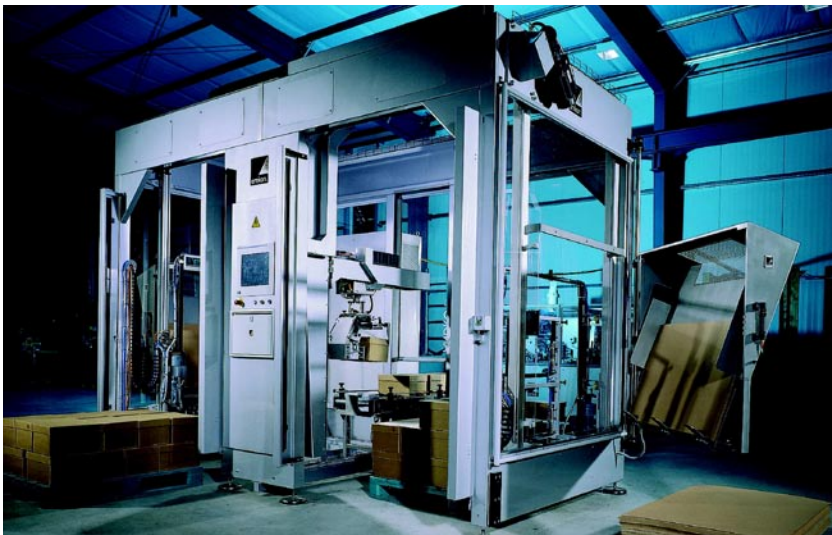


Drive & Control profile

Consistently Flexible

Emkon palletizer more versatile with IndraMotion for Packaging



The Android is unique because it is designed as a self-contained turnkey palletizer that can be integrated as needed into a production line.

Emkon Systemtechnik Projektmanagement GmbH (Germany) wanted a mobile palletizer that could be moved from one line to another and integrated into the production flow quickly and easily. The company needed a flexible controls solution that could quickly synchronize with a new production environment. They selected the IndraMotion for Packaging automation solution from Bosch Rexroth.

Emkon's Palletizer Android

The PZ 1-K Palletizing Unit in the company's *Android* series is a self-contained, turnkey, roller-mounted palletizer. It can be used as single-, double-, and multi-pallet station palletizer. A standard vacuum gripper takes the individual conveyor-fed products and packs them singly or grouped in up to 1 to 6 pallet spaces, and stacks these for palletization according to a specified layout. It allows for

Challenge

Design a cost-effective modular palletizer

Bosch Rexroth Solution

- Scalable, single-architecture solution with controllers, drives, motors, HMI, and development software
- IndraMotion for Packaging "Enhanced" version with IndraControl L40 compact DIN rail mount controller
- IEC 61131-3 compliant PLC and PLCopen motion function blocks
- Full communications support for fieldbus, SERCOS, and Ethernet

Cost Savings

- Cut machine cost 20%
- Reduce engineering, delivery and commissioning time more than 25%
- Slash engineering time 20%
- Decrease wiring costs 20-30%
- Trim control cabinet width 30%

different palletizing layouts and the introduction of slipsheets.

The machine handles all products for stackable primary or secondary packaging, such as folding boxes, bags and even rolls with a weight of up to about 50 lbs. Its modular design allows for later conversion into a centralized palletizing operation or for integration into Emkon's own modular carton packaging concept. Six Rexroth IndraDrive-controlled servo axes drive the Android—four for layered palletization and two for slipsheet handling.

Automation with IndraMotion for Packaging

Rexroth's IndraMotion for Packaging automation system fulfills all axis-related motion and positioning functions. Bosch Rexroth used a scalable hardware/software architecture based on the embedded IndraLogic PLC programming and runtime system. A key feature is the tight integration of highly developed motion control technology with a standardized PLC. SERCOS provides high-performance synchronization of the axes.

Bosch Rexroth offers three versions of IndraMotion for Packaging for a wide variety of machine designs. The "Basic" system is for drive-based applications; the "Advanced" is for controller



The palletizer uses six Rexroth IndraDrive servo axes with an IndraMotion for Packaging system solution.

or PC-based applications for greater overall functionality.

The Emkon PZ 1-K Android uses a compact controller-based "Enhanced" solution, based on the IndraMotion MLC MotionLogic platform to provide intermediate functionality when operating with up to 16 servo axes. The system uses open standards such as IEC 61131-3 and PLCopen with specialized technology function blocks for linear six-axis interpolations for pick and place or for palletizing applications.

Up to 64 controllers can be networked via cross-communication to provide precise synchronization of an entire line or process. The core hardware component is Rexroth's

IndraControl L40, a compact DIN-rail-mounted controller combining the advantages of embedded PC architecture with highly scalable I/O systems. In addition to 16 fast inputs and outputs, the controller base module offers standardized communication interfaces such as Ethernet, PROFIBUS, RS-232 and SERCOS. The controller base modules can be expanded with additional communication interfaces or technology modules.

The PZ 1-K's process program is generated using Emkon's offline palletizing system. The so-called handling module, one of Bosch Rexroth's technology modules, interprets the command syntax from the offline palletizing system and converts it into specified axis movements. This solution offers a great degree of freedom for handling operations. Operation is currently configured for four main axes plus two manual axes and fulfils the requirement for simple scaling.

An IndraControl V platform provides an HMI with interactive operator guidance for all states of operation. The open architecture of the automation system supports all current fieldbus systems and is easily integrated into existing machinery. The PZ 1K uses PROFIBUS-DP. In addition, the control system enables remote diagnosis and servicing.

Rexroth
Bosch Group