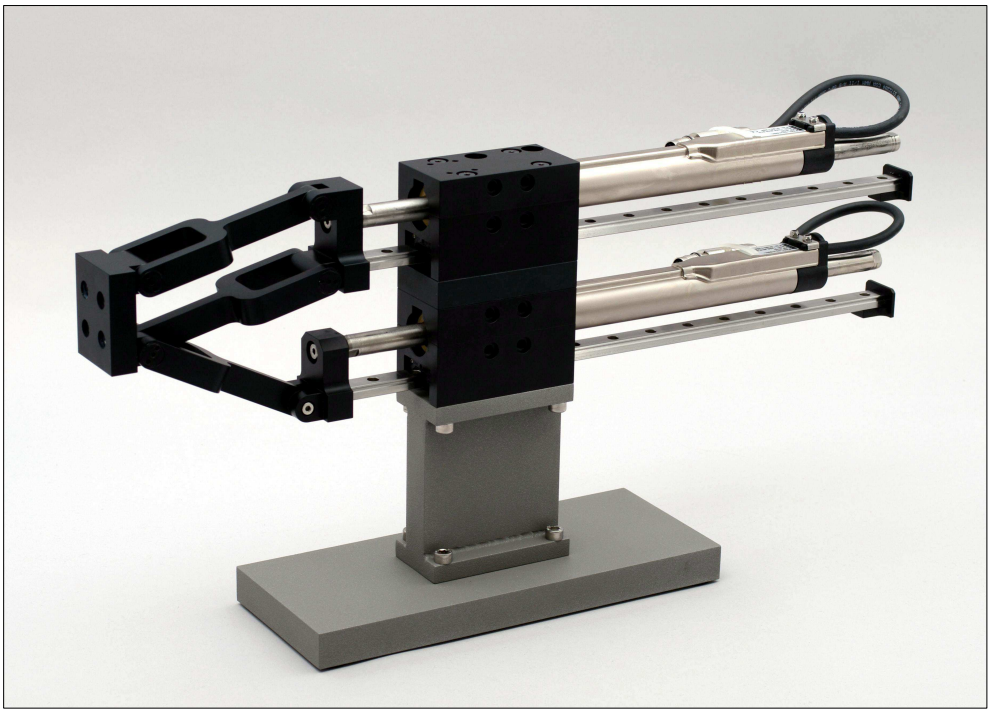
JUNG ANTRIEBSTECHNIK U. AUTOMATION GMBH

ParaPicker® Pick&Place



Applications

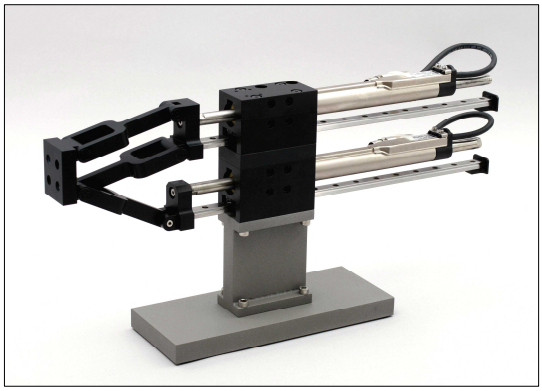
- Palletizing
- Packaging
- Grouping
- Sorting
- Gluing
- Mounting
- Controlling
- Feeding
- Processing

- **Pick&Place with parallel kinematics**
- **highest dynamics by the use of linear direct drives**
- **for super-dynamic positioning tasks**
- **freely positionable along the entire work area**
- **suitable for rough environments as well**
- **no moving motor cables**

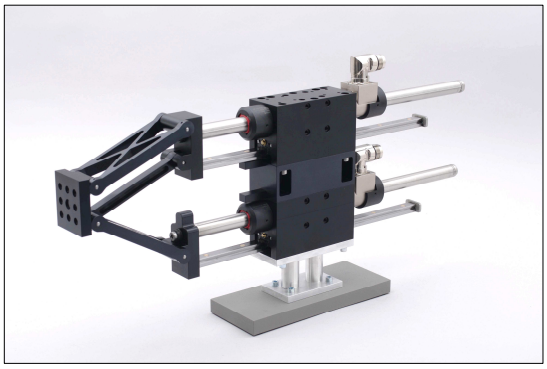
Linear motor technology!

ParaPicker® Pick&Place Overview

ParaPicker® PP02 Pick&Place are two-axes, parallel kinematic handling devices with two arms.
The name *ParaPicker*® stands for the parallel design of the actuators and for the typical tasks of these devices.
Linear modules with integrated direct drives are being used as actuators. Through the application of standard linear drives and guide components, an extremely cost-effective package is provided.
Therefore *ParaPicker*® Pick&Place systems are characterized by their high dynamics and flexibility, with overall low expenses. As a matter of principle, *ParaPicker*® Pick&Place do not have moving motor cables or cable chains.



ParaPicker® PP02-23x160/180

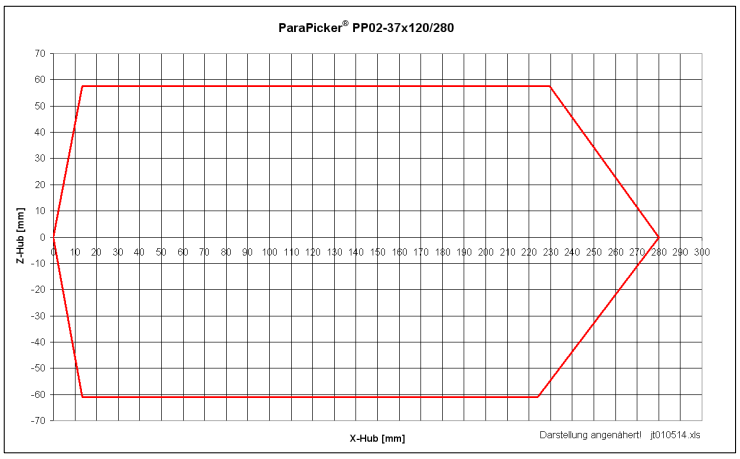


ParaPicker® PP02-37x120/280-PA
linear motors shown with optional wipers for rough environments

ParaPicker® PP02 is manufactured in two sizes.
Type PP02-23x160 is designed for small payloads and very high cycles.
The bigger type PP02-37x120 is also characterized by high cycles, but is designed for bigger payloads or tooling tasks. All hinges of the parallel kinematics are sealed.

PP02-37x120 can be equipped with various options. With the optional wipers, *ParaPicker*® PP02-37x120 is also suitable in rough environments.

Compared to classic serial X-Z kinematics, which have a rectangular work area, *ParaPicker*® PP02 has a work area, which is defined by geometric circumstances of the parallel kinematics.
To the right a graph with a typical *ParaPicker*® PP02 work area is shown schematically.



Typical work area of ParaPicker® PP02

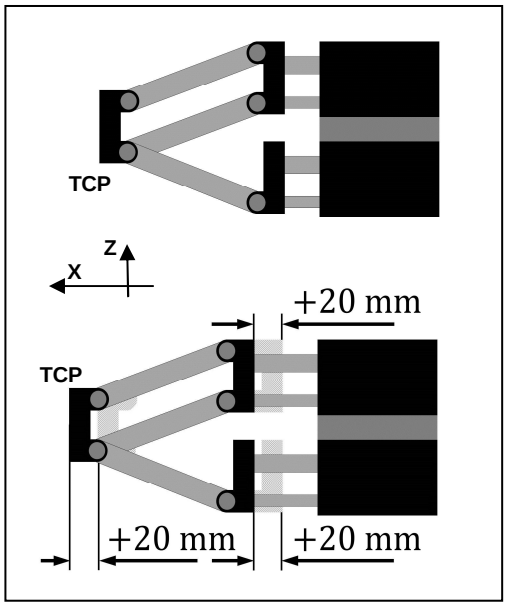
***ParaPicker*® Pick&Place** datas overview	max. X-stroke [mm]	max. Z-stroke [mm]	peak force in Z-direction [N]	peak force in X-direction [N]	typical X-Z speed [m/s]	typical X-Z acceleration [m/s²]	typical payload mass [kg]
PP02-23x160/180	180	110	137	274	3,0	100	0,25
PP02-37x120/280	280	120	255	510	3,0	100	1,0

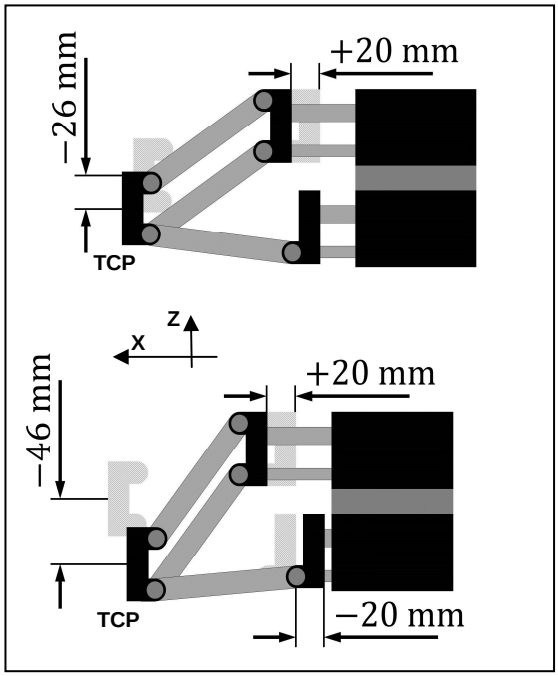
Options on demand.
Technical changes reserved!

ParaPicker® Pick&Place Motion Control

Compared to classic serial kinematics, *ParaPicker*® Pick&Place offer substantial advantages. The low moving masses and the forgoing of moving motor cables are noteworthy characteristics.

One should keep in mind that there are some things to consider with motion controls in parallel kinematics. For a motion of the TCP (tool center point) in the X direction, both actuators need to move at an identical stroke simultaneously. The dynamics of the TCP motion, in this case, is solely determined by the dynamics of both actuators.





For the motion of the TCP in the Z direction, there are generally two cases to consider.
If only one actuator is in motion, this will result in a larger motion of the TCP in the Z direction. The motion of the motor will be transformed into higher speed by the geometry of the parallel kinematics.
Are both actuators moving simultaneously and opposite each other, it will also result in a motion in the Z direction. This will double the dynamics. Here the *ParaPicker*® principle can fully show its advantages over classic serial kinematics.

A wide range of suitable positioning controllers are available for *ParaPicker*® PP02. These include the inverter, the motion controls and the interface to high level machine controls.
The availability of all current fieldbus interfaces and parallel I/O's enable the connection to high level machine controls.
For simple motion tasks, it is entirely possible to solve an application with simple, synchronous 2-axis point-to-point motions.
For applications with more complex motion profiles the trajectory must be pre-calculated by a high level control and prestored into X-Z motion points. After this the motion points mus0t be sent to both positioning controllers via the interfaces in a fixed time stamp in the so-called streaming mode. In this case each positioning controller applies the fine interpolation of the full trajectory.

ParaPicker® PP02 positioning controllers

RS 232 · PROFIBUS · DeviceNet · CANopen · EtherCAT · RS 485 · PROFINET · EtherNet/IP · ETHERNET POWERLINK · SERCOS interface

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JA²

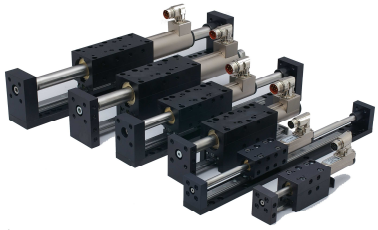
We are one of Germany's leading suppliers of linear direct drive technologies!

Available options
***ParaPicker*® Pick&Place**

Various options round off the *ParaPicker*® Pick&Place program, which makes the product range usable with demanding applications.

- wipers for rough environments
- forced cooling
- weight-force compensation with *MagSpring*®
- pneumatic brakes
- high-resolution sensors

Linear motor systems from a single source!



Linear motor actuators

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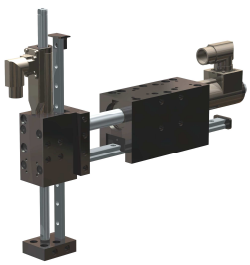
distributed by:

Technical changes reserved!
Revision: 16.11.2017 / ss061017

Positioning controllers

Robotic solutions

Mechatroncs solutions



Classic Pick&Place

Linear motor systems from a single source