

Mini Linear Palletiser with integrated infeed conveyors, stretch wrapper and safety system



Client:
Confidential

Location:
Sydney, NSW
Australia

The Project

Our confidential Client sought to replace a manual palletising process from their product infill line with an automated palletiser that allowed for increased production rates, improved OHS, and ensured their unique product type was safely and securely palletised for delivery to their customers.

Based on our standard solutions, Australis provided our client with a customised, automated, integrated palletising system, comprising custom designed infeed conveyors and bag-turner and a semi-automatic stretch wrapper for finished pallets plus an integrated safety system.

The system comprised:

- [MLP-12 mini linear palletiser](#) with customised gripper head and pallet patterns
- Custom designed bag turner
- [Custom designed infeed conveyors to palletiser inclusive of a 'bag flattener'](#)
- [Integrated semi-automatic stretch wrapper for finished pallets](#)
- [Full safety system inclusive of safety fencing and light curtains](#)

Mini Linear Palletiser with HMI | Infeed Conveyors | Stretch Wrapper



Deliverables:

MLP-12 Palletiser

Touchscreen HMI

*Customised infeed
conveyors*

Bag turner

Bag flattener

*Integrated Stretch
wrapper*

Safety system

The Result

The Client is a prominent multi-national manufacturer of baking goods, supplying hundreds of customers with specialist pre-mixed baking products. Products are supplied to their customers in 15kg bags. The Client was having issues with reduced output coupled with higher input costs due to manual palletising of the 15kg flour bags. Historically hand palletising was preferred as the bags are extremely slippery due to the flour based product, and because of the 100+ product mixes each with differing physical characteristics (density, mass, viscosity) meaning automated palletising was either too costly or did not produce a stable pallet of product. Australis solved these challenges by designing and implementing a:

- bag turner to accept the bags from the infill line and orient them correctly for the palletiser pick-up position;
- 'bag flattening' conveyor to compact the product to minimise compression of the palletised product;
- custom made bag-gripper palletising head to handle the different physical characteristics of each type of flour bag;
- customised product pick and place programme for the flour bags inclusive of an algorithm to adjust the drop height of each bag as the palletised product height increases, (which compresses the flour product, creating a new height variable as the stack increases);
- touch-screen user interface for the MLP-12 that enables the Client's operators to easily adjust the pallet pattern and other variables for the 100+ product mixes and to help adjust for the differing physical characteristics (density, mass, viscosity) of each product type;
- semi-automatic stretch wrapper to ensure the final pallet load is firmly secured for delivery to customers; and

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- full safety system, including exclusion from the palletising cell via safety fencing with a pallet infeed/ outfeed bay incorporating industrial light curtains to instantly stop the palletiser should a person or object enter the palletising cell.

Return on Investment

Resulting from the implementation of the MLP-12 solution, the tangible costs benefits achieved, include that the labour cost per unit of product produced on this line has reduced by 33% and, as a result has reduced the total unit cost by 5%. As a result the client's labour requirements across two shifts have reduced by 2 people. The intangible benefits are that it has removed a Work Health and Safety manual handling problem out of the workplace which in the short term improve WHS and in the medium term reduce insurance premiums and payroll tax.



Innovation

The MLP-12 has been completely designed in-house by Australis Engineering's design team and is manufactured by our trades team. By controlling the design and manufacturing process, Australis has been able to deliver a cost effective, small foot-print palletising solution that has the potential to reduce labour input costs and achieve a positive Return on Investment in less than two years in most circumstances.

