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Hauser Pallet Handling Robot PPR50

The integration of mechanical and electronic components



ENGINEERING YOUR SUCCESS.

Parker Hannifin

Strong group of companies world-wide

Electromechanical Automation Europe

Competent partners are needed in the automation industry. This applies in particular to suppliers of high-quality electrical and mechanical components. High development potential, world-wide sales and service as well as a globally organised company structure – these are features you can rely on at Parker Hannifin. At more than 250 manufacturing locations, over 48000 employees create an annual turnover of \$6 billion.

“Think globally, act locally” is one of the principles of the organisation. A multitude of medium-sized companies forms the mainstay of this world-wide organisation. This structure ensures proximity to the regional markets and above all to the customers. Work with the Parker Hannifin Group - we speak your language.

The international company structure of Parker Hannifin ensures excellent service world-wide - in times of increasing globalisation, in particular for manufacturers of complex automation equipment, this is a fundamental success factor.

Three locations in Offenburg (Germany), in Milan (Italy) and in Poole (UK) form the Electromechanical Automation Europe (EME) Division within the Parker Automation Group.

Within EME, mechanical and electrical components carefully adapted to each other are developed and produced for the automation of precision motion.



Parker offers you a comprehensive, carefully harmonised product portfolio – from component to system. Profit from our experience.



HAUSER in Offenburg (Germany)



SBC in Mailano (Italia)

Faster automation through standardization

Components for more economic

Faster automation through standardisation

Portal robots automate orientation, moving and stacking of packages on pallets. This relieves staff members of monotonous activities that are often physically demanding – especially in the production of consumer goods such as food and luxury items or pharmaceutical products. Due to an extremely high level of standardisation, Parker is able to deliver economical pallet handling robots within a very short time period.

Manufacturing enterprises need to become ever more flexible to be able to adjust to rapidly changing order situations. This makes it necessary to acquire automation equipment and place it in operation within a few weeks or months. Previously this could only be done with great difficulty, if at all. Planning, configuring and setting up pallet handling robots was expensive and time-consuming and required a great deal of work. Based on the user's specifications, a great number of calculations had to be carried out at the manufacturer's site. For example, these included dimensioning linear modules to match the loads to be transported as well as selecting the necessary transmission elements to achieve the required speeds and accelerations. Because of repeated adjustments to suit the client's needs plus optimizations where needed, project planning and configuration often lasted several months. The result of this was unnecessarily high and uneconomical costs for the client and manufacturer. This also stood in the way of flexible, short-term adjustment to a specific type of production.

Minimising cost and time during acquisition

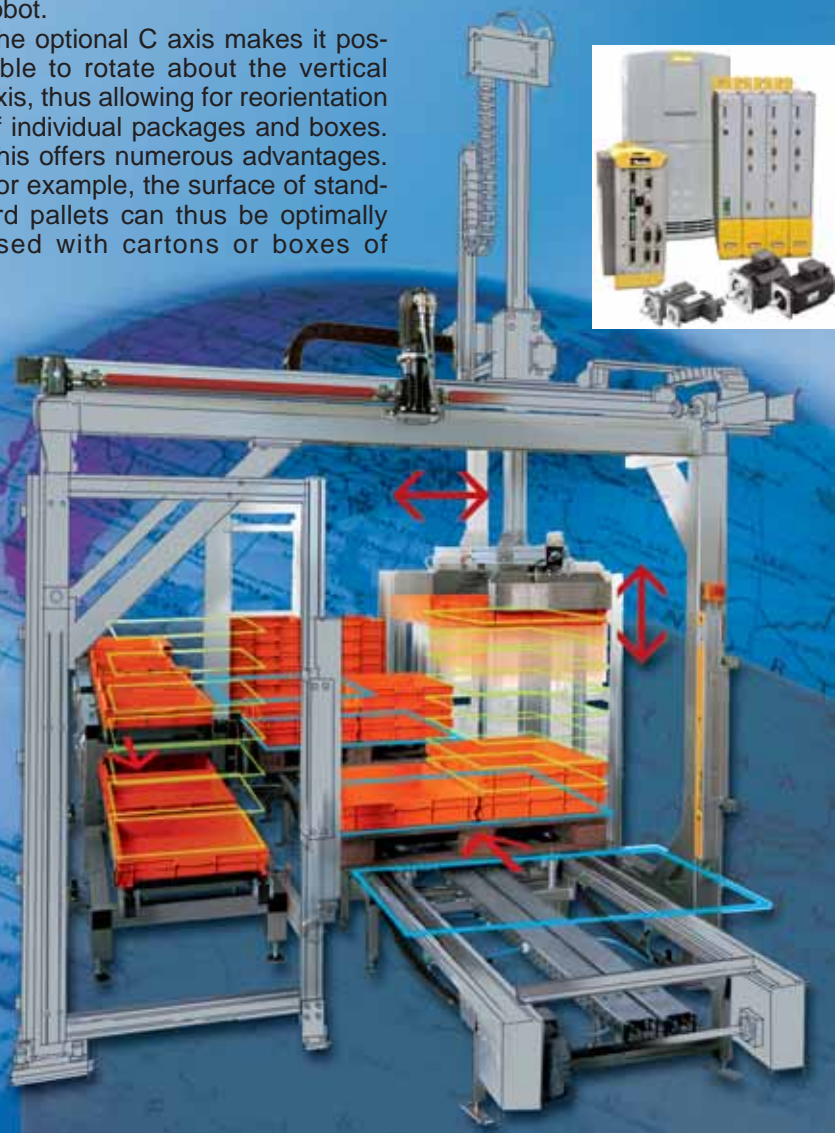
Now significant improvements are available with standardised pallet handling robots from Parker. They are specially designed for moving and stacking crates, both cardboard and plastic. They are equipped with three linear actuators (X, Y and Z axis) and an optional additional rotation axis (C axis).

Linear actuators with timing belt drive have been used successfully for years and their long service life ensures reliability. A telescopic Z axis minimises the vertical space required for the pallet handling robot.

The optional C axis makes it possible to rotate about the vertical axis, thus allowing for reorientation of individual packages and boxes. This offers numerous advantages. For example, the surface of standard pallets can thus be optimally used with cartons or boxes of

different dimensions or loaded in combination.

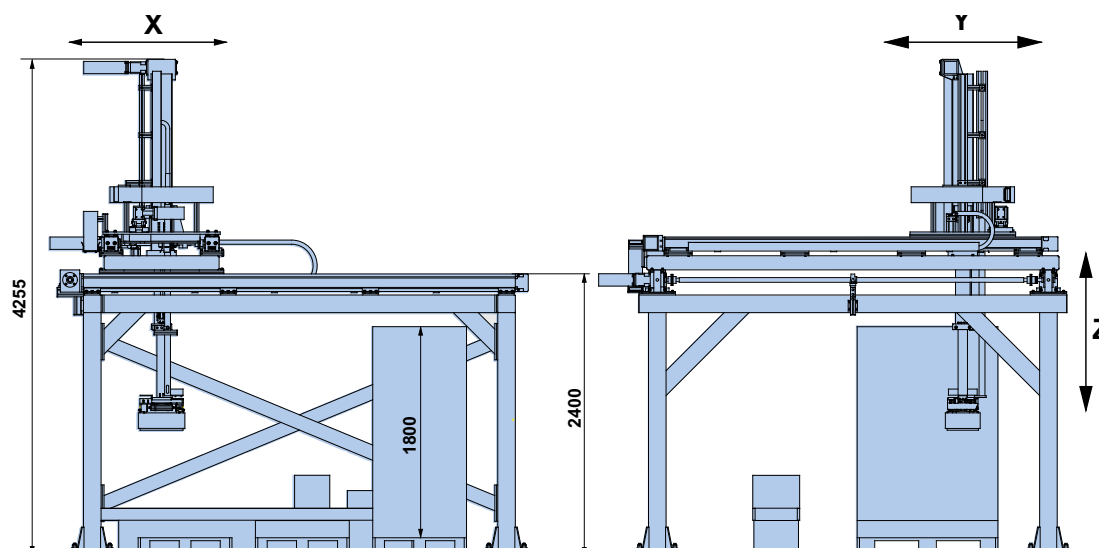
All drive elements of the pallet handling robots are suitable for operation in clean environments. This is particularly useful in Manufacturing enterprises in the pharmaceutical, food and luxury item industries. The gripper makes it possible to move loads weighing up to 50 kg. Digital servo drives with COMPAX servo control systems in all axes ensure high dynamic performance and precise positioning.



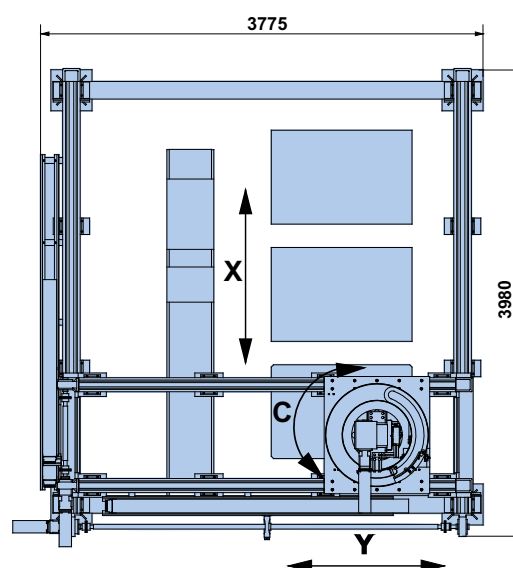
System layout / Technical data

Pallet handling robot PPR50

X-axis (horizontal)	Model: HLE 150	Traversing range over 2,3 or 4 pallets Speed: 2,5 m/s, Acceleration: 3 m/s ²
Y-axis (horizontal)	Model: HPLA120	Traversing range 2300 mm Speed: 2,5 m/s, Acceleration: 3 m/s ²
Z-axis (vertical)	Model: HTR80	Telescope unit with 3 parts, Traversing range 2000 mm Speed. 2.0 m/s, Acceleration: 5 m/s ²
C-axis (axis of rotation)	Model:HDM409	Rotary axis with servo drive. rotation angle 360°
Average cycle time	7 seconds /box	



Pallet handling robot with 3 stations.



Gripper versions

Palletizing robots

Essentially two different types of gripper are available:

- Suction grippers for cardboard boxes dimensioned:
 300 x 200 mm up to 10 kg
 400 x 300 mm up to 25 kg
 600 x 400 mm up to 50 kg
- Internal / external grippers, for example for C, R and RL-KLT boxes according to VDA4500 in dimensions of:
 400 x 300 mm up to 25 kg
 600 x 400 mm up to 50 kg

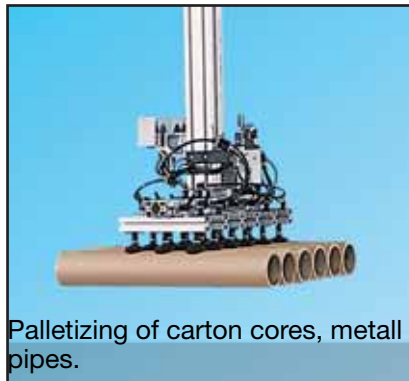
If necessary, grippers can be adjusted to specific customer needs by our experienced design engineers.



Multifunction gripper



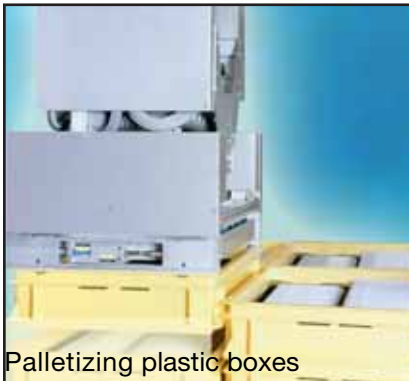
Palletizing of KLT-boxes



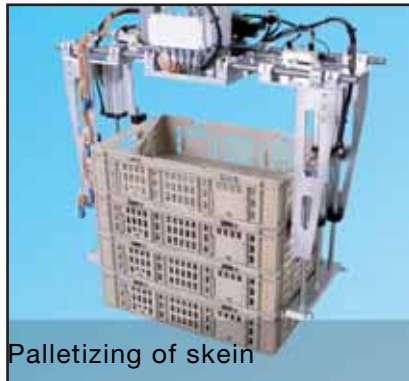
Palletizing of carton cores, metal pipes.



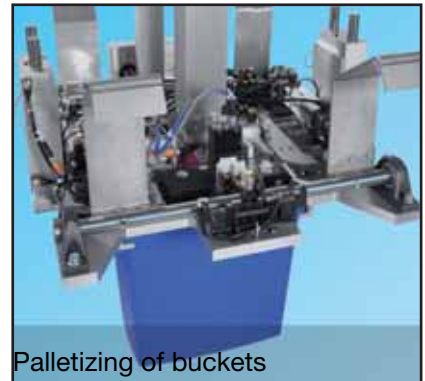
Palletizing of aluminium pallets.



Palletizing plastic boxes



Palletizing of skin



Palletizing of buckets



Combined outside suction gripper here carton boxes



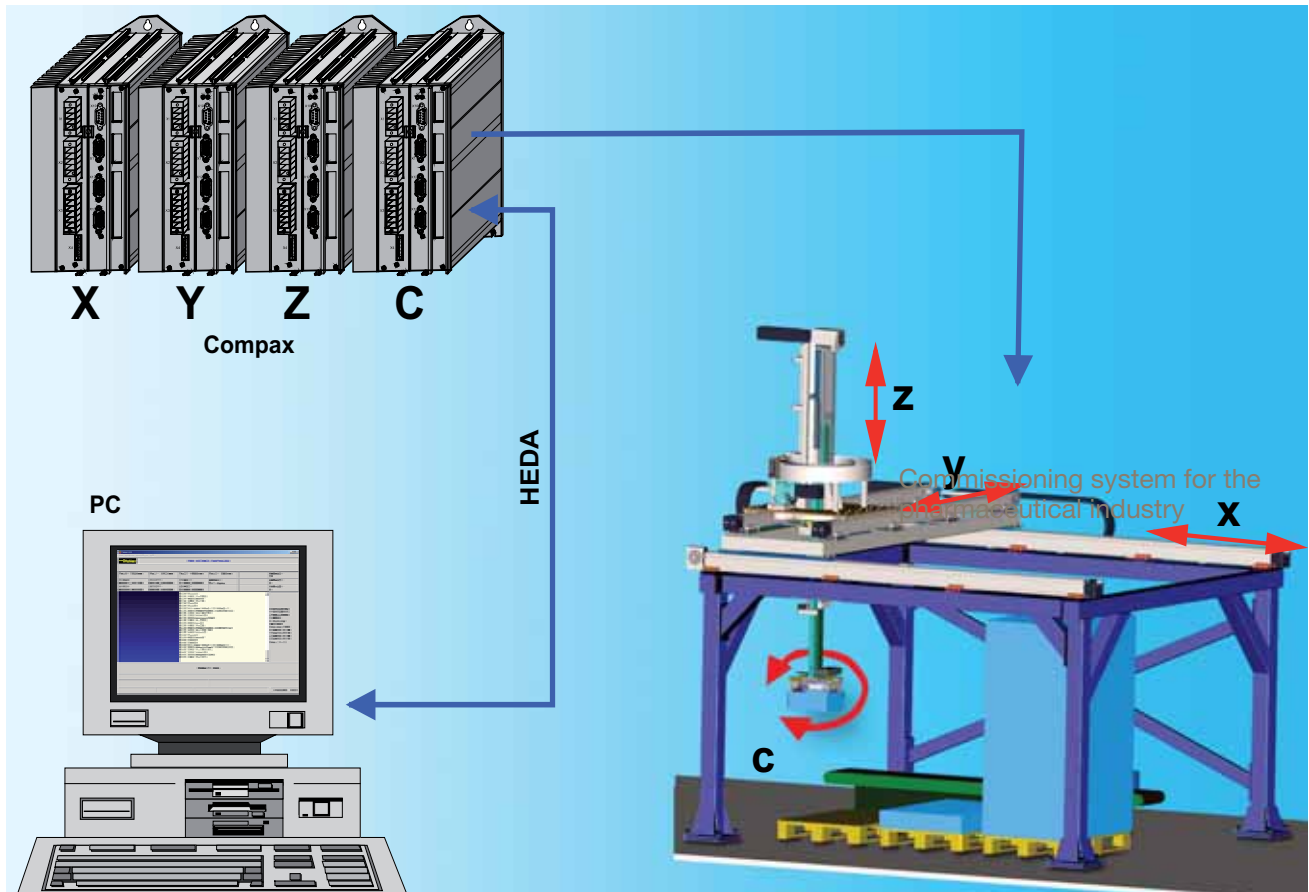
Variable suction gripper for different container



Variable suction gripper for different container

Control System /programming

Pallet handling robot PPR50



Block diagram of the control system



The heart of the pallet handling robot: Control cabinet with fully digital servo drives

The control system

A standard PC with a Windows operating system serves as the control and programming computer.

The basis for the control system concept are the fully digital COMPAX servo control systems with direct mains operation.

Data is transferred synchronously and serially via the HEDA bus (High Efficiency Data Access).

The PC controls the program sequence and communicates with the peripheral interfaces. Interpolated movements along a path make time - optimized movements possible.

Operation

A user-friendly interface has been developed under Windows. Various functions are available for the user in the individual operating modes:

Manual operation:

- Movement of all servo axes.
- Status display and entry of all digital inputs and outputs via an integrated diagnostics function.

Teach-In operation:

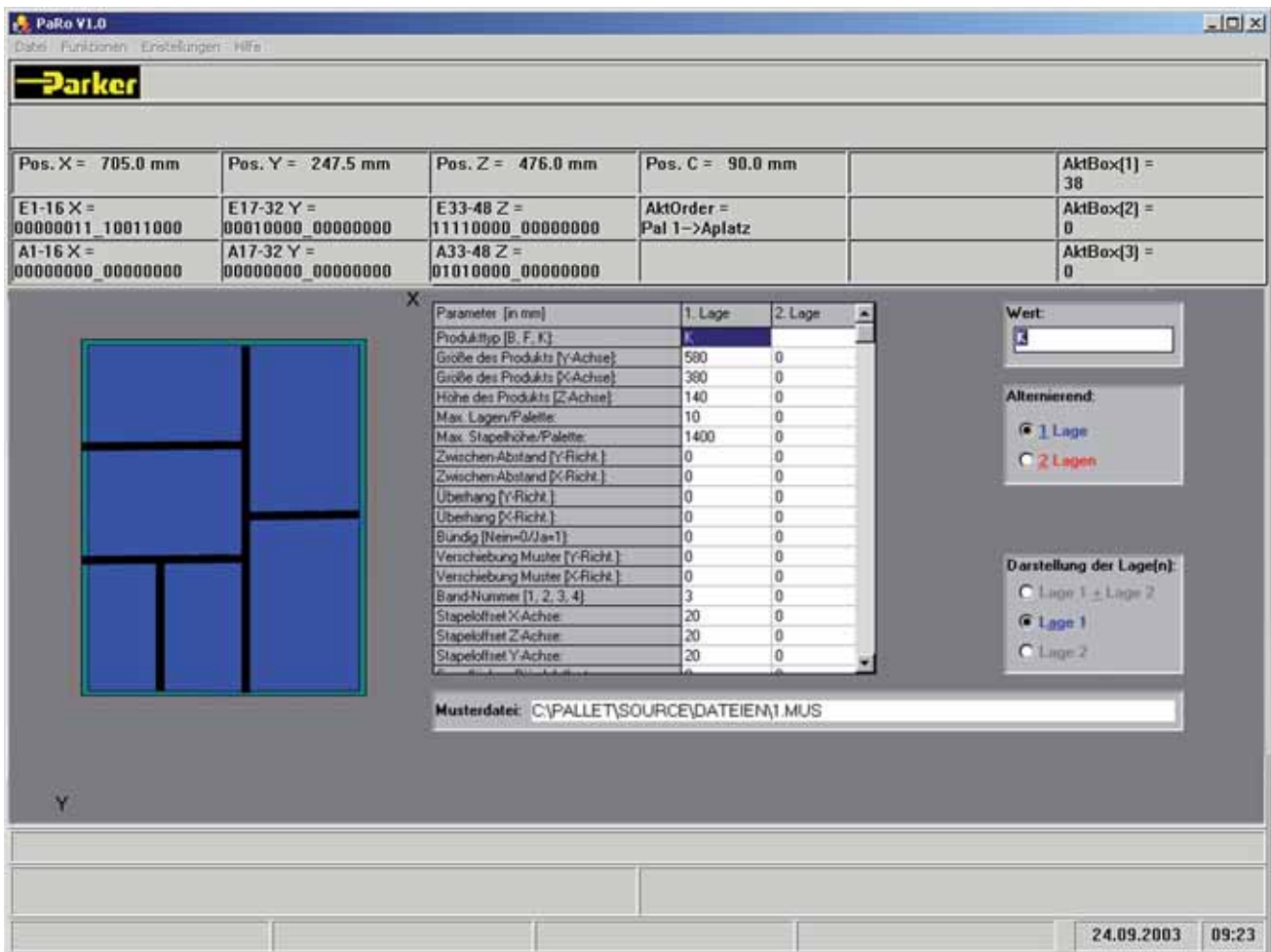
- Approaching and accepting prominent points.
- Coordinates are safely stored even if the power fails.

Automatic operation:

- Fully automatic pallet handling operation.
- System status (position of boxes, parameters and all other actual values) is safely stored even if the power fails.
- Clear text display of fault and error messages.

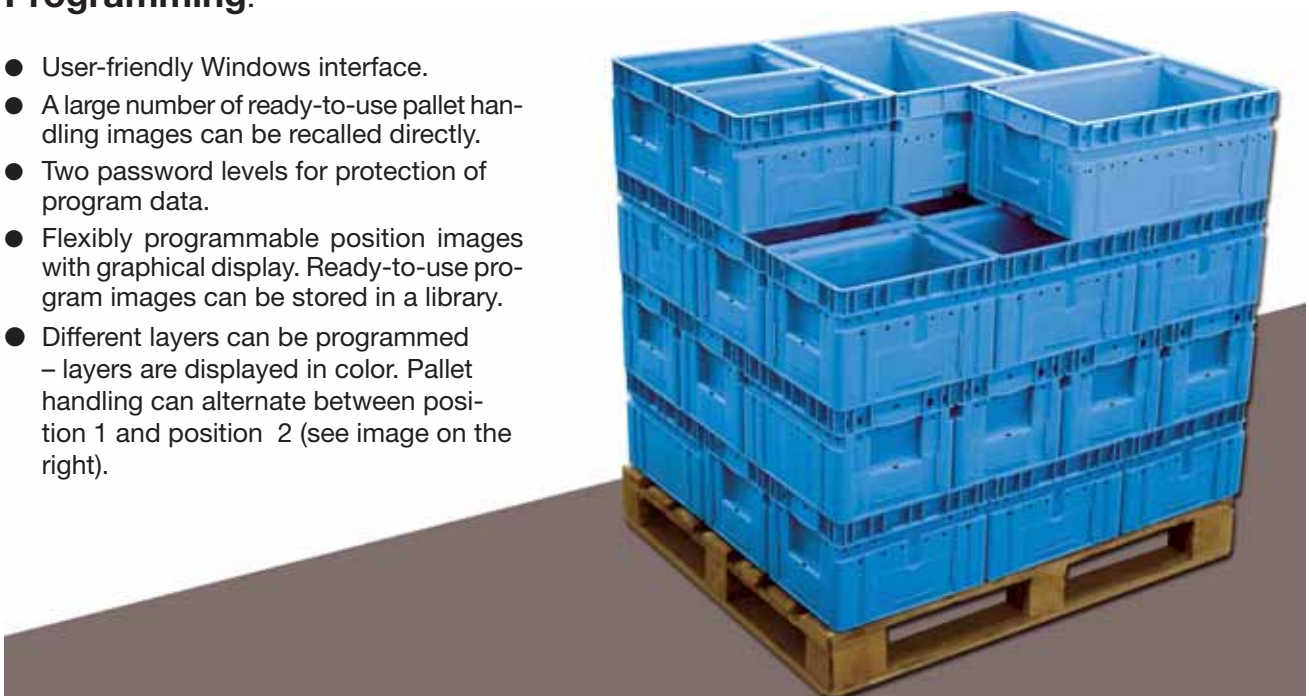
Control and Manage

Programming



Programming:

- User-friendly Windows interface.
- A large number of ready-to-use pallet handling images can be recalled directly.
- Two password levels for protection of program data.
- Flexibly programmable position images with graphical display. Ready-to-use program images can be stored in a library.
- Different layers can be programmed – layers are displayed in color. Pallet handling can alternate between position 1 and position 2 (see image on the right).



Application examples

Palletizing robot PPR50

These turn-key pallet handling robots can be used in the area of self-medication for placing finished products on pallets and so-called folding cartons.

Tablets in the form of bundles or shipping cartons are supplied to the systems via various conveyor belts. They are stacked one after the other onto two euro pallets. At the same time, the folding cartons are supplied by the upstream packaging machines in plastic boxes over a separate belt. The returning empty folding cartons are set down on another pallet waiting for that purpose. Driverless transport vehicles are used to supply and remove euro pallets.



X-axis	Model: HLE 150	Stroke: 4,6m	Speed 2,0 m/s	Acceleration: 3m/s ²
Y-axis	Model: HPLA120	Stroke: 1,9m	Speed 2,0 m/s	Acceleration: 3m/s ²
Z-axis	Model: HTR80	Stroke: 1,8m	Speed 1,5 m/s	Acceleration: 3m/s ²
C-axis	Model:HDM409			
Payload	12kg			
Precision	± 0,2 mm			

This pallet unloading system is used in the food industry for removing packages of butter from pallets. Two pallets in euro or industrial format with several layers of 25 kg cartons of different dimensions are supplied to the system per lifting vehicle. They are removed in alternation or one after the other and transferred to a rotation and turn-around station. Depending on the position of the carton, it is rotated by 90° and then tilted onto a conveyor belt. During the pallet unloading process, intermediate layers and pallets are moved onto slots reserved for them.



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Z-axis	Model: HTR80	Stroke: 1,8m	Speed 1,5 m/s	Acceleration: 3m/s ²
C-axis	Model:HDM409			
Payload	12kg			
Precision	± 0,2 mm			

Pallet Handling System for Commissioning of Bundles - Stacking in the Food Industry



Parker - Always One Step Ahead!

Full-Service for your Automation System

Parker can provide all the services you require - extensive consultation, individual project planning, design, manufacturing and commissioning. Our service is fast when you need it. We won't let you down. Experienced engineers are always on hand to help, giving you the secure feeling that you

have made the correct investment decision. This partnership in the „Automation“ field has proved itself across the world. We are part of a large family and benefit from the strength of a successful corporation. Our clients profit directly from the intensive knowledge transfer within the corporation. In order to

be able to keep in-touch with the globalization trends, it is important to have both a world-wide presence and be competent locally.



Project planning



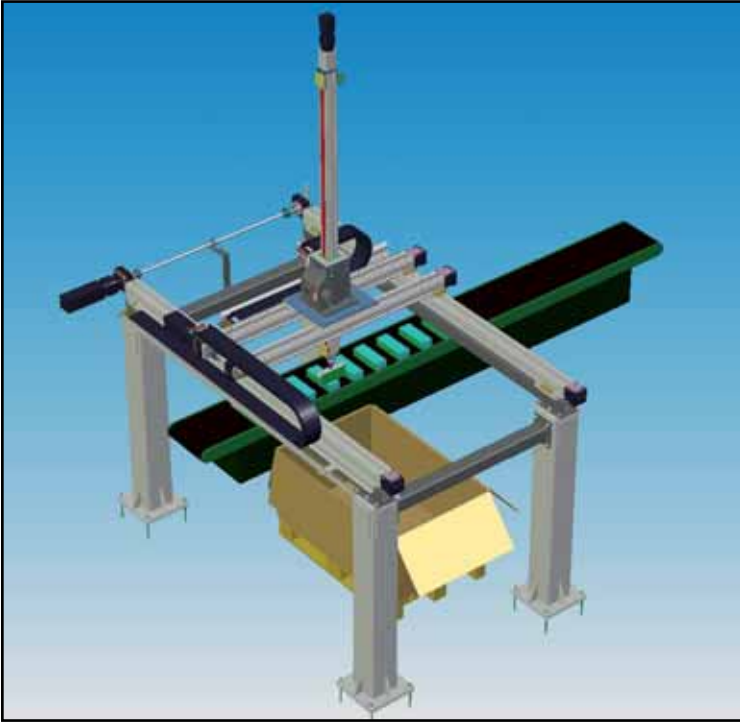
Project planning:
Experienced experts are with you all the way. Extensive consulting and individual project planning – providing you the security you need

ENGINEERING YOUR SUCCESS.



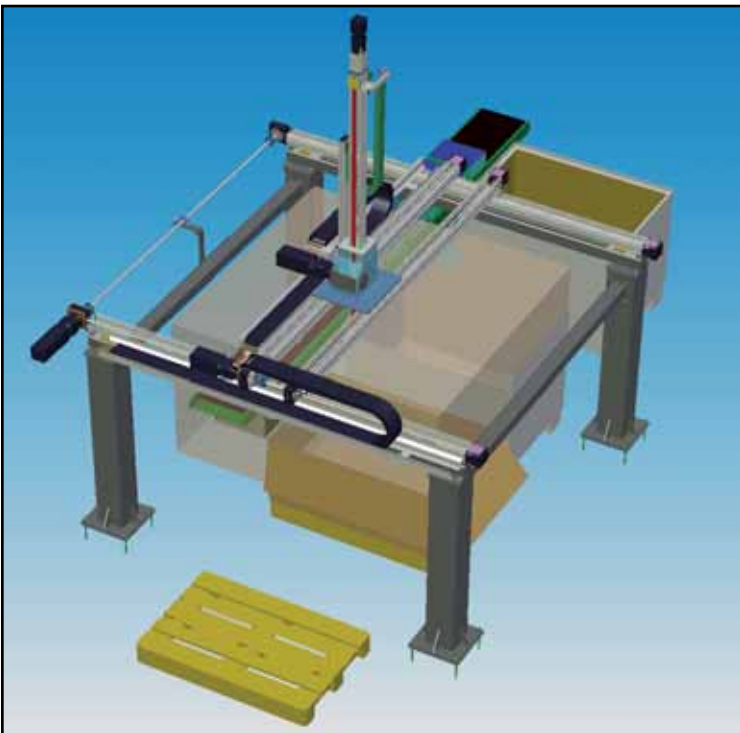
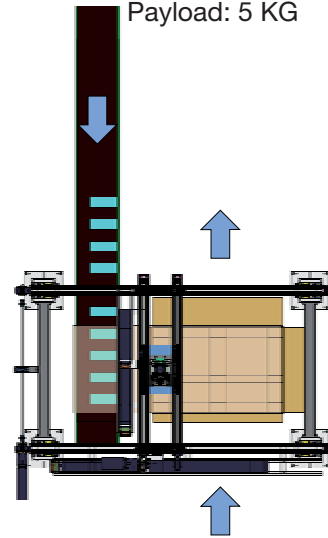
Design:
Our engineers' know-ledge and modern development tools make it possible to develop individual and mature system solutions.

Design



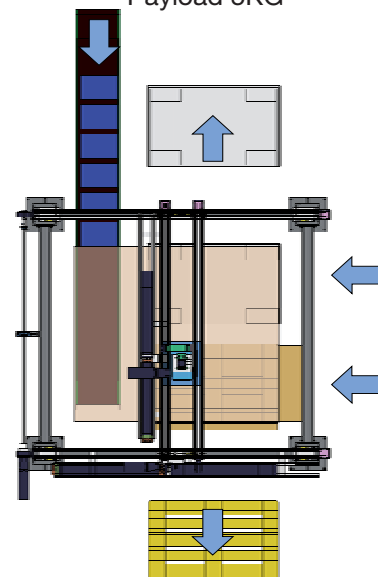
Single site palletizer:

Actuation room x-y-z:
 1900/800/1200 mm
 Height: ca. 4000 mm
 Space required: 2900x1800 mm
 Suction gripper
 Option: integrated Rotary axis I
 Payload: 5 KG



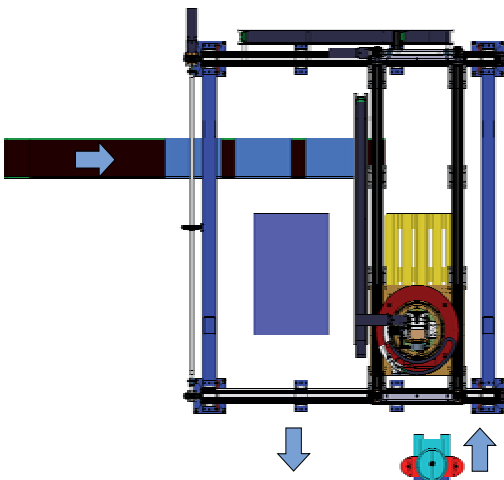
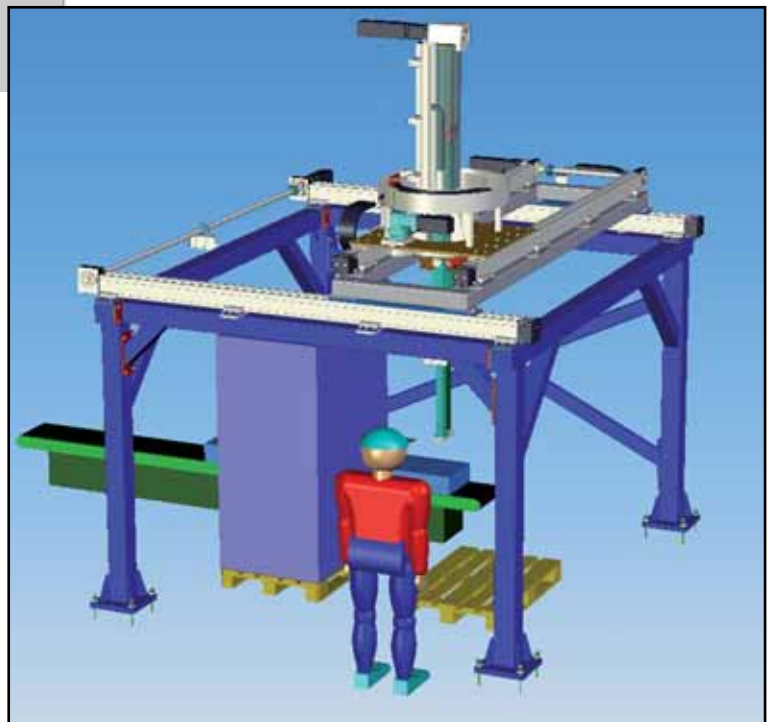
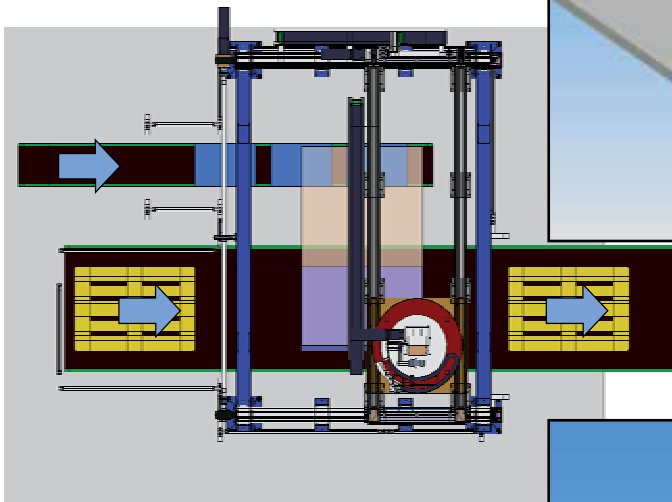
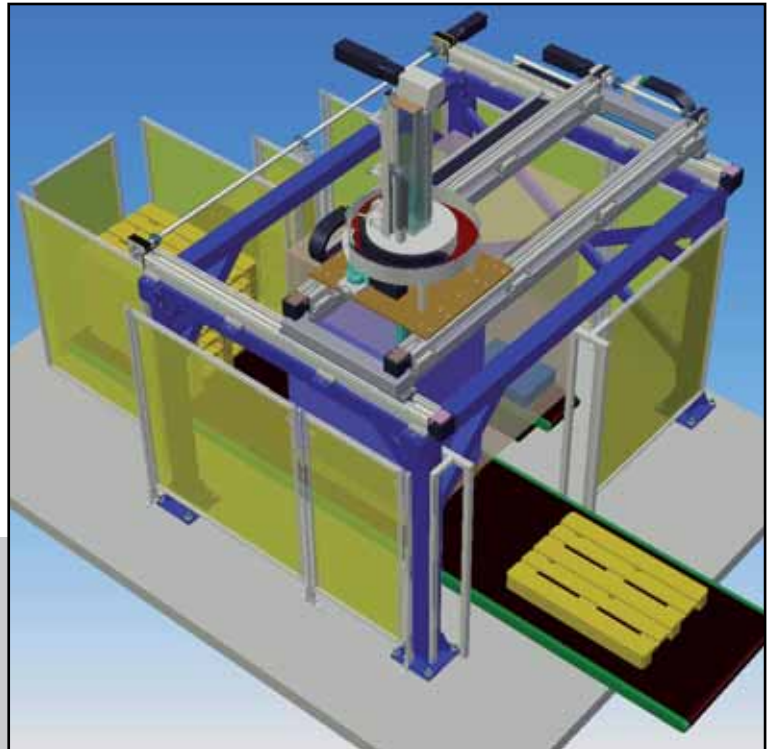
Double site palletizer:

Actuation room x-y-z:
 1900/1800/900 mm
 Height: ca. 4000 mm
 Space required: 2900x2800 mm
 Suction gripper
 Option: integrated Rotary axis I
 Payload 5KG



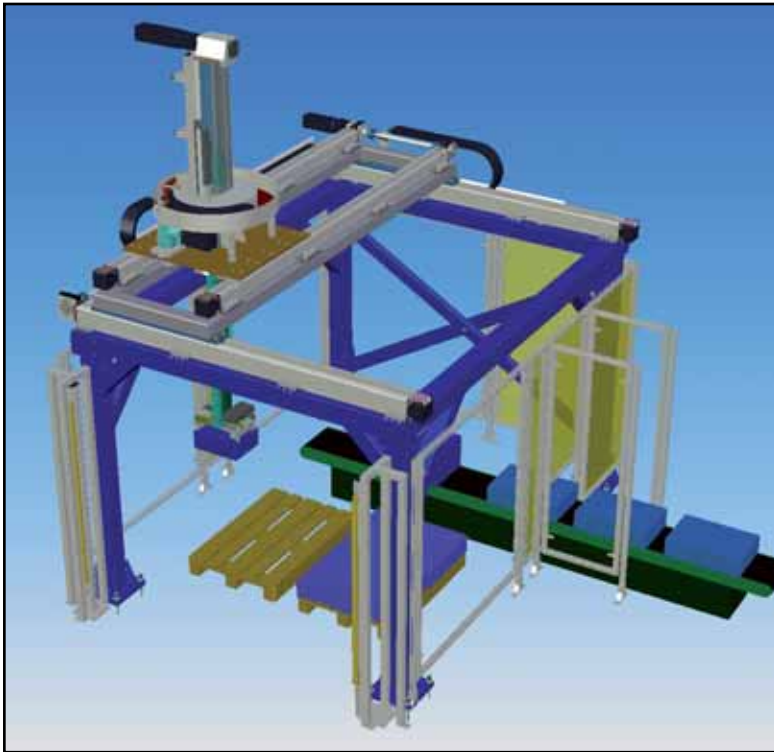
Single site palletizer:

Actuation room x-y-z:
1900/1800/900 mm
Height: ca. 4400 mm
Space required: 3700x2800 mm
Standard suction gripper
z-axis: Telescope version with integrated rotary module
Pallet dispenser
Safety fence
Payload: 50 KG



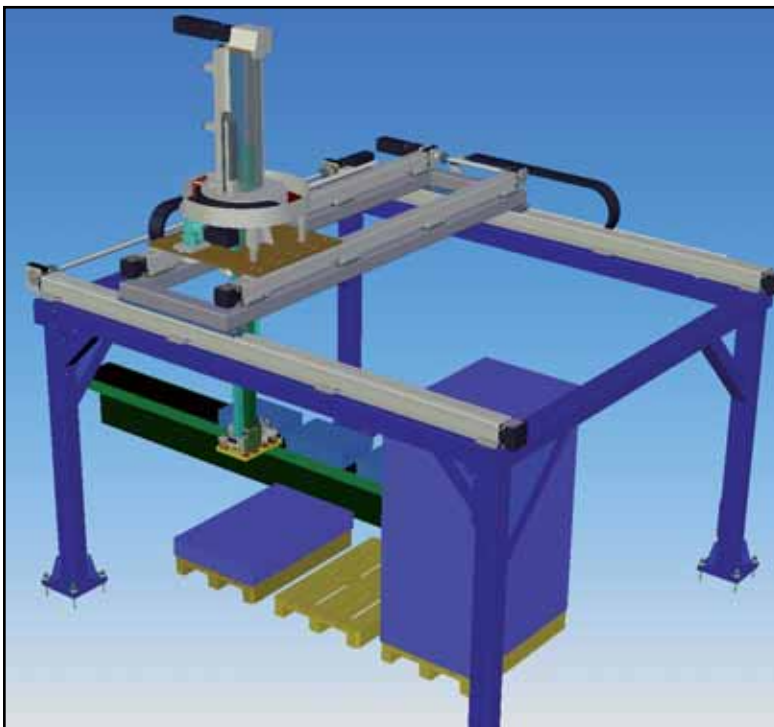
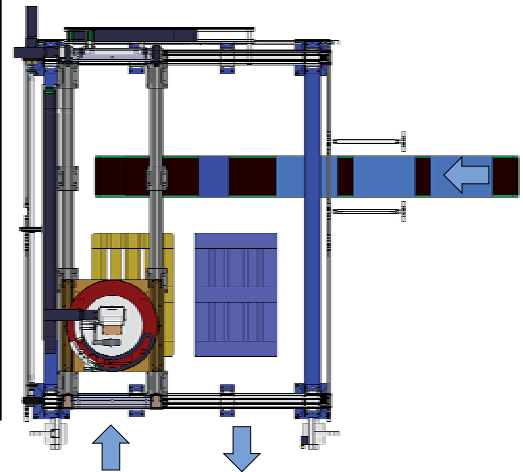
Double site palletizer:

Actuation room x-y-z: 1800/1900/2000 mm
Height: ca. 4400 mm
Space required: 3700x3500 mm
z-axis: Telescope version with integrated rotary module
Payload: 50 KG



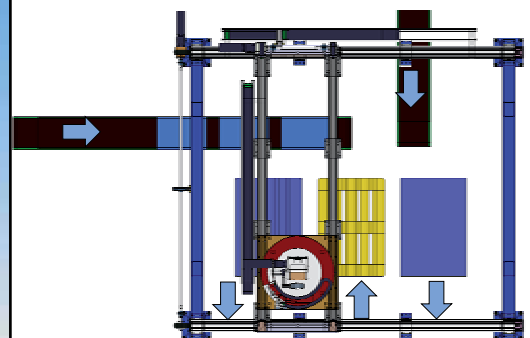
Double site palletizer:

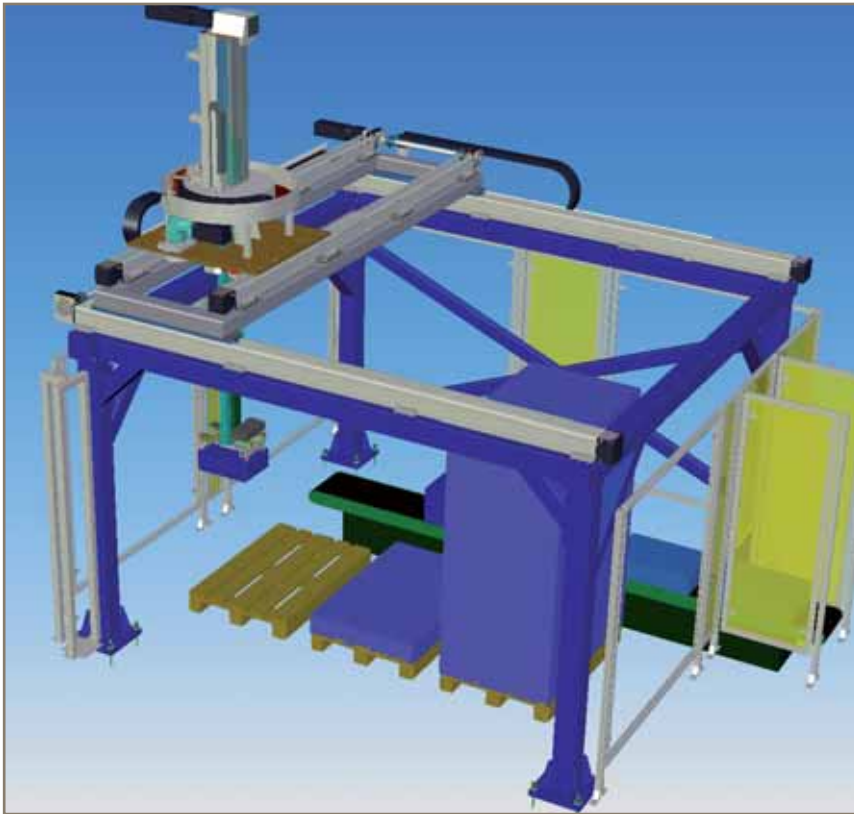
Actuation room x-y-z: 1800/1900/2000mm
 Height: ca. 4400 mm
 Space required: approx 3700x3500 mm
 z-Axis: Telescope version with integrated rotary module
 Standard KLT-Gripper
 Safety fence
 Payload: 50 KG



3 site palletizer

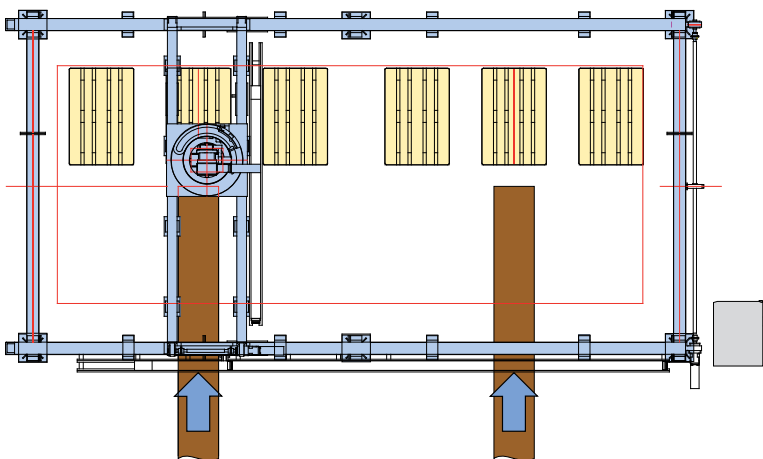
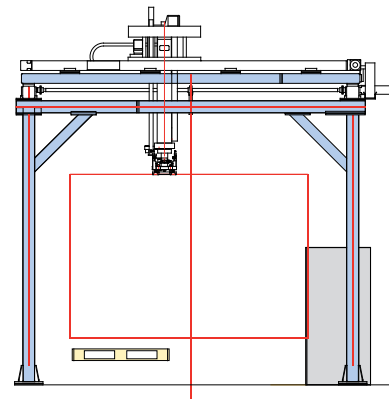
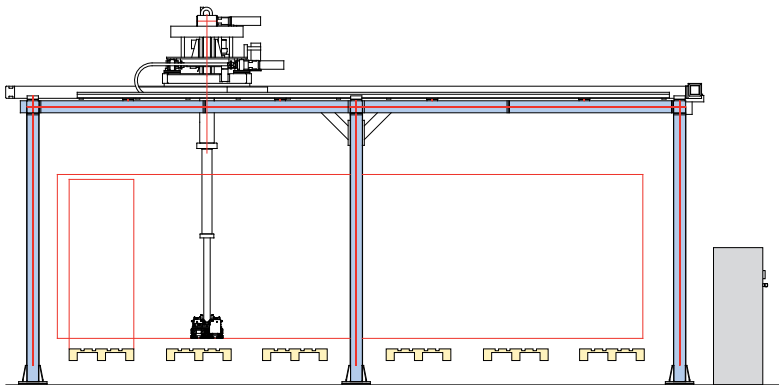
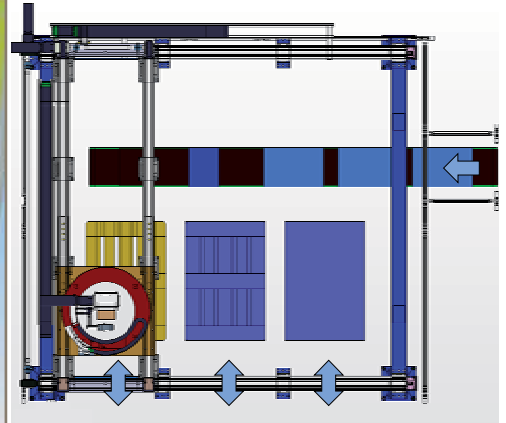
Actuation room x-y-z: 2600/1900/1800mm
 Height: approx. 4400 mm
 Space required: 4300x3700 mm
 z-Axis: Telescope version with integrated rotary module
 Standard Suction gripper
 2 pickup position
 Payload: 50 KG





3- site palletizer:

Actuation room x-y-z:
 2600/1900/1800 mm
 Height: ca. 4400 mm
 Space required: 4000x3800 mm
 z-axis: Telescope version with integrated rotary module
 Standard suction gripper
 1 pickup position
 Payload: 50 KG



6- site palletizer:

Actuation room x-y-z:
 7300/3000/2000 mm
 Height: ca. 4700 mm
 Space required: 8700x4400 mm
 z-axis: Telescope version with integrated rotary module
 Standard suction gripper
 2 picking position
 Payload: 50 kg



PARKER Hannifin EME
in Offenburg

Production

Production:
"Made in Germany" – well trained specialists manufacture highly-developed, durable, high-tech products.



Commissioning:
Our fully trained, qualified staff will install and commission your system.

Commissioning

Service



Local service:
Quick, competent and reliable - whenever you need us. At Parker, service is not just a sales agreement.

We develop solutions –

Why not get in touch with us!

Your contacts

You can take advantage of our experience and the know-how of our specialists. Profit from the benefits of our innovative technology to obtain a cost-effective and user-oriented solution. Wherever tailor-made and custom-built automation services are required, you will find that our expertise makes us the right people to talk to.

HAUSER Sales - Handlingsystems

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Fax: +49 (0)781 / 509-98456

e-mail: sales.automation@parker.com

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Or simply give us a call and arrange an appointment

