



CASE STUDY

"SHAKING UP" PRODUCTION EFFICIENCY AND INCREASED CAPACITY with a contained system



"With a Matcon IBC system, we have been able to increase our production output 3x compared with our previous blending system. We now have a flexible solution that allows us to manufacture more efficiently, with faster recipe changeovers, reduced waste, and variable batch sizes".

Russell Scott, CEO

THE POWDER HANDLING EXPERTS

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Discover how an Australian-owned contract manufacturer of health, wellbeing and sport supplements increased production throughput, with an IBC system that can handle an increasing range of ingredients, minimise waste and maintain batch integrity.



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About Custom Foods

Custom Foods are an Australian-owned contract manufacturer of dietary supplements for the health and wellness market

Custom Foods are an Australian-owned contract manufacturer of dietary supplements for the health and wellness market. Partnering with clients to develop and manufacture unique, high quality, bespoke products according to the client's specific requirements.

The Shake ranges are sold across Australia at leading supermarkets and retail outlets alongside multiple E-Commerce platforms.

In addition to their contract manufacturing services, Custom Foods have their own hugely popular meal replacement products - The Man Shake and Lady Shake range. These powder-based products, contain high-quality milk and whey proteins, low GI carbohydrate made from sweet potato and fibre from super foods such as chia seeds, flaxseed and psyllium husk, with the addition of 25 vitamins and minerals.



Their Need

As business demand increased, Custom Foods found that they did not have sufficient production capacity to keep up.

Most of their clients were also beginning to request a range of batch sizes and recipes to meet their own consumer market needs. Custom Foods therefore needed to find a flexible solution that would allow them to manufacture more efficiently, with faster recipe change-overs, reduced waste and variable batch sizes.

Due to the nature of the recipes and a higher frequency of recipe change-overs, a contained system was required to eliminate any risk of cross-contamination, especially when handling potential allergens.



The Right Solution

At the time that Matcon were invited in to help, the factory consisted of a single floor facility with a fixed mixing system which was manually loaded through a sieve. Once the batch was mixed it was emptied into a plastic IBC which fed long screw feeders, which delivered the powders into various packing lines. This configuration meant that each batch had a long cycle time, recipe changeovers required a lot of down-time for cleaning, which in turn led to campaign manufacturing, which limited manufacturing flexibility.

Matcon were contacted several years ago by the previous owners of Custom Foods and had remained in contact. In 2020 the limitations of the blending system came to a head and Matcon was engaged to assist in providing a more lean and flexible solution.

The initial thoughts were for a modest upgrade, however with new business owners taking over, it became apparent that a new factory layout would be required to meet increased projections.

Matcon assisted with the process design, reviewing the manufacturing output objectives as well as planning for the future capacity projections. The final production layout utilises an IBC based system, which enables each processing step to be undertaken in parallel, and the whole system is a closed system, so it is easier to handle any allergen recipes.

The factory start-up was in Q1 2023 and the initial equipment installed included;

- IBC Filling systems with weighing,
- IBC Blender with High Shear Intensifier,
- IBC Discharge Stations feeding to various Packing & Filling lines,
- IBC Wet Wash Station.
- Subsequent to the initial scope an IBC Dry-Wash Station was also installed which will clean the IBCs using air instead of water.

During the project discussions it was evident that significant efficiency gains could be achieved by pre-mixing multiple batches of some of the most common minor ingredients and then dosing these into the batch IBC, thereby significantly reducing the number of manual weighing tasks. To achieve this, a 4-position Formulation system was added to the scope, which used 4 Vari-stroke Discharge Stations, dosing Loss-in-Weight into a single batch IBC via a transfer conveyor.

The Benefits of a Matcon System

Throughput and efficiency gains

By using an IBC based system, Custom Foods were able to realise the throughput and efficiency gains they were looking for, because each process module is independent of the next, which means that IBCs can be processed in parallel, running on each process step at the same time. This provides significant flexibility and makes it easier to introduce new recipes.

The IBC Blender produces 3 blends per hour, is quick to load/unload and has no downtime for cleaning as there are no product contact parts as the IBC is the blending vessel. Used IBCs are cleaned offline. The next batch IBC can be immediately loaded up. This has allowed Custom Foods to produce 3 times the weekly volume they could previously, and now with the ability to add capacity in the future.

Because the IBC system is modular, it is easier to create space for additional packing lines and an additional IBC Blender in for the future when the time is right.

The addition of the Dry-Wash station has provided a cost saving and a green environment benefit as the IBCs don't require wet cleaning and drying all of the time - this is only performed when really necessary, such as when changing from allergen to non – allergen or between strong flavours.





The Results

As a result of the IBC system Custom Foods have increased daily production output 3x compared with the previous blending system.

Even though the capacity has increased, they have also been able to introduce new manufacturing contracts due to the flexibility the IBC system has provided.

In line with Lean Manufacturing principles material loading, product discharge and equipment cleaning has all been decoupled from the main production process.

Increased batch integrity has been achieved with limited open transfers and containment.



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WHY CHOOSE MATCON

We understand the challenges faced by manufacturers of nutrition products.

YOUR CHALLENGES

Expanding portfolios result in many changeovers which significantly impacts on available production time.

Whey powder is notoriously difficult to handle being sticky and poor flowing. New plant proteins are likely to be even more so.

Increasingly, recipes contain Allergens which means even more time spent in thorough clean-downs.

HOW WE CAN HELP

A system designed to optimise production flow is what we do. All process steps occur simultaneously for maximum efficiency.

The unique Cone Valve in each IBC protects the blend & provides assured discharge, even on sticky mixes.

In-bin blending reduces downtimes for changeovers, and removes risk of cross-contamination for sports nutrition manufacturers.

