

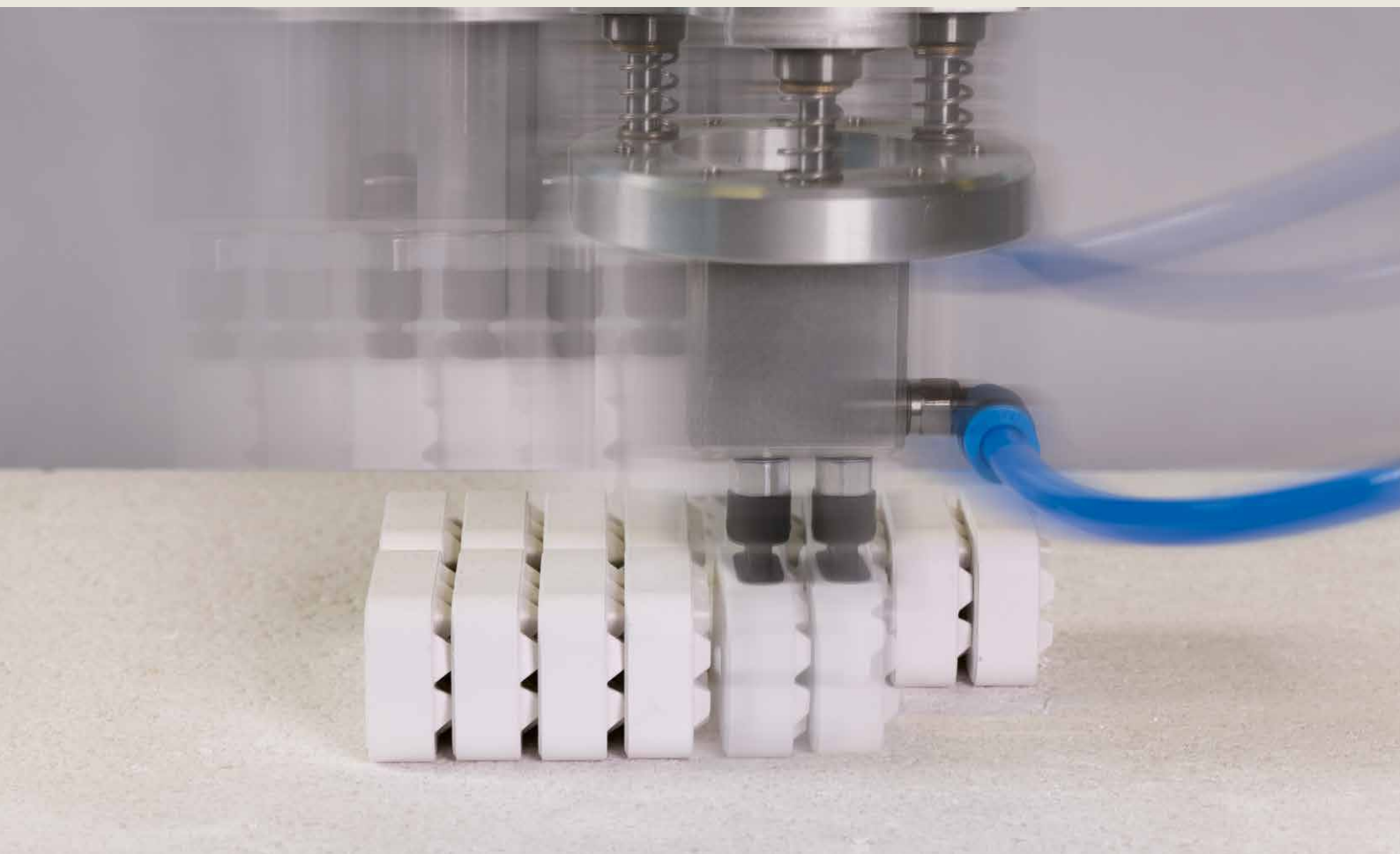


ZPAL

PALLETIZER DEPALLETIZER

- ◆ MODULAR SYSTEM
- ◆ SCARA ROBOT
- ◆ QUICK CHANGE END EFFECTORS
- ◆ COLLISION PROTECTION
- ◆ SOFTWARE-OPTIMIZED SETTING PATTERNS
- ◆ SEPARATE CARRIER AXES

PARTS HANDLING REIMAGINED



PALLETIZER

The core of the system is the palletizing unit. It contains the robot, the carrier axes for transporting the carrier trays, the control panel and the operating unit.

The system can also be used as a camera-supported depalletizer for automating processing sequences.

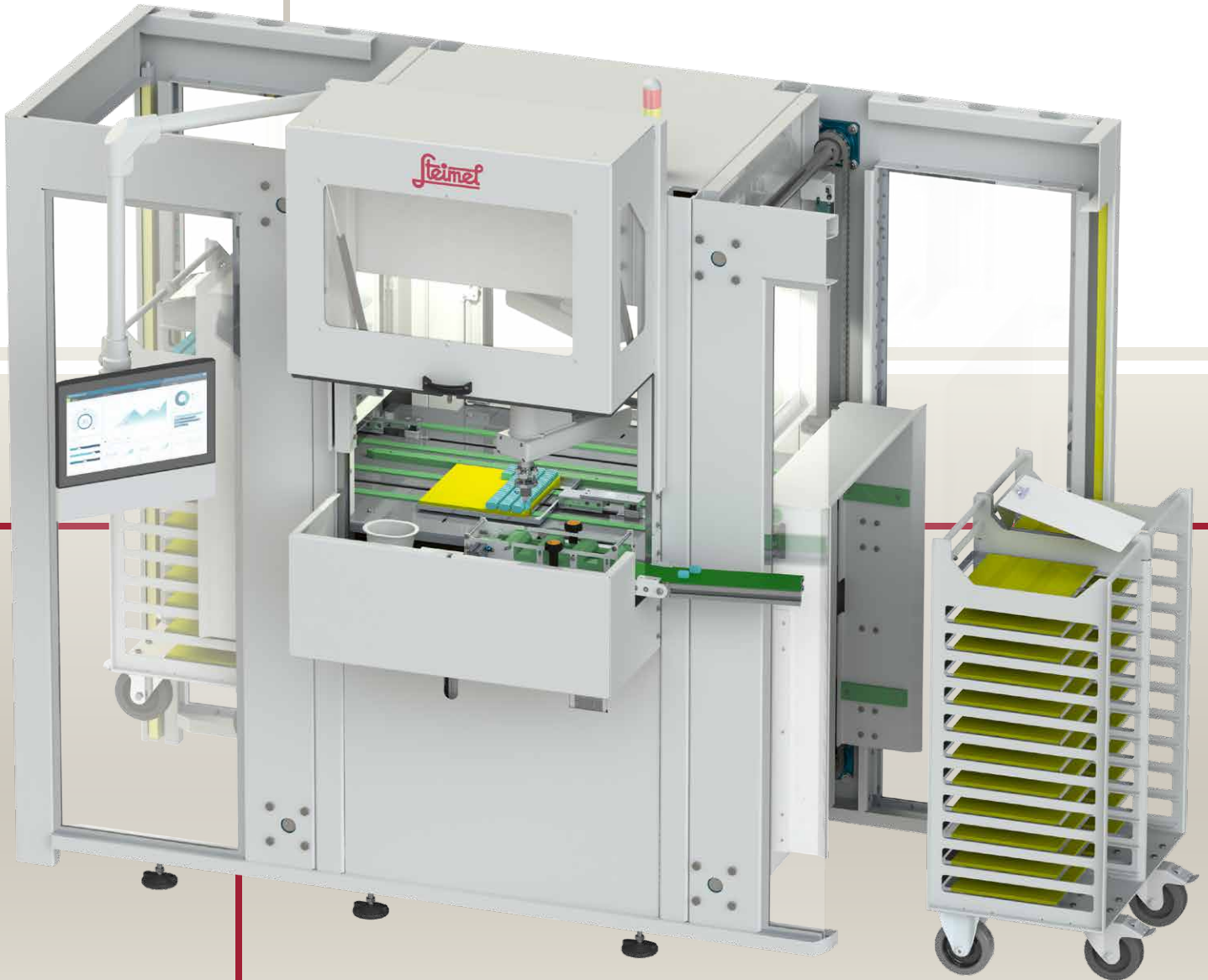


Illustration with optional equipment.

FLEXIBILITY

The system's high flexibility and ability to maintain consistent maximum throughput means that it can be adapted to a variety of technical process requirements. The wide range of available options allows the optimal implementation of customer-specific requirements.

The system can be used in a wide variety of applications. Product changes and bottlenecks can be handled at very short notice by simply reconfiguring the ZPAL system.

MATERIAL INFEED

The parts can be fed into the palletizer using typical transport systems, such as conveyor belts. The infeed can take place at several positions. The robot takes the parts individually or in packages and sorts them into the provided carrier trays in predetermined placement patterns.

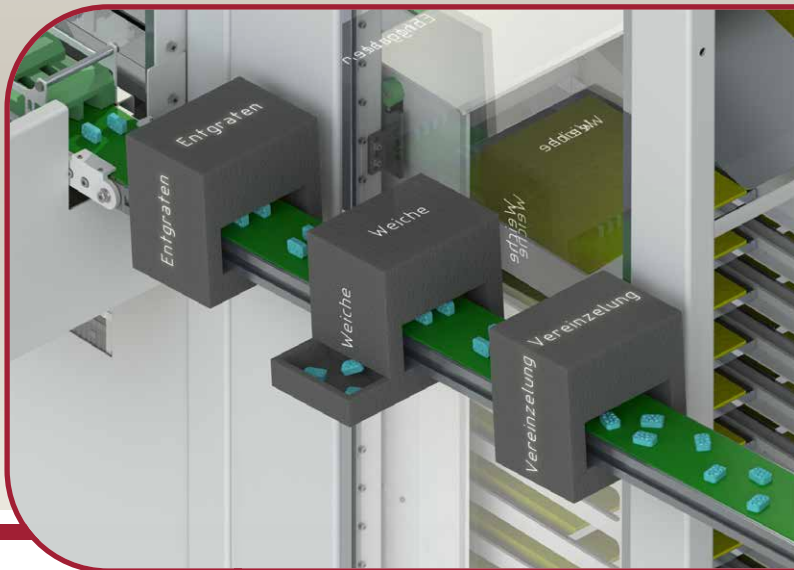
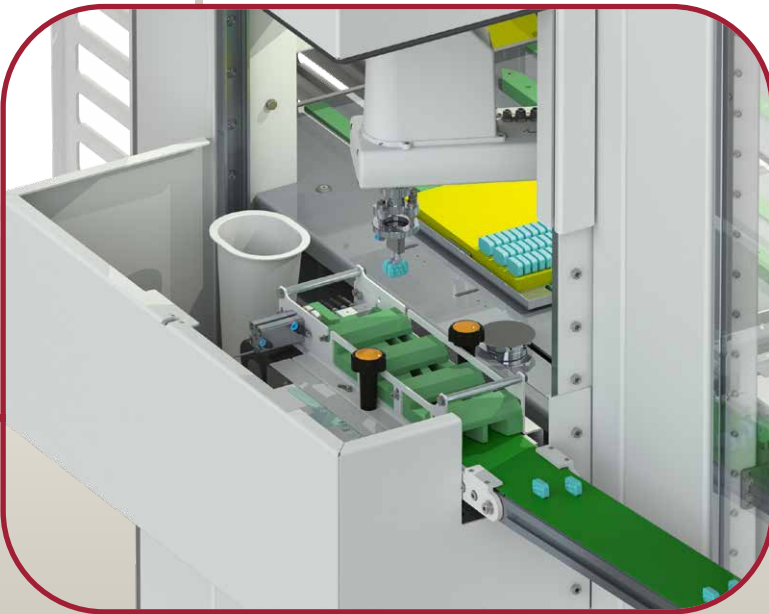
FAULTY PARTS IDENTIFICATION OPTION

Faulty parts can be identified in the material receiving area via optional systems for parts measurement, a weighing device or optical parts recognition systems.

Separate sorting and delivery of these parts ensures reliable palletizing of the good parts and serves for QA-compliant parts transfer to subsequent processing stations. A real-time notification to the upstream production process about the fault is a possible option.

BATCH REPORT

Batch data (history record) are recorded and can be transferred to production control systems.



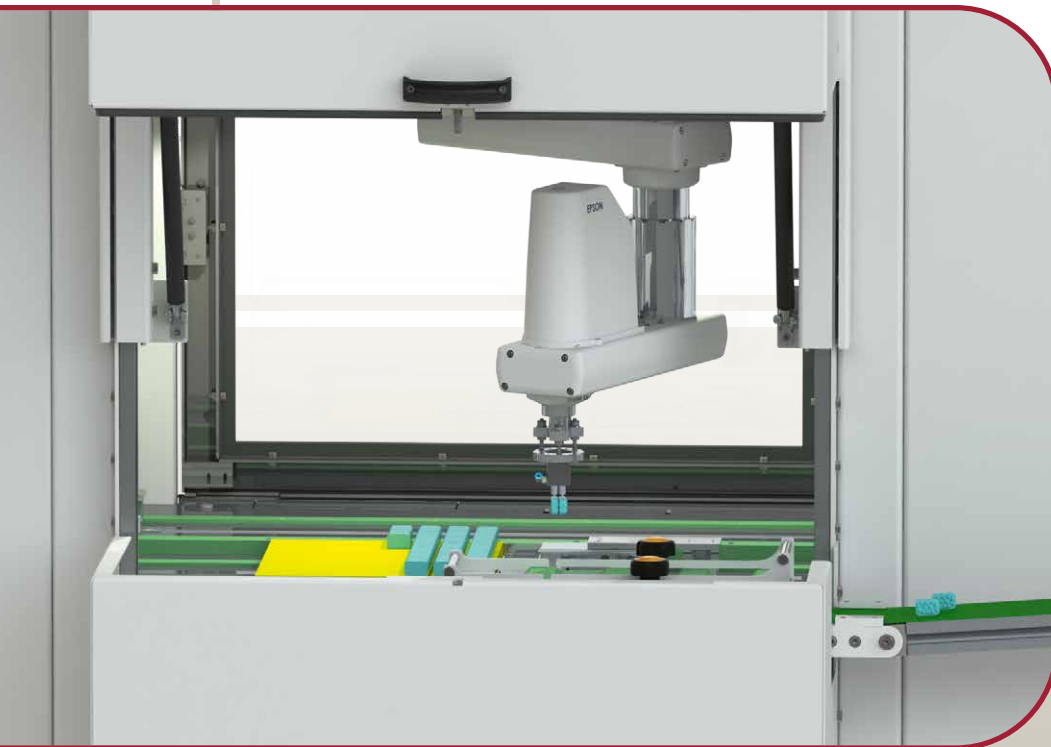
INFEED OPTIONS

Pre-treatment process steps in the infeed (e.g., deburring of the parts), sorting stations (e.g., a sorting switch) and part-specific solutions for separating and pre-positioning the parts are all possible here.

SCARA ROBOT

The palletizing process is carried out by a SCARA robot. The small robot, which is very light and flexible, is ideally suited for this task. Because the robot is mounted overhead, it operates without dead zones and the entire range of motion is available for parts placement.

Fast and precise movement sequences with maximum repeat accuracy ensure the desired result in the ZPAL palletizer.



END EFFECTORS

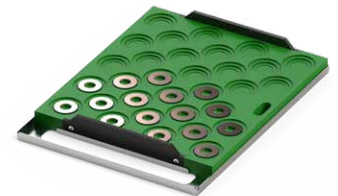
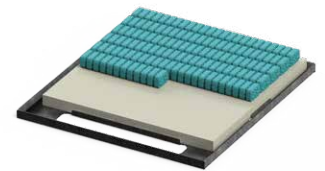
The SCARA robot has a quick-change system and can be equipped with different end effectors. Available end effectors for part-specific handling include clamps, magnetic end effectors and vacuum end effectors.

TRAY CART

The pallet carrier (tray cart) takes the carrier trays already filled with parts and stores empty parts carrier trays for the palletizer.

The pallet carrier is tailored to the respective parts carrier tray. For example, the compartment heights are determined by the heights of the parts carrier trays and the parts. Pallet carriers for two parallel stacks of part carrier trays or for one stack of large part carrier trays are possible.

The use of tray carts allows quick changes at the palletizer and the further transport of the filled carrier trays filled with parts to the following processing stations.



CHOICE OF PARTS CARRIER TRAYS

Within the range format of industry-typical parts carrier trays, we offer solutions for all conceivable part formats for use in the palletizer and the tray cart.

LIFTING STATION

The pallet carrier (tray cart) is located in the lifting station. This picks up the filled parts carrier trays and stores empty parts carrier trays for the palletizer.

The ZPAL palletizer can be equipped with one or two lifting stations as required. At least one lifting station must always be available to ensure the uninterrupted operation of the palletizer.

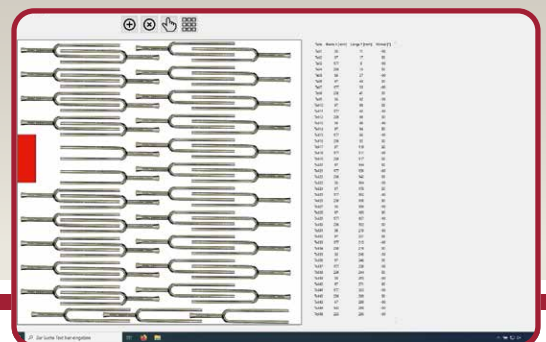
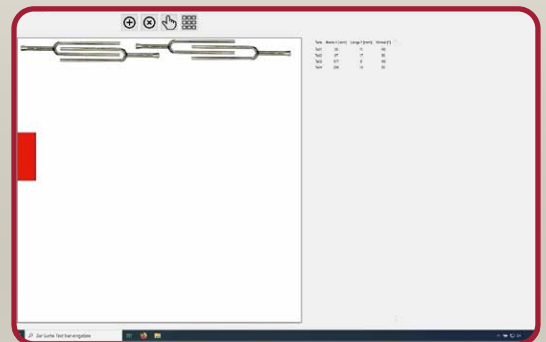
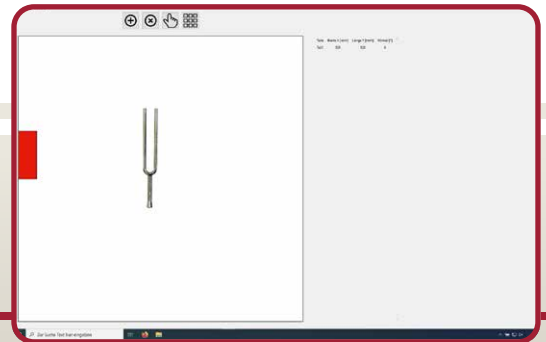
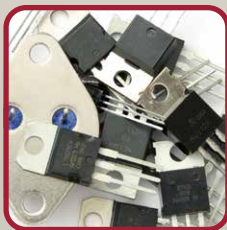


TYPICAL APPLICATIONS

All kinds of small parts can be palletized or de-palletized.

Some examples for inspiration:

- Ceramic mouldings**
- Sintered mouldings**
- Injection moulded parts**
- Components made of carbon**
- Magnetically soft components**
- Plastic parts**
- Electronic components**
- Parts made of glass**
- Foodstuffs**



SOFTWARE-OPTIMIZED SETTING PATTERNS

The ZPAL software enables the part to be placed to be arranged on the carrier tray from drawings, graphics, or photos using drag and drop and assigns the end effector point. Any part geometry is optimally placed on the carrier surface to save space. The robot controller automatically receives the end effector coordinates from the ZPAL software.



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