



Wilmar Sugar case packing systems refined through automation

Wilmar Sugar are the largest supplier of retail sugar in New Zealand and Australia. Their products include the iconic Australian brand CSR, and they own a majority stake in Chelsea Sugar. For the past decade, RML has designed, built and installed a series of automated case packing systems in both countries.



THE CHALLENGE

Moving to smaller, cartonised retail packages

Wilmar first approached us in 2012, when looking for an automated wrap around case packer to cartonise their retail ranges. Supermarkets had a new requirement for shelf-ready products to save on in-store labour.

So product companies needed to deliver products to store in new cartons, featuring tear-off top and front panels that could be stacked directly on the shelves. Alongside this, sugar was now being marketed in new product lines and bag sizes (such as 250g and 500g).



Wilmar had to redesign their packing line

'This was not an easy thing to do,'

- Brian Ryles-Smith.

'We decided to install in a whole new automated line to pack the sugar bags vertically for presentation. It was also an opportunity to increase the packing line automation, with labour savings offsetting the capital costs.'

Today, one line can run with a single operator. We had been hand packing, so automating these lines also improved site safety.'

THE SOLUTION

Combining proven solutions with customisation for the unique requirements of the product

The customised case packaging system designed by RML can handle **26** different SKUs in various bag sizes and orientations – some lying flat, some standing up. Key to these projects was machine reliability in a 24/7 operation. And the end product, naturally, had to look good. With no off-the-shelf system meeting their needs, Wilmar contacted us for a customised solution.

Automated case packaging system adapted for sugar

At our second meeting with Wilmar, we presented a sketch of what we had in mind: a case packaging solution using standard equipment modules and drawing on successful past solutions and adaptations for other FMCG lines.

'RML gave us all a proven solution,' says Ryles-Smith, 'with bespoke elements required for sugar – all conceptualised from the outset. Their background and ability to automate our processes ticked all the boxes.'





We worked closely with Wilmar to fine-tune the size and shape of packaging and cartons until we had the perfect box sizes for the various retail products. 'This also involved some upstream work where we collaborated on the bulk density settings on their filling machines to get the volumetrics just right,' says RML engineer Glenn Hippisley. 'All it took then was to compress bags in the loading area for the ideal fit in the cartons.'

We designed a system that is flexible, so Wilmar can change products on demand. The case packer's logic controller has a simple HMI (human-machine interface) that Wilmar can use to tweak the system when necessary to suit new SKU parameters. The HMI runs OEE (overall equipment efficiency) software that enables the operator to compare production data, such as upstream stock, downtime, and quality of output, all of which allows Wilmar to benchmark its output and set valuable KPIs.



"Sugar is a machine's worst enemy"

Probably the most complex element in this project was the nature of the product itself, as Glenn Hippiusley explains: 'Sugar is a machine's worst enemy, and icing sugar in particular flows like water. There is always residual icing sugar on the line, where it can turn to a glass-like consistency under friction. So we incorporated protective guards and fitted positive air pressure to make sure as little sugar as possible gets into the machinery. And it works well.'

Stacking bags of 'liquid' icing sugar into a box is also a real challenge. Our solution was to stack each set (18 bags) into a chimney-style casing, which an ABB robotic arm then reoriented and relocated onto the flat box, which in turn was wrapped around the set and sent on down the line.

THE RESULTS

Better looking products from a faster and more reliable line

After installing the first wrap around case packer at the Chelsea Sugar factory in Auckland, Wilmar commissioned us to install a second and then two identical lines at the CSR Refinery in Yarraville, Victoria.



Because these are business-critical machines, we have a service and maintenance schedule with Wilmar: we service the machines every six months, and in between times their crew keeps everything clean and lubricated.

Our local engineers visit the plants when required, and all up we ensure their machines are optimised to run and run, maximising uptime and profitability.

'The RML team have been excellent from day one,'

- Brian Ryles-Smith.

'At our first meeting they said, "this is what we think you are looking for." Then we worked with them to refine the concept. They built and installed the machines and were helpful throughout the process. They explained how the machine ran, providing good information through the whole of design and commissioning.'



If you have a production challenge, we'd love to solve it.

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