

Robotic Palletiser for Cement Bags



Client:
Cement Australia

Location:
Townsville, QLD
Australia

The Project

Cement Australia were looking to update their Townsville manufacturing facility to cater for premixed cement bags. Their previous manufacturing methods were focused on manual handling of the cement bags which contributed to time and resourcing challenges. Australis Engineering was engaged to design, manufacture and commission a new robotic palletising system to help solve these challenges.

To meet Cement Australia's objectives, Australis designed a system with the following attributes:

- Automatic palletising via the use of a robot whilst being able to accommodate different bag fill sizes (due to the different bulk densities of product) without any change parts
- Handle different quantities/ layers on the pallet from 1 to 7 layers of product
- Check the weight of the product at the infeed, with an automatic alarm for an under or over weight product
- System to be fully automated and able to outfeed completed pallets ready for a new empty pallet
- Safety fencing and guarding to comply with AS 4024.1
- Electrical programming and automation for the palletiser, and integration with the existing manufacturing systems

Multi-Axis Robot

Customised Gripper

Head

Check Weigher plus

In Feed Conveyor

Pallet Conveyor

Robotic Palletiser | Check Weigher & Conveyor | Pallet Conveyors



The Result

Australis provided a completely customised and automated robotic palletiser system that helped solve Cement Australia's manual handling challenges and improved production efficiency.

Due to the small space available for the palletiser system, there were limits to the pallet handling conveyors that could be installed. As the solution included a single pallet conveyor for handling the product during the palletising process and also handling the finished pallet. Empty pallets were inserted into a locating frame in the side of the safety cell via the use of a Forklift. The robot was able to pick up pallets from the stack, place them onto the palletising position and square them ready for palletising. This saved significant space and allowed a fully automated solution within the very small footprint.

Innovation

A key element of the Australis solution was the design and manufacture of the following items:

- Dual purpose robot gripper – including dual zone suction for picking up bags, and mechanical claw gripper to pick up pallets
- Compact system design to allow full functionality whilst fitting into limited available space

Watch the video: www.australiseng.com.au/product/robotic-palletisers/

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