

KUKA

KUKA Systems Corporation North America

LAYER DEPALLETIZING LAYER PICKING



AuROrA
Automated Robotic Order Assembly

■ LAYER DEPALLETTIZING & PICKING – WHAT IS IMPORTANT?

Economical automation can only be achieved if the installed equipment is optimally utilized. Transferred into layerpicking systems, this implies that you are able to control the process and that the deployed technology can handle the highest percentage of your entire range of products and packaging types.

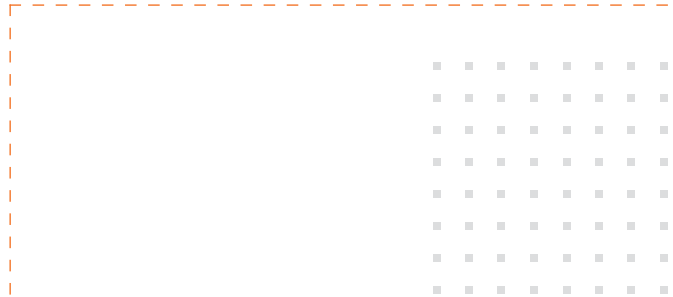
- Is layer depalletizing or order picking a challenge in your day-to-day operation?
- Do you have similar packaging types as shown in the pictures on the right side?
- KUKA Systems can help ... Keep reading to see how!



The variety of different product and packaging types (e.g. corrugated cardboard boxes, shrink wrapped items, open trays or boxes) in a distribution center have little in common, which makes automatic depalletizing and order picking difficult. However, as most package types have atleast a flat bottom, KUKA has designed a universal gripping system incorporating a roll-up principle. This enables you to handle layers of products where most other conventional technologies fail.

In this process, two servo driven rubber rollers are pushing against the pallet layer from opposite sides. The packages are thereby lifted up and rolled onto two symmetrical carrier plates. The gripper control software automatically adjusts the contact pressure and height position of the rubber rollers to suit the package weight and dimesions.

The roll-up principle supports a multiple layer pick cycle; thus, the overall picking performance can be significantly increased. The maximum layer number is limited by either the maximum payloadweight or the maximum payload height.



THE BENEFITS

- One stop shop solution, from the planning to the world wide after sales support
- Handling of a wide range of product and packaging types
- High palletizing performance means a high profitability
- No package damages due to gentle product handling and adaptive gripping process
- High system availability and easy operation
- Increased throughput due to multiple layer picking capability (e.g., picking two layers of open trays with cans in one cycle)
- Low noise level due to servo drive approach
- Accurate layer placement due to integrated layer centering
- No product drop in case of a power failure
- Safe gripping of layers even with holes and gaps in the pallet pattern
- High flexibility of palletizing line due to the use of robots
- High standardization (reduction of costs)



THE LAYER DEPALLETIZING GRIPPER

- Mounting Flange
- 4 Layer Centering Plates
- 1 Downholder for loose lids (optional)
- 2 Carrier Plates
- 2 Rubber Rollers for package lifting
- 1 Light Curtain to detect top layer
- Additional clamps to handle empty pallets (optional)

MAIN SYSTEM COMPONENTS

- A** KUKA Robot (KR 700 PA for layer de-palletizing & palletizing)
- B** ARR or Gantry. Can be attached to articulated robot, linear or area gantry robot
- B** Layer Gripper
- C** Gripper Controller including Application Software
- C** Pallet Contour Checking (optional)
- C** Detection and Removal of slip sheets (optional)
- C** Cell Controller with HMI and Safety Control
- D** KUKA.PickControl Application Software with interface to superior Warehouse Control System (WCS)
- E** KUKA Robot Control KRC 2



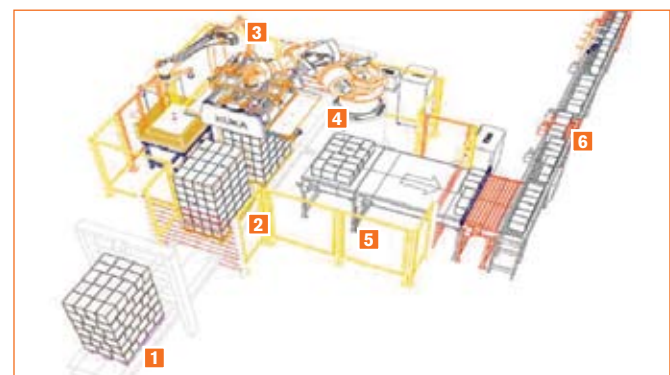
THE SYSTEM CONTROLLER

The system control includes the KUKA.PickControl software of KUKA AuROrA™ application framework and is the communication and control interface for the operator and the superior Warehouse Control System (WCS). It features commissioning support functions to simplify the product specific parameter identification as well as data connection to the storage management system.

THE KUKA DEPALLETIZING SYSTEM

- 1** Infeed pallet conveyor
- 2** Centering station
- 3** Pallet Handling Robot with Pallet Gripper
- 4** Layer Picking Robot with Layer Picking Gripper
- 5** Layer table with case descrambler
- 6** Package conveyor

TECHNICAL DATA	
■ Picking Performance:	Up to 5 picks/minute (depending on layout/packaging)
■ Temperature Range:	0-110 °F
■ Maximum Layer Weight:	Up to 440 lbs
■ Maximum Layer Height:	16"
■ Supported Pallet Types:	48" x 40" (L x W) (Other sizes on request)
■ Minimum Product Height:	2"
■ Energy Supply:	Local voltage and frequency



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