EasyPal collaborative robot

In collaboration with Rokae

Intelligent palletizing solution

EasyPal collaborative robot palletizing workstation

Zero programming intelligent palletizing solution for customers

- Complete installation and debugging in **1 hour**
- Set a new stack type in **5 minutes**
- Stack **9 to 13** boxes in one minute
- Create up to **1,000** palletizing paths for a single formula
- The pallet supports a maximum size of **1,400 mm × 1,400 mm**
- Stack **2 types of** products simultaneously
- Support **label orientation**
- Achieve free switch between **single mode and double suction** mode

Flexible collaborative robot
Heavy-payload flexible collaborative robot for palletizing, with a maximum payload of 25 kg, which is safe, efficient, and cost-effective

Workstation base
Portable mobile fixed/lifting base
The maximum palletizing height can reach 1,950 mm/2,550 mm

Palletizing process package
13.3-inch high-sensitivity capacitive touch screen intelligent palletizing process package, without programming

Flexible Pallet positioning system
Pallet detection and mechanical positioning system, with auxiliary positioning accuracy of 1 mm

End suction cup
High-suction sponge/vacuum suction cup
Applicable to products of various sizes, weights, and materials

Control button
One-click start, pause, emergency stop, and reset of the device

Roller line (optional)
Adjustable height 650 mm-730 mm for quick adaptation to the production line

Electric box control cabinet
Integrated electric control cabinet independently developed with low-energy consumption and high integration

Security system (optional)
Optional safety radar/safety grating have partition cooperation mode and safety stop function

Product advantages

High payload and high beat

- **The maximum payload is 25 kg, and the maximum palletizing height is 2,550 mm,** making it easy to meet the stacking needs of industries such as food, beverage, and medicine.
- Five-axis flexible collaborative robot for palletizing to reduce singular and unreachable positions, **with a palletizing speed of 9-13 boxes/minute**, which significantly improves production efficiency.
- Based on joint multi-sensor fusion **vibration abatement technology**, the robot runs smoothly without abnormal jitter during high-speed and heavy-payload operations.

Simple and easy to use

- Self-developed intelligent palletizing process package, featuring graphical guidance, touch screen interaction, **and operation process with Zero code and Zero programming**, can complete the first deployment through one-time drag and demonstration, even if zero-basis employees can immediately operate.
- It supports one-click start, and can **automatically generate palletizing type and palletizing path** based on input product and pallet to quickly adjust the palletizing type when switching different products.

Safety and reliability

- Equipped with an industrial grade torque sensor, independent certified safety controller, and **two-channel redundant monitoring**, it will lose the safety function in the event of a single failure.
- It supports more than 21 adjustable safety functions such as collision detection based on the **torque sensor, virtual wall, and collaborative mode**, and has vacuum detection and anti-drop **function**.
- It is equipped with **multiple safety IO interfaces**, and can be externally connected to safety radar and safety grating to provide multiple guarantees for production safety.
- It passes the **ISO 13849-1/PLd Cat.3, ISO/TS 15066,** ISO 12100, ISO 10218-1, and ISO 10218-2 series standards, and meets CE and UL certifications, with trustworthy safety.

Flexible deployment

- It adopts **high integration and modular design** and **supports plug and play,** with an area of approximately 2 m². Just connected to the power source and air source, **it can complete the first deployment in 30 minutes**.
- Reserve a fork angle position for easy movement. It can flexibly move between production lines, **quick switch lines and realize redeployment in 10 minutes**.

Flexible production

- It supports **multiple production line layouts, peripheral equipment** (lifting column, suction cup type) **scheme configurations**, and quickly switch palletizing schemes.
- It supports products of various sizes, weights, and materials, as well as **overlapping, forward and reverse staggered, and rotating staggered palletizing types,** to meet diverse palletizing needs of all industries.
- It can quickly switch multiple functional scenarios, and adopts **human-machine collaboration mode, dual machine collaboration mode, multi-machine collaboration mode** for flexible production.

Technical parameters

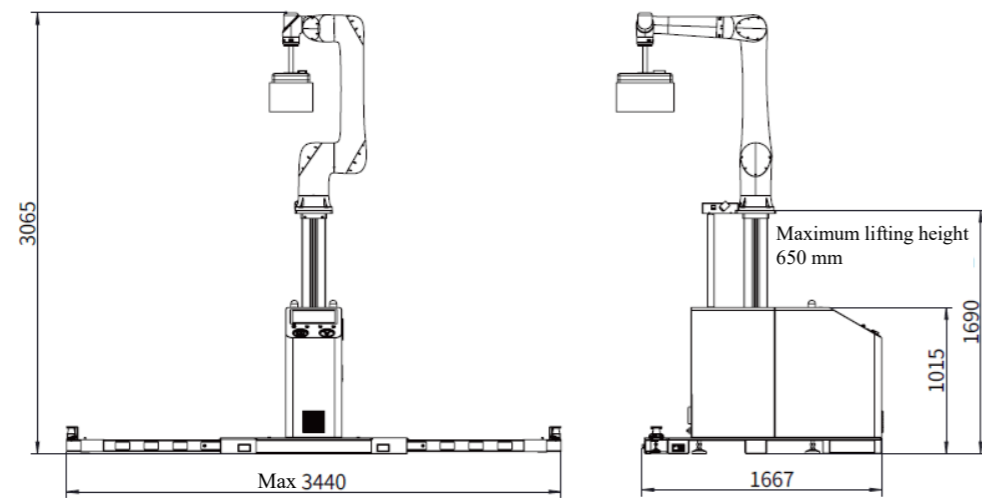|	RKE-PAR14 (fixed)	RKE-PAR14-R (lifting)	RKE-PAR21 (fixed)	RKE-PAR21-R (lifting)
Maximum payload* (including suction device)	17kg		25kg	
Maximum working radius	2047mm		1798mm	
Maximum pallet size	1400mm ×l400mm		1200mm ×l200mm	
Maximum palletizing speed*	9-13 boxes/minute		9-13 boxes/minute	
Maximum speed of joint	Axis 1/2/3: 120°/s, axis 4/5: 234°/s		Axis 1/2/3: 120°/s, axis 4/5: 234°/s	
Maximum palletizing height* (including pallets)	1950mm	2550mm	1650mm	2250mm
Repeated positioning accuracy	±0.05mm	±0.05mm	±0.05mm	±0.05mm
Communication mode	TCP/IP , Modbus TCP, EtherCAT, Profinet, Ethernet/IP, DeviceNet, CC-Link, CC-Link IE Field Basic			
IO quantity	32 digital input, 32 digital output			
IP protection level	IP67 for robot body, IP32 for others			
Temperature range	0-50℃			
Air source	0.5 Mpa-0.8 Mpa, Air consumption: 400 L/min			
Power source	AC 200-240V, 50Hz			
Total power	2.5kw	3.5kw	2.5kw	3.5kw
Total weight*	About 360 kg	About 400 kg	About 360 kg	About 400 kg
Floor area	1300mm×1667mm			
Compatible product size	Length (250-550) mm × width (200-500) mm × height (150-400) mm, those of special sizes shall be equipped with a suction device			
Compatible product surface	Ordinary cardboard box surface, various smooth surfaces, various metal surfaces			
Safety function	Support over 21 adjustable safety functions such as collision detection, virtual wall, and cooperative mode			
Certification	ISO 13849-1/PL d, ISO 10218-1, ISO/TS 15066, ISO 12100, EU CE Certification, NSF Certification			

- When equipped with a standard end suction cup, the maximum payload of the product is 14 kg or 21 kg.
- The actual palletizing speed depends on product weight, size, palletizing type, etc.
- The actual palletizing height depends on the product size, palletizing type, and gripper type. When using a pallet of 1,200 mm × 1,200 mm, the maximum palletizing height can generally be achieved.
- The total weight includes the weight of the robot and the end suction cup.

Economic practicality

The investment costs can be recovered within 6 to 12 months on average, reducing operational and maintenance costs
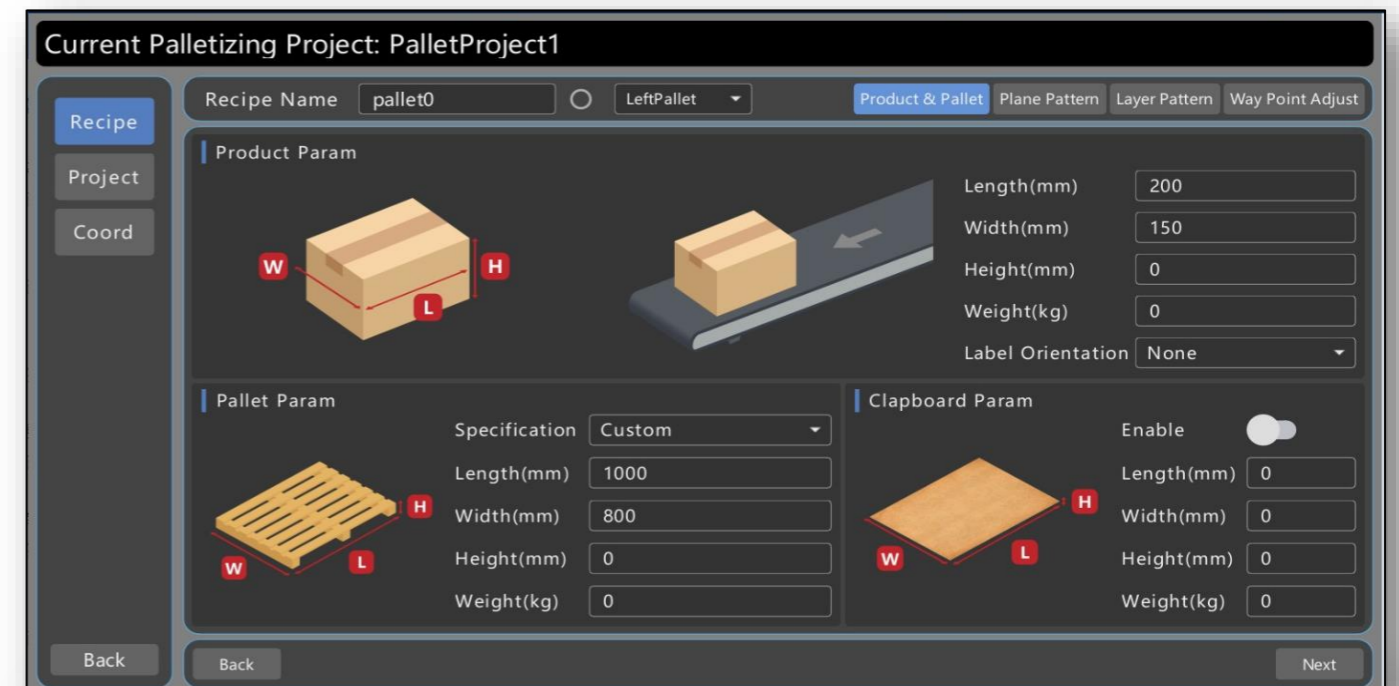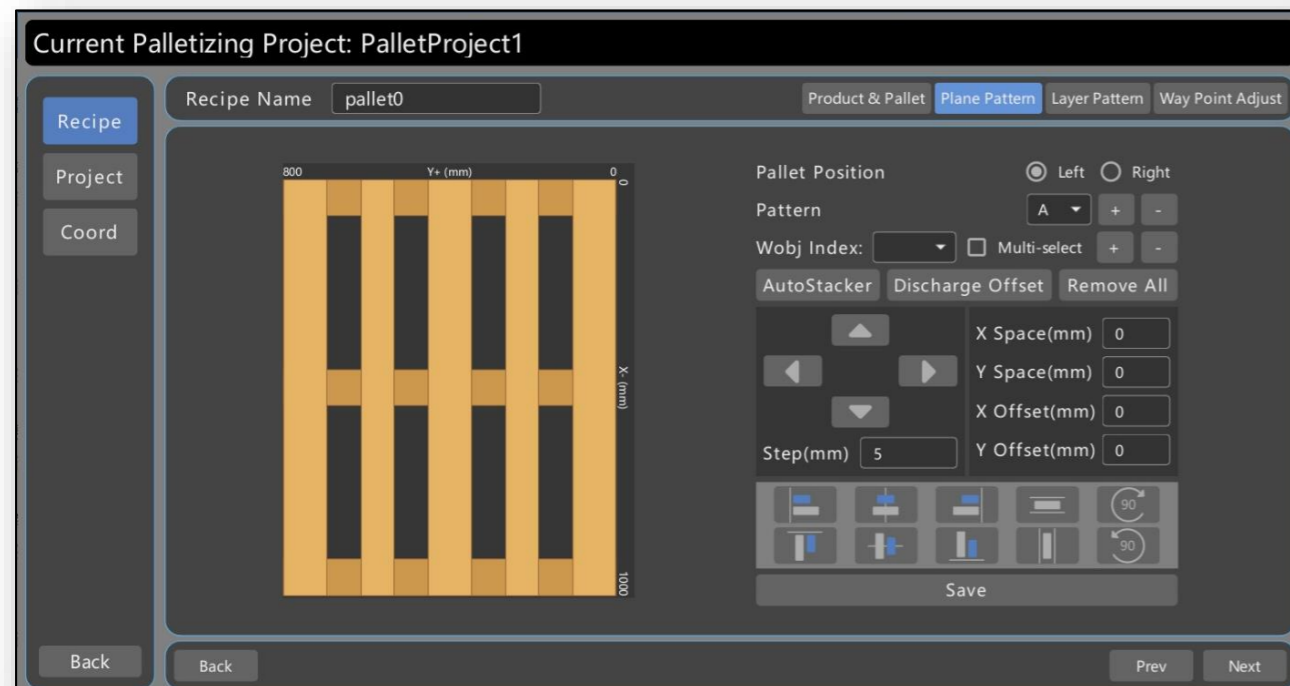
Product dimension diagram ▬

Unit: mm

3065

Maximum lifting height
650 mm

1690

1015

Max 3440

1667

With standard EU pallets 1200 x 800 on
both sides, the distance is 2240 mm

Configuration list ▬

Name	Quantity	Option	Remarks
Collaborative robot	1	Standard configuration	CR25/5-C collaborative robot or CR17/5-C collaborative robot, controller
Electric box control cabinet	1	Standard configuration	Integrated control cabinet
Workstation base	1	Standard configuration	Mobile fixed column/lifting column base, pallet positioning system
Palletizing process package	1	Standard configuration	Programming-free palletizing process package
End suction cup	1	Standard configuration	High-suction pneumatic sponge suction cup
Safety system	2	Optional	Safety radar/safety grating/safety vision/safety fence
Roller line	1	Optional	Length 1,000 mm × width 750 mm × height 650 mm

Intelligent Software ▬

ZTEC
ROBOT & VISION

ZTEC
ROBOT & VISION

+45 71 61 50 00
www.ztec.dk
info@ztec.dk