

 **SYSPEX**[®]

 **Robotics**

Pick Anything. Place Anywhere.



***AUTOMATIC ROBOTIC
TRUCK OR CONTAINER
LOADING & UNLOADING***

Click and (Un)load



Efficient

Automated picking at
900 cases/hour



Flexible

Adaptable to various docks
and warehouses



Easy to deploy

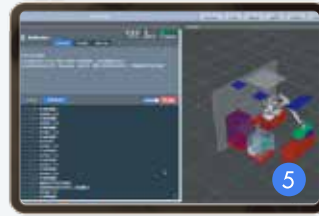
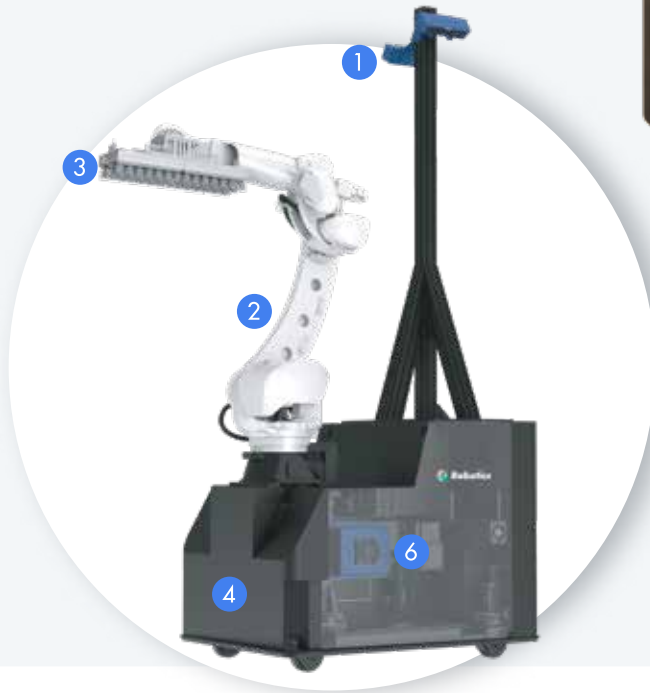
Put into use within existing
facilities and operations



Trailer (un)loading involves heavy lifting and carries high risks and costs when performed manually. XYZ Robotics' Trailer (Un)loading Solution is adaptable to different types of docks in warehouses. Through remote control, the robotic solution enables safe and efficient material handling.

The system comprises of RockyDual for trailer (un)loading and RockyOne for (de)palletizing. Two robots collaborate through a flexible roller conveyor or a telescopic belt conveyor. Using advanced robotic technology and intelligent perception algorithms, robots ensure efficient and accurate material handling. With plug-in power, the system supports continuous and stable operation, making it suitable for multi-shift high-throughput warehouses. The power cable is connected along the conveyor to avoid obstructions.

Core Technology

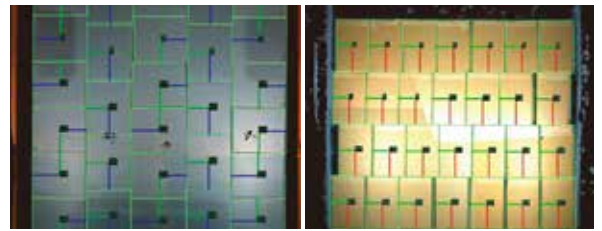


1. 3D camera
2. Robot arm
3. EOAT
4. Mobile base
5. Digital twin simulation environment
6. SLAM algorithm
Vision algorithm
Motion planning algorithm
Pallet planning algorithm



Precise localization and navigation

The mobile base utilizes SLAM algorithm to obtain a 360° 3D perception of its surroundings, enabling precise localization and navigation without QR codes. Thus, the robot can adapt flexibly to complex dynamic scenarios.



Model-free recognition of carton boxes

Deep learning and vision algorithms support model-free recognition of unknown carton box sizes and types, and thus streamline the robot system deployment.



Operate in compact layout

With full-cycle path and motion planning algorithms, dual-arm coordination achieves effective obstacle avoidance in a confined space and maximizes throughput.



Custom gripper design

The custom suction cup allows the robot to handle boxes on the top layer by picking from the top or front (with optional bottom support). The suction cup also supports multi-pick mode for greater efficiency.

Parameters



Models	RockyOne	RockyDual
Operation efficiency	(De)palletizing: 600 cycles/hour in 90° layout* ¹	Loading: 800 cases/hour Unloading: 900 cases/hour (up to 1200 cases/hour)* ²
Stack height	2 m	\
Suitable container size	Interior height: 2.3 - 2.7 m Interior width > 2.3 m	No length restraint
Eligible case specifications	Weight: 25 kg * ³ Side length: 200 - 600 mm * ⁴	
Eligible conveyor types	Flexible roller conveyor/telescopic belt conveyor	
Weight	1300 kg	2000 kg
Footprint	1.4 x 1 m	1.83 x 1.35 m
Maximum speed	2 m/s	1 m/s
Movement	Omnidirectional Ramp < 15% (10°)	Step < 10 mm Gap < 30 mm
Charging voltage	Three-phase 380 V AC	\
Battery life	Typical tasks with maximum payload & full-speed: 8 h	\
Charging time	Standard charging: 2.5 h (optional fast charging)	\
Power supply	\ * ⁵	Three-phase 220 V AC * ⁶
Operation temperature	0 - 50°C	

*1 Using multi-pick module, throughput = cycle rate x No. of cases per pick

*2 When the stack is regularly built up with a single type of carton boxes

*3 The general payload allowance is 25 kg standard carton boxes, while for certain tasks it allows up to 30 kg


*4 For other sizes, please consult our technical team for evaluation

*5 The battery-free option requires three-phase 220 V AC power supply

*6 The mobile base equipped with batteries allows cable-free movement

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