



## Case Study

## End-of-Line Solution for Packaged Sugar Bag Bundles

SEF S.A.  
LARISA (GR)





### SEF S.A.

SEF S.A. operates in the industry of preparation and distribution (import and export) of agricultural products and seed oils.

When it came to palletizing and pallet wrapping, SEF turned to Kinematik for a complete fully-automatic end-of-line solution for wrapped packages of sugar bag bundles.

### System Operation Description

The packages merge intelligently, using a traffic control logic, at the systems infeed conveyor line from four independent machines. The packages then pass through the rotation conveyor, which rotates them if necessary and forwards them to the row building area.

Row after row a layer is build, which is then pressed and layed on the pallet through a stripping plate especially designed to avoid damaging the packages. Empty pallets are fed to the palletizer from an automatic pallet dispenser.

When palletizing is completed, the pallets with the stacked packages are transferred through a conveyor on a shuttle to the stretch wrapping machine. Finally the wrapped pallet is forwarded through an outfeed conveyor ready to be picked-up.

### The Solution

- Low Level Layer Palletizer (16 packages/min)
- Automatic Pallet Dispenser (15 pallet magazine)
- Stretch wrapping machine (24 pallets/hour)
- Infeed package conveyor line from four machines, with intelligent traffic control logic and rotating mechanism
- Pallet conveyor on a shuttle
- Outfeed pallet conveyors
- Engineering, Automation and Integration



## Product Quality & Pallet Stability

Throughout the process the packages are handled gently, maximizing the final product packaging quality. Pressing each layer forms aligned stacks and with layer interlocking guarantees stability during transportation.

## Compact and Flexible

The system has a very small footprint, requiring less space. Moreover, it has an increased flexibility, consisting of easily assembled submodules. Future expansion is possible by adding a second palletizer and sharing the wrapping machine.

## Intelligent

The infeed package conveyors group packages entering from four independent machines, using traffic control logic, controlling automatically the supply of packages to the palletizer. Moreover, there is a sleep function in case of being empty. Special care is taken to minimize the wear of the treated packages at the infeed conveyor and at the

palletizer. The pallet dispenser offers an anti-block mechanism, so that if a pallet is blocked the system is aware of it, protecting the equipment and reducing downtime.

## Simple Use

The palletizing system, except the wrapping machine operated by its own touch panel, is controlled through a touch panel that signals alarms and warnings, allowing instant troubleshooting.



## Safety

Personel and equipment safety is guarded with emergency buttons and protected with safety fences.

## Features

Smooth motion and gentle handling is achieved, by using frequency inverters to all the gearmotors, by fully guiding with linear guides all the palletizer's motions and by employing encoders to position the lifting and pushing mechanisms. Each layer is pressed from four sides, with regulated pressure, achiving the best possible layer form.

## Reliability & Minimum Maintenance

The system was designed especially to require the minimum maintenance consisting of top quality materials and equipment. Based on the easy to assemble and troubleshoot philosophy, all the electrical connections are pluggable.





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