaptability
The robot is compatible with other automated warehouse solutions, such as mini-load and shuttle systems.

Enhanced safety
The cobot can detect the presence of humans and objects in its vicinity and adjust its working speed, making its environment extremely safe. It does not require a physical barrier around it.

Ease of use and implementation
Its intuitive user interface and simple installation ensure a quick system setup.

Applications

Picking robots are ideal for facilities with large daily shipment volumes or high-intensity seasonal demand peaks.

Warehouses with intensive picking of multiple SKUs

Picking robots are perfect for logistics facilities that manage a large number of small-sized SKUs and a high volume of daily shipments.

E-commerce centers

Automated picking is the ideal solution for several key challenges faced by e-commerce companies, such as managing fast shipments and eliminating order picking errors.

Cosmetics and pharmaceutical facilities

The robot reliably handles items of various shapes and dimensions. This provides essential flexibility in the cosmetics and pharmaceutical industries, which often manage fragile and high-value products.

Food-industry warehouses

Automated picking enhances the effectiveness of order fulfillment for supermarkets and other food distribution companies in response to the rise of online sales.

Textile facilities

Picking robots streamline operations in the warehouses of fashion industry companies, as they can handle bagged garments.

Components

Camera
High-resolution camera mounted above the location of the storage bin containing SKUs. It takes a 2D color image, complemented by a 3D point cloud of the inside of the bin.

Arm
Compact, high-performance robotic arm with a gripping device integrated at the end. It provides maximum operational efficiency and a long reach of up to 51.2".

Rotoscan
Laser scanner that detects an operator's presence in the robot's working area, triggering the reduced operation mode. This slows down the cobot's speed to ensure the safety of humans in its vicinity.

Gripping device
Versatile, lightweight vacuum gripper that adapts to items of various shapes, surface finishes, weights, and dimensions. It grips products optimally, ensuring delicate handling to prevent damage during pick-and-place operations.

Vision software
The SIMATIC Robot Pick AI vision software (from Siemens) processes the image captured by the camera. With an extremely high degree of precision, it determines the optimal picking point and the best orientation for the gripping device. Through CAD modeling, the software is capable of identifying any product without requiring prior training.

Easy WMS warehouse management system
The WMS controls inventory traceability and generates inbound and outbound orders, which are transmitted to the cobot.

Cobots can share space safely with warehouse operators

Operation

1

Arrival of totes. The warehouse management system (WMS) sends a storage tote containing SKUs and one or more empty order totes for fulfillment. The WMS also tells the robot which type of gripper to use for that SKU.

2

Product identification. The vision system's camera takes a picture of the inside of the storage tote containing the SKUs. Then, the vision software analyzes the picture captured to identify the silhouette of the product to be picked and determine the best way to do so.

3

Product picking and placing. Using the data provided by the Siemens vision software, the robotic arm picks the selected product and places it in the corresponding order tote.

4

Picked order. Once picking has finished, conveyors transport the tote containing the order to another area in the facility (consolidation, shipping, etc.).


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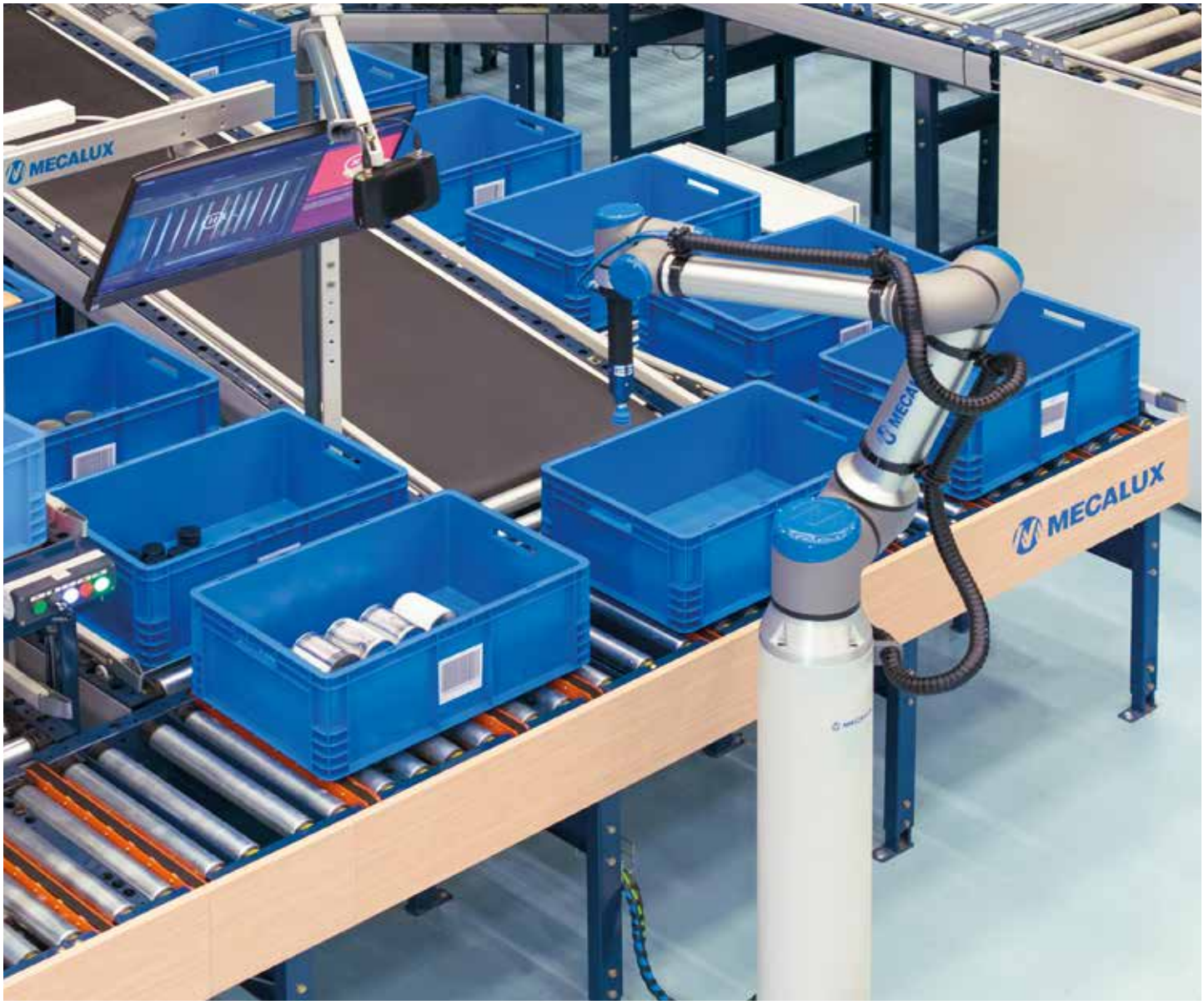

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