

## “Instant success” and efficiency improvement at **Hero** baby foods



Hero Spain, part of the Hero Group, have enjoyed rapid growth and increased market share, particularly in the consumer segments of baby food and nutritional specialities.

Matcon are proud to have been part of the significant upgrade at Hero's baby food plant in Alcantarilla, Spain. The primary purpose of the upgrade was to meet increased market demand whilst ensuring the plant was ready to face ever more demanding hygiene, allergenic and ATEX regulations.

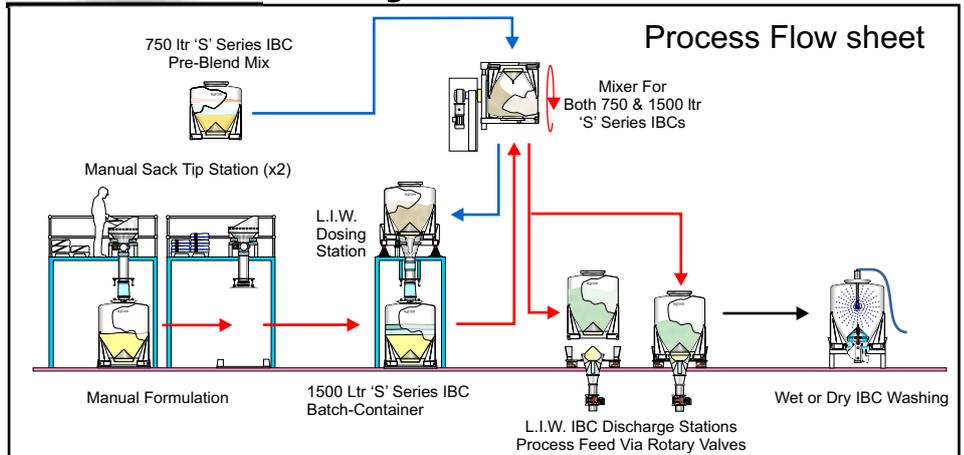
### The Problem - bottleneck

The Alcantarilla plant produces large volumes of cereal and “especialities” baby foods and has done so for many years.



IBC Formulation Prior to Mixing

Although volume was increasing moderately, the diversity of different products had increased rapidly and therefore so had the burden on the front end of the plant, which had to prepare all the “specialty” ingredients, which together with the base powder, make up the final product.



Due to the complex composition, which range from very small ingredients up to relatively large amounts, pre-mixing has for many years been established as the most efficient operating method. It has however been a painfully slow and labour intensive operation to produce the pre-mixes, with a lot of clean-down time required between different batches. The old system utilized a horizontal ribbon Mixer, which was hand-fed by the operator and demanded 1-2 hours for a full clean-down.

### The Solution - Lean Mixing

The alternative mixing method now implemented removes the need for cleaning the Mixer “completely”. Rather than trying to wash down a fixed installed mixing vessel, the product contact hopper (an IBC) is removed from the mixing cage and can be transferred to the next process stage or packing. The mixer itself is then available to mix the next batch immediately after finishing the first; even if there are concerns over allergens or strong taste/scent contamination from the previous batch.

### IBC Mixing - how it works

In conventional mixing, the various ingredients are filled into a static mixing chamber. Within this chamber, the product gets mixed typically by rotating baffles or by tumbling the chamber itself. With IBC Mixing, the mixing vessel(s) is mobile and filled “off-line”. On demand the particular formula is inserted into the mixer cage and removed after 10-15 minutes mixing. The mixer is then instantly ready to accept the next IBC with the same, or a totally different formula!

The now ready mixed batch can be transferred direct to packing, enabling parallel activities to be executed and thereby creating a lean working environment. See *process flow sheet*



IBC Batch Blender

# FEATURE

## The complete system solution

Mixing in the IBC opens up completely new methods of working in the areas before and after the actual mixing process. In Hero's case it has allowed a very rational method of pre-mixing very small additives (such as vitamins and minerals) into larger more manageable batches. These batches are stored in smaller IBCs from which the required amount is dispensed automatically into the bigger batch IBC. Previously, this was a very labour intensive task with a lot of human controls and checks to avoid mistakes. (see process flow sheet).

After Mixing, the batch is transferred to further processing, but could equally be taken direct to consumer packing. The most significant benefit related to packing is that this mixing solution allows flexible production, which is capable of responding quickly to changing demands from the end customer. This, in turn, can have a dramatic effect on the volume of product in the finished goods warehouse or "work in progress". It is common to achieve 25-30% total reduction of product in stock and reduce average production lead times from a week to less than a day.



Pre-Mix IBC on L.I.W Dosing Station



IBC Feed to Pneumatic Conveyor

## The End Result

By adopting a Lean Mixing approach Hero estimate that mixing capacity has doubled, without any increase in man power or space utilization.

Further more, they have upgraded the zoning for this particular part of the plant to "zone 8", which further minimizes the risk of cross contamination and exposure to the powder, ensuring an even higher quality end product. At the same time, ATEX compliance has been achieved far easier than would have been the case with the old installation.

**According to Andres Rodriguez, Technical and Production Director at Hero Alcantarilla: "Matcon is the one stop shop when it comes to efficient, hygienic and novel solutions for flexible Food manufacturing".**

## The Next Generation in IBC Mixing

Tumbling systems such as described in this article have an inherent weakness when it comes to mixing products with a high fat content, or requiring a liquid addition. Other container mixers are available on the market based on aggressive mixing with a large agitator (no tumbling). These mixers apply a huge force to the powder increasing the temperature and commonly operate with "open top" vessels, thereby generating excessive dust.

Matcon have recently developed an elegant hybrid. This mixer tumbles as above, but by inserting a small agitator in the IBC lid, lumps can effectively be dispersed. (see picture)



IBC Batch Mixer with High Shear

This new add-on technology more than doubles the potential market within the food industry and many of the global flavour manufacturers view this as a real breakthrough to their complete manufacturing philosophy.