

Robogrip

The all-rounder for packing and palletising



Large operating range



Flexibility is one of the special features of a robot which is used for packing and palletising. In addition to packing and unpacking tasks, the Robogrip masters palletising tasks for single packs, rows or layers. With a large number of optional gripping or multifunctional tools the Robogrip is ready for any and everything. Its large operating range enables the robot to access an amply dimensioned operating surface and thus ensures utmost efficiency during packing and palletising.

At a glance

- Articulated-arm robot with four movement axes
- Output, depending on the load-bearing capacity, of up to 550 cycles per hour with a standard pivoting range of 2 x 180°
- Safe operation with a controller-monitored safety system



Highly flexible and fast



The Robogrip reliably masters all packing and palletising tasks.

Field of applications

- Palletising pack rows and single packs
- Palletising of complete layers of returnable and non-returnable packs
- Picking up and setting down of containers in rows/complete layers
- Packing and unpacking of complete layers or rows or single packs
- Supply of carton blanks to packer magazine

Output range depending on the application and pivoting area

Model	Output up to	Load-bearing capacity at the wrist-joint	Pivoting range
Robogrip with four axes	450 cycles per hour	500 kg	2 x 185°
	410 cycles per hour	700 kg	2 x 180°

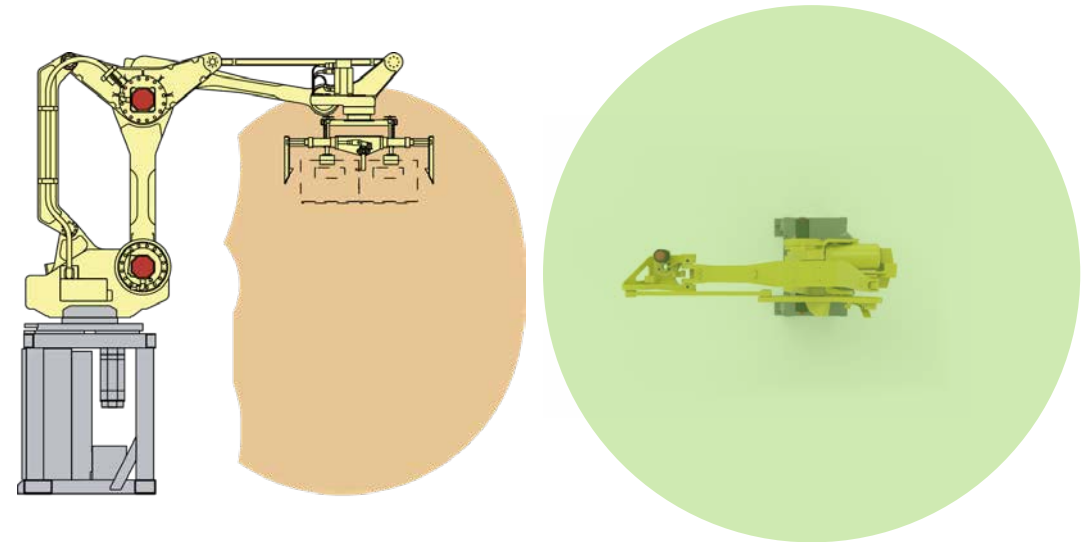
Method of operation



- The robot is mounted on a stable base and can be rotated by 180° in both directions. The 500 kg robot allows a rotation of 185° in both directions.
- All the rotating shafts are moved via zero backlash gears with servo motors directly attached to them.
- The gripper unit is mounted with a central latch and it is optionally available as a fixed tool or it is equipped with a self-centring quick-change coupling.
- The gripper principle is adjusted to suit each specific field of application. Multi-functional tools are used for combined tasks.

Operating range

The envelope (orange bubble) shows a cross-sectional view of the curve of movement in the Robogrip operating range. The operating range delineates a ring (green) around the robot if seen from above.



Robogrip with four axes

Technical details

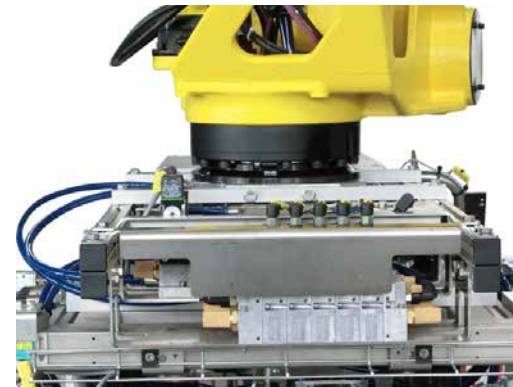


Design features

- Articulated robot with four axes in robust cast design
- Freely combinable, superimposed movement axes
- Drive system protected from dust and splashing water
- Maintenance-free servo motors in all movement axes
- Programmable logic control (PLC) integrated in the robot base
- Only electrical, which means maintenance-free braking processes in normal operation
- Mechanical stopping break when robot is turned off
- Backlash-free cycloidal gears with integral crossed roller bearing
- Standardised gripper unit couplings

Additional equipment

- Space control
- Line track
- Automatic change system for gripper unit change-over without operator intervention with three optional variants for storing and transporting the gripper heads
 - Stationary changing stations within the robot's radius of action
 - Handling parts trolley
 - Travelling of the changing station on the pallet conveyor



Automatic gripper unit change-over

Assemblies

Gripping tools



Bar-type gripper unit

- Picks up layers of pre-grouped bulk-glass containers and positions them on the pallet
- Inserts layer pads, trays or inverted trays with optionally available vacuum grippers



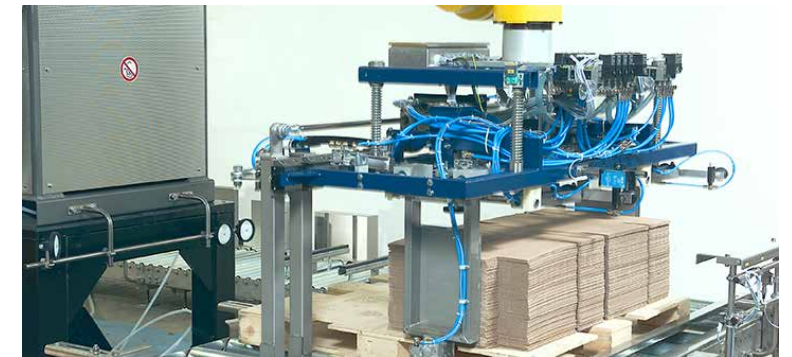
Shutter gripper head

- Sets the non-returnable pack down on the pallet gently and without pressure
- It is especially suitable for sensitive packs



Fork gripper head for carton blanks

- Depalletises carton blanks
- Picks up the stack of blanks directly from the pallet and places it on a carton magazine



Assemblies

Gripping tools



Jaw gripper head

- Grips complete layers of returnable packs from all four sides
- Processes also full crates with an optional hook system



Suction gripper unit

- Can use suction to lift both empty and full cans layer by layer and set them down at the location they are required for further processing
- Further processing possible at floor level



Assemblies

Gripping tools



Individual gripper units make the Robogrip a flexible partner in the packing and palletising process. Some examples of its numerous possibilities:

Combined gripper unit

- Enables packing and palletising with just one gripper unit
- Picks up containers from the conveyor using packing cups and packs them into crates or cartons
- Grips packs with an integrated hook and composes them to the required layer pattern



Jaw gripper head with clamping function and layer pad inserter

- Picks up Multipacks in rows and palletises them
- Equipped with automatically adjustable clamping devices
- With its integrated vacuum grippers, it can also process layer pads



Cup gripper unit

- Unpacks and packs complete layers or rows of containers from or into crates, displays or cartons



Robogrip in everyday operation

Application examples

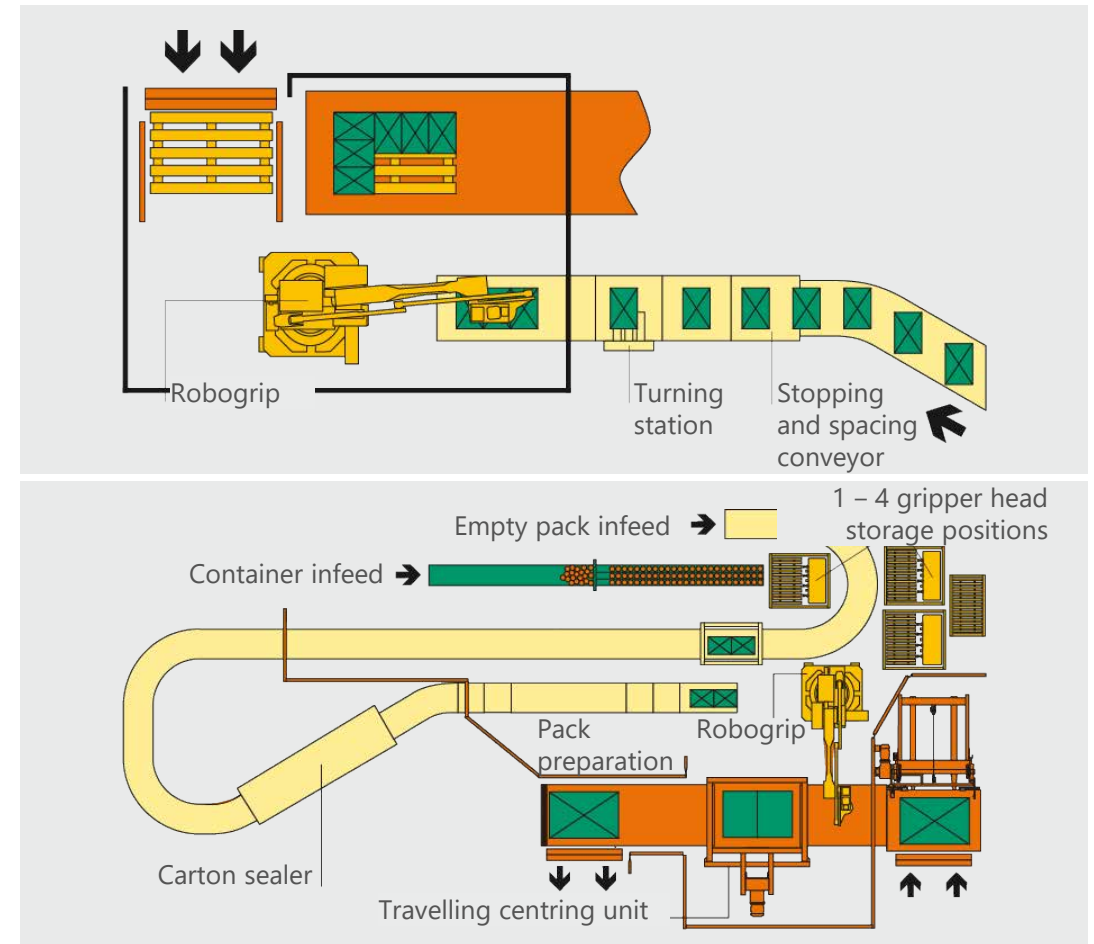


Palletising of packs

- Using a jaw gripper, the Robogrip picks up the rows of packs and places them on the pallet.
- The rotating combined gripper unit can also create interlocked layer patterns and inserts layer pads.
- The Robogrip picks up the pallets from a centring frame and positions them on the palletising station.

Combined packing and palletising

- The containers reach the palletiser via a container table in H-design. Depending on the requirements, the Robogrip selects the appropriate gripper unit and packs the bottles into cartons or plastic crates.
- Afterwards, it uses the palletising tool of the combined gripper unit to put the packs on the pallet, assisted by the layer centring unit.
- Depalletising and unpacking of cartons or crates is carried out in reverse order.



Robogrip in everyday operation

Application examples

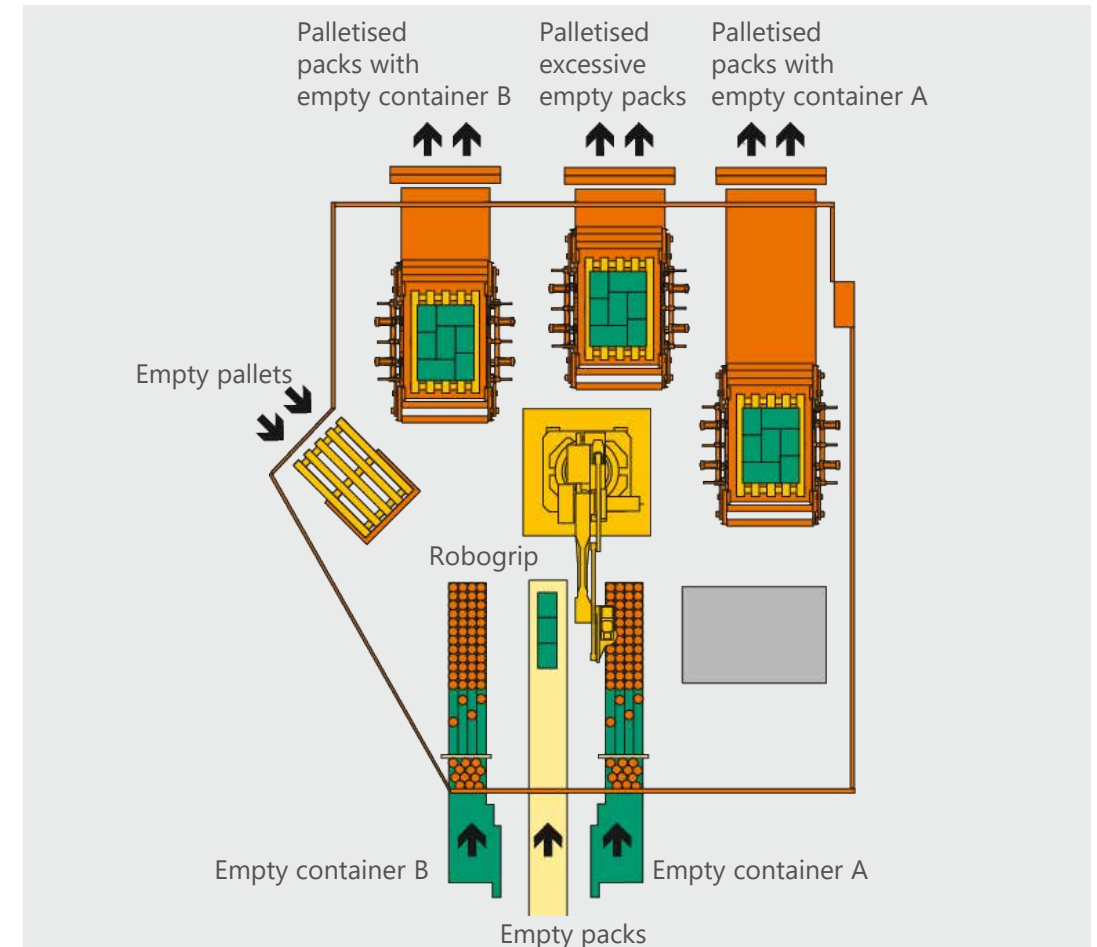


Empties sorter

- Different container and crate types are fed on conveyors to the Robogrip where they are arranged to form homogeneous packs and stacked onto pallets.
- The Robogrip picks the pallets from a centring frame and positions them on various pallet conveyor lines.

Palletising according to type

- Different packs holding containers of one type are fed on a common feed conveyor, identified with a bar code scanner and distributed onto several conveyors according to their type.
- A sensor monitors the filling degree of each individual feed conveyor and passes on this information to the robot controller. Depending on the filling degree, the Robogrip can now sort the packs according to their types.



Robogrip in everyday operation

Operation and safety



Operation

- Easy touch-screen operation
- Display of all relevant production data
- Easy access to all operating and maintenance points
- Operation and parameterisation possible via remote service

Guard system

- Stable fence guarding with electrically interlocked door
- The operator must log on to open the fence guarding
- Travelling movement of the robot into a safe position
- Afterwards, release of the access door



Benefits to you



Low space requirements

Its compact design enables the Robogrip to be installed on small areas and in low halls.

Low maintenance requirement

The Robogrip is characterised by its low maintenance requirements and its high availability. This is ensured by its maintenance-free servo drives and the low number of wear parts.

Individual equipment

Many different gripping tools are available for the Robogrip. Simply configure your individual robot that will fully meet your requirements. Our Krones product specialists will gladly advise you on which solution is best for your needs.

Precise and gentle product movements

The optimum access close to the floor enables easy change-over without tools within minimum time.

Wide field of application

Packing, palletising, sorting: The robot can be used for a large number of different purposes. It also safely and reliably masters exacting combined tasks.

Requesting a new machine

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