



## Automating sheet application for a Slurry Freezing Line

Founded in 1973 by brothers Jim and Bill Broadbent, MacLab has transformed the nutraceutical market with their innovative green-lipped mussel products. Recognising the health potential of mussel powder, they invested heavily in research and development.

Today, MacLab oversees the entire process from farming to manufacturing high quality mussel powder, which is then processed into renowned marine oils like Lyprinol and Antinol through a partnership with Pharmalink International.

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## THE CUSTOMER

MacLab

"Our experience working with RML has been positive.

We feel we received value for our investment."

Dale Pritchard,  
Factory Manager, MacLab

"The technical communication of RML was robust and we appreciated their thoroughness in addressing our needs.

We have been impressed with the machinery they provided, as it has led to better operational consistency, enhanced safety, and improved communication within our team."

## THE CHALLENGE

MacLab was focused on identifying and implementing efficiency solutions to improve their production line performance. Factory Manager, Dale Pritchard, stated, "We wanted to improve our tray lining and freezer indexing system, so that we could reduce labour input while increasing throughput. We were also mindful that we needed a solution that had a low maintenance cost and downtime."

RML collaborated with Maclab to assess the production line process and identified that they required an automated machine to apply parchment sheets to their existing trays to ensure their valuable product was retained within the one-piece sheet. Adding to the scope was delivering controllable spacing of filled trays through their blast freezer. This was to maximise the freezer's efficiency and eliminate the mussel slurry from spilling out of the tray.

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## THE SOLUTION

The solution we developed for MacLab was a T117 Sheet Dispenser. The T117 was designed to use existing rolls of film (which had proved challenging to dispense in the past). An operator loads the rolls into the machine.

The machine has a servo-controlled draw system that accurately measures the length of the film; a flying knife cuts the film; grippers help to lay the cut film accurately into a waiting tray. The tray is conveyed out of the machine, and a new empty tray is conveyed in and placed into the sheeting position.



## THE SOLUTION CONTINUED...

The sheeted tray is conveyed through a filling machine, where the mussel slurry is added to the tray. The tray is conveyed to the infeed of the freezer, where our T113 Indexer feeds the trays into the freezer. Maclab wanted the ability to control the speed of the trays through the freezer as well as the gap between the trays.

We engineered a servo-controlled pusher that worked with an encoder that we retrofitted to the existing freezer conveyor. Linking the servo pusher and encoder through the new HMI that we installed gave the Maclab team all the control they needed to achieve the project deliverables.



*T117 MacLab Plastic Film Sheet Dispenser Renders*

## MORE FROM THE CUSTOMER

*Source: Dale Pritchard (Factory Manager), Ben Brookes (Projects and R&D)*

The customisation process was pivotal in addressing our specific needs. We required an integration with our existing reader system and a mechanism for staff to communicate effectively as line speeds fluctuated. This focus on automation sets RML apart from other providers we've collaborated with. The flexibility in speeding up or slowing down the operation was essential for seamless functioning on our end.

Reflecting on the installation and integration phase, we encountered some challenges, particularly in coordinating devices and adjusting sensors. However, the RML team demonstrated commendable flexibility in resolving issues related to equipment alignment and specifications, especially concerning tray symmetry and roll feeding. Minor programmable adjustments during commissioning proved crucial for optimal performance.

The MacLab team adapted well to the new machinery, thanks in part to the collaborative training provided by RML engineer, Ethan, and MacLab electrician, Jeremy. They took time to explain the operation of the new machine to all operators. The equipment was user-friendly, with subsequent programming modifications enhancing its accessibility. The machine's ability to quickly alert us to low roll situations further facilitated a smooth transition into operation.

The commitment shown to safety by RML was evident throughout the project. The new machines meet stringent safety standards, outperforming our previous equipment that lacked adequate safety mechanisms. The indexer function eliminated the need for operators to be positioned near potentially hazardous entry points, enhancing overall workplace safety.





## **EFFICIENCY AND PRODUCTIVITY IMPROVEMENTS**

As said by MacLab Factory Manager Dale Pritchard, "Since implementing the machinery developed by RML, we have observed measurable improvements in efficiency. The tunnel freezer, previously a bottleneck, is now operating smoothly. Although we have not fully realised all potential gains, improvements in throughput and consistent product quality have been significant. The automated system now effectively manages timing and spacing, minimising the reliance on human judgment."

From an RML point of view, the project was a success for Maclab and us. For us, designing two customised pieces of equipment for our customer, and for Maclab, they now have a system that allows them to obtain the output and product quality they require.

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**We love solving challenges that free our customers and maximise human potential.**

