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| * **At a Glance** * Reliable de-stacking of various types of containers such as small load carriers, EPPs, and cardboard with a gripper * A lid removal module for pallet lid can be added * Cycle time < 8 seconds for small load carriers * Cycle time < 10 seconds for EPP and cardboard containers * Weights of up to 25 kg per container can be handled |

**Depalletizing and Palletizing with the Polyplan Multi-Functional Gripper for Various Types of Containers and Lids**

**The multi-functional Polyplan gripper featuring servo-vacuum technology is the latest development and expansion of the product portfolio of the company's robot-controlled depalletizing and palletizing systems. It features a modular design—based on the basic small load carrier function, the gripping system achieves the universal versatility of a multi-tool due to its function modules for EPP, cardboard and lid removal. When gripping small load carriers, the multi-functional gripper uses its servo-motor lifting mechanism, which moves automatically depending on the type of container and orientation, and adjusts to the position of the gripping holes in the matching small load carriers. In this case, two robot-controlled servo motors drive the linear displacement units of the gripper whilst the gripper axes are advanced in the linear direction by spindle drives. The movement and gripping movement is monitored by inductive initiators which detect the correct gripping of the small load carrier just as reliably as the gripping from above of a small load carrier, a collision, or the end stop of the spindle drives.**

The new functionality of gripping EPP containers, cartons, and pallet lids is achieved by the multi-function Polyplan gripper using vacuum suction cups. For this purpose, the two servo-motor-powered gripping modules each feature a strip with suction cups. When picking up an EPP container, for example, this means that the container is gripped on two sides by vacuum. If the gripping requires a gap to a container stacked next to it, it is first approached on the open side, then tilted by a few degrees and pulled forward a few millimeters, so that the multi-functional gripper can now also grip the opposite side of the container. Excess travel sensors and the pneumatic damping of the gripper movements ensure reliable detection and avoidance of crash hazards during the pick-up process.

**No setup times, resulting in short cycle times**

Whether small load carriers, EPP containers, or cartons—the new multi-functional gripper with servo-vacuum technology means no gripper change or any other retrofitting of the robot is necessary, and an additional station for removing the pallet lid is also completely superfluous. At the same time, despite its multi-functional nature, the speed of the Polyplan robot-controlled depalletizing and palletizing systems is astounding as they are among the fastest systems of their type on the market with a cycle time of less than ten seconds per container.

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| **Caption** | Polyplan multi-functional grippers |
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