

Robo-Kombi

Multifunctional robot for the bottling industry



ROBOTICS PROVIDE THE MOST COMPLETE AND TECHNOLOGICALLY ADVANCED SOLUTIONS TO MEET THE DEMAND FOR INCREASINGLY FLEXIBLE AUTOMATION IN BOTTLING LINES. ROBOTS ARE NOW A REGULAR FEATURE IN THIS SECTOR, DUE TO THEIR GREAT VERSATILITY AND RELIABILITY. THIS IS FURTHER ENHANCED BY THEIR ABILITY TO OPERATE IN REDUCED AND CONTAINED PRODUCTION AREAS.

Multifunctional robot for the bottling industry

For the bottling sector Sidel has created Robo-Kombi, a multifunctional palletizing robot. The system, when suitably equipped can be employed for all types of activities: pal/depal crates, pal/depal kegs, pal cans, pal packs, pal/depal loose bottles, stacking/unstacking empty pallets, inserting and

removing pads, crating decrating, etc.

Robo-Kombi is part of a vast range of products and system devised to meet the highly varied customer requirements in the sectors of palletizing and secondary packaging.



Advantages

- Operations may be carried out at several stations, thus replacing several equivalent traditional machines, and all controlled by a single operator
- various configurations may be created with entries/exits oriented in any direction
- the work cycle may be modified and optimized by customizing the system through precise trajectories and conditions using dedicated software and a joystick
- several different robots can be included in the island with the possibility of operating in parallel at the same work position
- head change can be automatic with consequent reductions in format changeover times.



Crate packer



Crate depalletiser

Robo-Kombi system

Robo-Kombi as a system can be applied in various areas, from crates to loose or packs bottles, handling both complete layers and rows, whose potential output ranges from 450 cycles/hour with 600 kilograms at wrist up to 550 cycles/hour with 300 kilograms.

Sidel's long experience in the field of bottling has enabled its experts to develop and integrate around the central robot unit the whole handling and conveying system specific to each individual application.

The key equipment in the system is the gripping head whose various configurations determine the robot's method of operation:

- head with hooks or lateral guides for handling crates
- multi-row head with plates made of steel or carbon fiber for packs or cartons
- head with individual tulip-shaped grips for loose bottles in crates and/or plastic trays
- head with guides or lateral closing for empty PET bottles
- head with spikes and suction cups for pallets and pads.

The heads have a frame manufactured with a high ratio of allowable stress/weight material, suitably shaped to guarantee great rigidity and limited use of floor space. The heads are also equipped with a security system to safeguard the equipment from collision with any extraneous or badly positioned objects. Each head may be equipped with an automatic grip changeover, thus allowing for very fast format changeovers with no operator involvement. Consisting of a male grip (installed on the robot) and a female grip (on each head), the system is designed according to the concept of "intrinsic security".

The presence of a dedicated tool area enables operators to carry out preparation and/or maintenance activities on individuals heads off-line while the robot continues to work.

The operator-machine interface consists of touch screen providing information about the state of the system peripherals and a programming unit equipped with joystick and a dedicated keyboard with display for the robot.

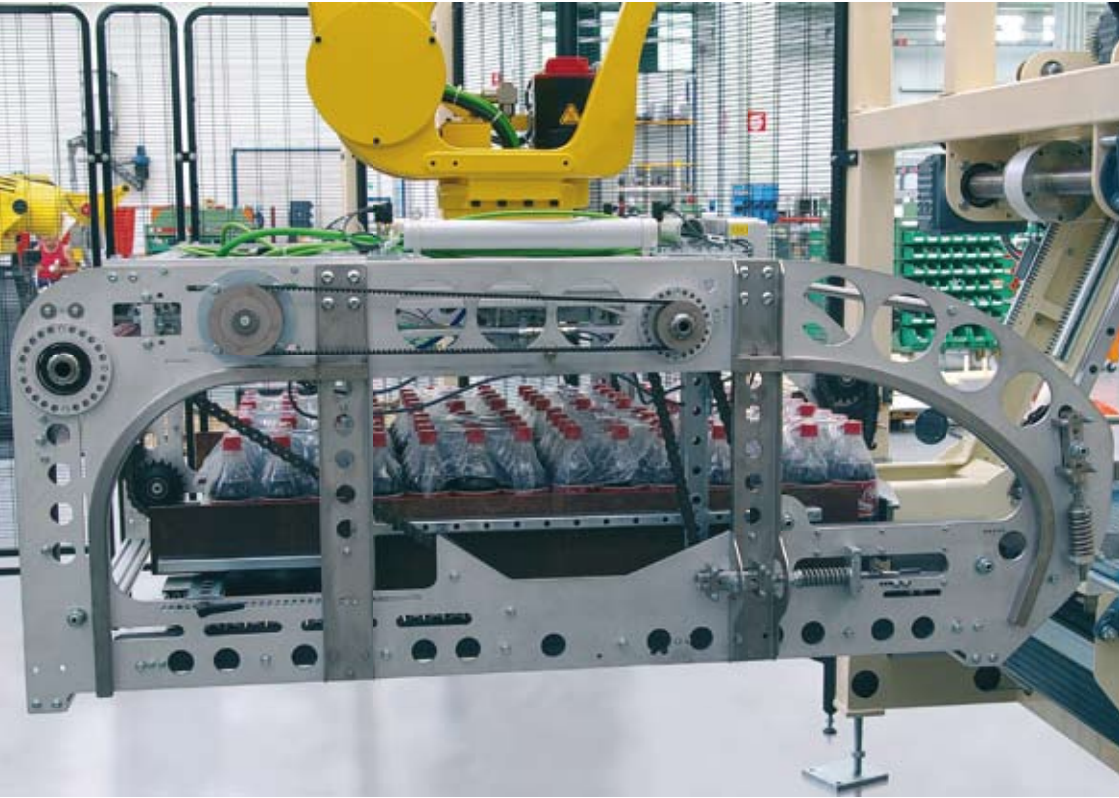


- 1 - Crating/decrating applications
- 2 - Palletizing/depalletizing applications



1	2
3	4

- 1 - Supporting roller gate system
- 2 - Keg gripping head
- 3 - Layer sucking gripping head
- 4 - Pack side pressure gripping head



Technical features

Max. load capacity at wrist	160 Kg – 300 Kg - 450 Kg – 600 Kg
Throughput	From 400 t 550 (According to the application)
Max height of working field	2700 mm
Max width of working field	1500 mm
Machines axes rotation	360 (°)
Repeatability	± 0,5 mm
Power feed	15 KVA
Unit free air consumption	200 N.L./1'
Air feed pressure	6 ATE
Standard voltage	Power 380V - 3PH – 50 Hz; controls 24 V DC
Motor and electric protection	IP 54 C.E.I. UNEL



Empty PET bottle gripping head



Filled cans sucking gripping head

