

## Bespoke Sachet Packing System

### Machine Overview

The sachet packing system has been developed for a large food flavouring and additive manufacturer to overcome a specific production problem they encountered when taking on a new product range for an international food manufacturer. The new product range requires food flavouring sachets to be supplied to their customer in specific boxes with an un-broken continuous stream.

The sachet stream needed to be layered into the boxes in such a manner as to allow the end customer to extract the stream from the box and feed it into their process line for automatic inclusion within their end product.

Our brief was to develop and manufacture a system to take two sachet streams directly from the form, fill and seal machine, count and layer the sachets into the box and cut the sachet stream when the required number of sachets is achieved.

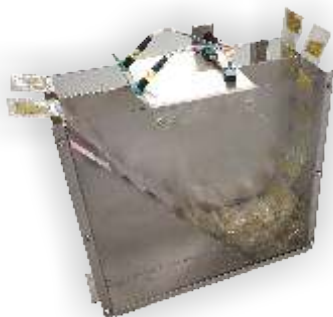
The resultant machine has been designed as a single stand alone system that is simply positioned at the end of the clients existing production line and provides fully automated operation of a process that was previously carried out manually by two operators.



### Stream Feed System

The sachet stream is fed directly from the form, fill and seal machine into a buffer hopper which monitors the incoming stream tension and stops the downstream feed if this becomes too great. The sachet stream then passes through a

guide and over the top of a single speed drive assembly which draws the stream out of the feed hopper. The assembly comprises of a pair of side wheels with rubberised drive rods between to grip and feed the sachets.



## Stream Tensioning

From the stream feed system the sachet stream passes through the tensioning system which maintains the stream tension and provides automated control of the in-feed system. Tensioning is achieved via a monitored dancer bar system which raises under stream tension and lowers under gravity when the tension is reduced.

When the dancer bar raises to its upper position the sensor is triggered and the drive wheel is automatically activated. The drive wheel continues to run for a pre-defined time period therefore reducing the stream tension and lowering the dancer bar.

Following the dancer bar the material stream passes over the top of an idler guide before progressing towards the down stream sachet dosing system.



## Stream Dosing & Cutting

The sachet stream passes through a series of guides then to the dosing system which comprises of a pair of counter rotating rubberised feed wheels. The wheels are driven by a variable speed

encoded drive providing a controllable feed rate in direct relation to the sachet layering system. Upon reaching the desired sachet count a pneumatically operated blade is activated which cuts the sachet stream horizontally along the existing perforation line.

## Box Filling System

The sachet stream is layered into the box via a swinging chute assembly driven by a linear electric cylinder with an encoder drive unit providing highly accurate positioning and permitting speed matching with the stream dosing system.



The boxes are located upon a moving carriage system, as the chute swings across the box width the carriage moves backwards and forwards at a constant rate to provide an evenly distributed layer of sachets within the box.

The height of the sachet layer within the box is monitored via a laser level detection system. As the box fills the level monitoring system detects this and lowers the box carriage accordingly to maintain a constant distance between spout discharge point and upper sachet layer.

