MATCON®
POWDERS, HANDLED

CASE STUDY

HOW TO INCREASE CAPACITY
without more manpower

Hero

"A very sound ROI & perfect fit with our production strategy 'Flexefficiency'. "

Andres Rodriguez, Technical & Production Director

THE POWDER HANDLING EXPERTS

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Discover how Hero were able to replace cumbersome pre-mixing in fixed mixers which were creating bottlenecks and reducing flexibility.

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CASE STUDY

HOW TO INCREASE CAPACITY
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The Need

Upgrading their existing manufacturing system and improving their capacity and flexibility, allowed Hero to produce a wider diversity of products.

Like many baby food and nutritional product companies Hero Spain was experiencing increased market demand coupled with increasing hygiene, allergenic and ATEX regulations.

They realised that the key to taking advantage of this growing demand and gaining increased market share was to significantly upgrade their existing manufacturing system and improve their capacity and flexibility, allowing them to produce a wider diversity of products.

A 'Profit Sapping Bottleneck'

The Alcantarilla plant focusses on producing large volumes of cereal and specialty baby foods and has done so for many years. They consider the most efficient operating method to be pre-mixing of the specialty ingredients, many of which are allergens. However, this used to cause a huge burden on the front end of the plant process.

They were using a horizontal ribbon blender to blend not only the main product mix, but also the pre-mix. Whilst the actual blending time might be just minutes, the ribbon blender had to be supervised by an operator, took hours to fill and empty and demanded 1-2 hours for a full clean-down.

This resulted in the pre-mixing stage being painfully slow and labour intensive with large amounts of down time between different batch runs. The system was not only limiting production capacity but also hampering the flexibility of the Hero production system.

The right solution

An alternative pre-mixing method which removed the need for cleaning the ribbon blender between batches.

The use of Matcon Intermediate Bulk Containers (IBCs) and an IBC Blender meant that changeovers could happen instantaneously, thereby dramatically increasing capacity and eliminating the bottle neck issue.

Because mixing of ingredients takes place directly within a Matcon IBC, the Blender is considered to be a 'non-contact' part which means there is no need for cleaning between recipes. It is immediately ready to accept the next IBC regardless of whether it is a different formula!

The IBC system that was installed included:

- Sack tipping for filling the IBCs
- IBC Blending
- Dosing system for adding the vitamin pre-mix
- Feeding to a packing line
- 1750L stainless steel IBCs.

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The benefits

SAVING TIME

Whilst the actual blending time with the IBC blender takes up to 15 minutes to reach homogeneity, there is no cleaning involved between batches, so the full cycle-time is only around 20 minutes compared to the 1-2 hours with the ribbon blender. This means significantly more batches can be processed each shift.

The use of the Matcon IBC blender provides substantial efficiency gains and helps to increase throughput. At the same time safety is maintained as there is no risk of cross-contamination.

WORKING IN HARMONY

Because the system is decoupled, IBCs can be being filled, whilst one is being blended, another feeds to packing and others are cleaned off-line. We call this parallel processing – having all manufacturing processes working simultaneously. It creates a Lean working environment, and in the case of Hero, it is estimated that the Matcon IBC mixing system increased their capacity by 100%.

FASTER RESPONSE

Mixing in an IBC created new methods of working both up-stream and down-stream of the mixing process. In Hero's case it enabled them to pre-mix very small additives (such as vitamins and minerals) into bigger more manageable 'lots' for dispensing automatically into large recipe batch IBCs. Previously, this was a very labour-intensive task to weigh out these 'micro-ingredients' for each batch and required numerous human controls and checks to avoid mistakes.

FLEXIBILITY

Downstream of the Blender, batches can be transferred for further processing or taken directly for consumer packing. This has given Hero the flexibility to respond quickly to changing demands, which in turn has significantly reduced the amount of WIP (work in progress) or expensive finished goods Inventory.

REDUCED RISK

It has also enabled them to upgrade the zoning for this particular part of the plant to 'zone 8'. The risk of cross-contamination and exposure to the powder is further minimized, ensuring an even higher quality end product. At the same time, ATEX compliance has been achieved far more easily than would have been the case with the old equipment.

THE RESULTS
at a glance

Improved product safety

Quality every time

Reduced inventory

Manpower saving

Improved flexibility

Increased capacity

Faster response times

Less cleaning

The results -
Faster response times

Mixing capacity has doubled, without any increase in either man power or space utilization.

The Matcon system installed has given Hero the ability to respond quickly to changing demands from the end customers. The ability to instantaneously switch recipes in and out, has reduced lead times from 1 week to less than a day.

As changeovers are easier and quicker, it has meant that work in progress or Inventory has been reduced by 25-30%, but production capacity has not suffered. A further benefit is that the lessening of the cleaning burden has resulted in 1000 man hours of labour being saved, which gives additional financial benefit to the company.

The Cone Valve technology within each IBC preserves the homogenous blend and ensures a high quality end-product for the consumer every time. Vital when supplying the Infant Nutrition marketplace.
The closed nature of the system has raised the safety standard further by removing any concerns over allergens or strong taste/scent cross-contamination.

The simplicity of the design of the equipment in combination with the automation capabilities, has meant that a saving of 5000 man hours in processing were possible.

Overall the switch to using Matcon equipment has meant that production capacity was doubled, with a 30% reduction in stock and shorter lead times – what business wouldn't like to see that?

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"By installing a Matcon system, our company has become more competitive in the production of our high runner orders as well as our specialty recipes.

The improved product quality and reduced cleaning needs of the Matcon equipment has led to us saving 1000 man hours for cleaning and 5000 hours in processing & maintenance.

A very sound ROI & perfect fit with our production strategy 'Flexefficiency'."

Andres Rodriguez,
Technical & Production Manager.

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WHY CHOOSE MATCON

We understand the challenges faced by manufacturers of infant nutrition.

YOUR CHALLENGES

Achieving the highest food safety levels is always the priority. Bacteriological contamination is a constant risk when handling nutrition powders.

Milk powder is notoriously difficult to handle, being sticky and poor flowing.

Ensuring that the micro-ingredient fortifiers are well distributed & mixed can be a challenge.

HOW WE CAN HELP

A system designed to improve production flow is what we do. All manufacturing steps take place simultaneously for optimum efficiency.

The Cone Valve ensures ease of handling of even the most difficult flowing powders.

Dry/Air-washing is available to remove the risk of waterborne contamination.

IDEX