

Guide

Palletizer Selection



1. The Palletizing Machine

A palletizing machine stacks products on a pallet so that they can be handled as a pallet unit. Usually palletizers can build stacks, by placing products either one by one or multiple ones or a complete layer at once.

2. Palletizer Types

Palletizers are generally divided into two categories: layer palletizers and robotic palletizers.

2.1 Layer palletizers

Layer palletizers are the first to be introduced. They have the highest palletizing capacity with moderate flexibility, but usually better pallet build quality.

Layer palletizers can be divided into two subcategories depending on the way each layer is built: row-by-row (with a row builder) or in-line. Row building is used for low to medium speeds, whereas in-line for high speed palletizing.

Moreover, the layer palletizing machines can also be distinguished based on the level that the layer is built: high or low level. Usually high level palletizers can offer faster palletizing, with limited access, whereas low level ones offer direct access, but lower speeds.

2.2 Robotic palletizers

Robotic palletizers are usually preferred in applications, where flexibility to adapt to new product dimensions and complicated layer patterns are needed.

Robotic palletizers can also be divided based on their robot type into: articulated, cartesian, gantry, scara, etc.

However, they can also be divided into categories based on their gripper handling abilities: single product handling, multiple product handling, complete layer handling. Some grippers can also handle pallets or slip-sheets, of course with a relevant productivity reduction.

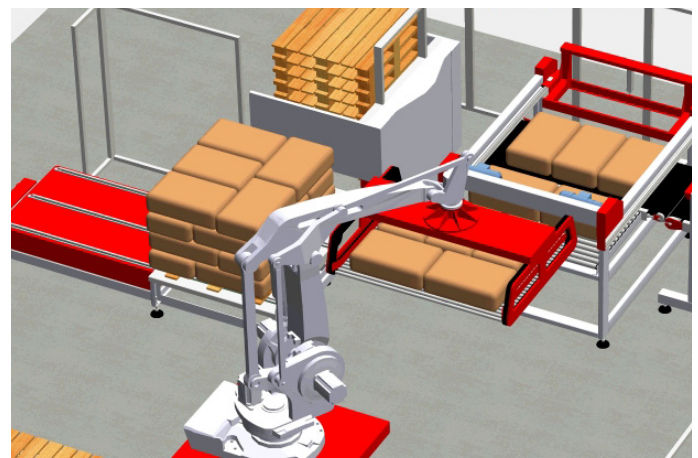
3. Selecting a Palletizer

3.1 Capacity

Choosing the right type of palletizer is usually not straightforward. The first thing that is needed is the palletizing capacity, which is usually expressed in units per hour. Small productivity usually yields handling each unit separately and can be performed either from a simple layer palletizer or a robotic palletizer. The higher the productivity, things tend to lean towards layer palletizing and usually to inline palletizers.

3.2 Serving single or multiple lines

Choosing between multiple lines and a single line palletizer is the second factor that must be taken into account. Multiple lines with slow moving units will generally yield robotic palletizing and single lines with high productivity are generally handled by layer palletizers. However, there are exceptions. For example, palletizing same product types from multiple lines can be handled easily from a high speed layer palletizer. Failsafe design can also play an important role, since having a unique palletizer serving two lines, means that a palletizer downtime will stop both production lines, whereas two separate palletizers could work independently, reducing overall downtime.



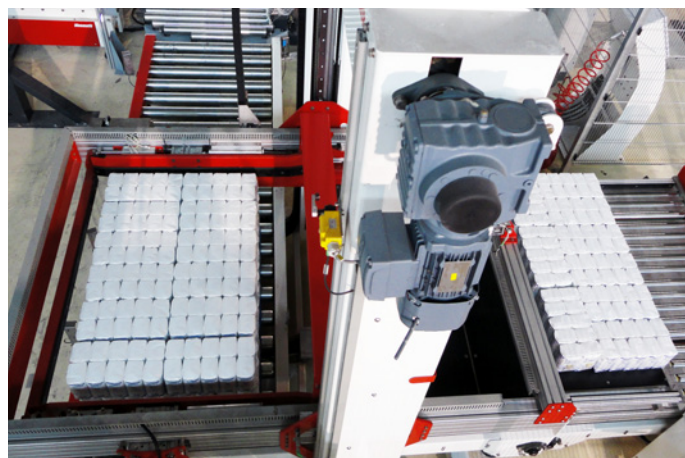


3.3 Product type

The third factor that affects the type is the kind of product being palletized. Palletizing bags that partly cover each other on the same layer can be easier realized with a robotic palletizer. On the other hand, having the need to press and tighten the whole layer from the sides, or press the whole layer downwards, for example in bag palletizing applications, can be usually performed by a layer palletizer. In general if your palletizing products can dramatically change, i.e. handling bags one year and the next year cartons, perhaps a robotic solution would be better.

3.4 Pallet patterns

Palletizers used to handle one or just two patterns. However, modern palletizing needs have highlighted the needed for more flexible machines, whether a robot or a layer palletizer, patterns can be programmed on the hmi by the operator, without the need of an expert and furthermore



performing quickly and easily the pattern change.

3.5 Flexibility

Robots tend to be more flexible since they can be easily reconfigured to handle different products. However, this is not always true, since a new gripper, reprogramming, robotic cell restructuring, re-engineering, etc can sometimes cost more than buying a new more up-to-date palletizer. Moreover, sometimes the layer palletizers can adapt much easier to new products with few or even no changes, compared with the robotic palletizers.

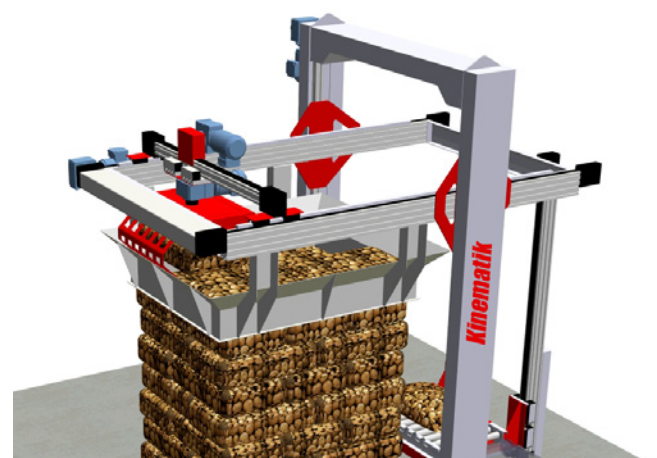


4. Recent Developments

- Palletizers tend to be more flexible taking advantage of the current PLCs and controllers abilities, allowing easy pattern programming and instant pattern changes
- Servo technology for layer palletizing and robotic grippers, allow faster, more accurate and easy to adapt to changes of the handled products
- Hybrid systems combining the advantages of both layer and robotic palletizers

Kinematik Palletizing Solutions

Kinematik offers one of the widest range of palletizing solutions capable of satisfying any need. Our experienced team will provide the right solution to any palletizing application.





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