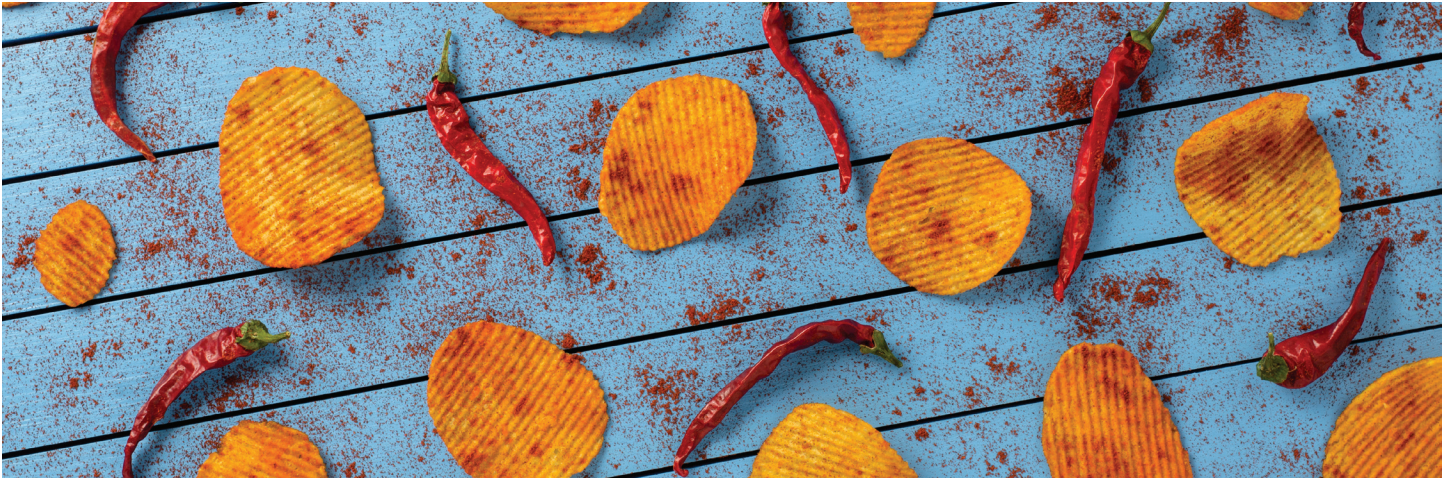


## SNACK FLAVOURING TECHNOLOGY

### SNACK FLAVOUR APPLICATION SYSTEMS



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**SPRAY  
DYNAMICS**



Seasoning is an integral part of any snack product, it is a way to differentiate and create interest in your product. The Seasoning systems most commonly used in savoury snacks include:

- Conveyor based dusting system
- Drum based single-stage dry flavour application
- Drum based two-stage oil and dry flavour application
- Drum based slurry

The key to great seasoning coverage is consistent flow with process control. So what is the right flavouring system for your snack product?

Dry only systems are used on products that have natural tack

- Fried potato chips and crisps
- Fried pellet snacks

Oil and dry systems are used on snacks that do not have natural tack

- Tortilla chips
- Corn chips
- Mini rice cakes or other dry puffed products
- Popcorn
- Baked chips and crisps
- Extruded snacks

Slurries

- Extruded snacks
- Popcorn
- Puffed snacks

Seasoning systems fall into the following 3 categories:

In-kitchen seasoning systems typically have a large capacity and are used where minimal flavour changes are required, they include two stage or slurry systems.

On-machine seasoning systems are used for one stage coating and are ideal for applications where many flavour changes are required.

Belt coating systems are used primarily for salt only application.

### IN-KITCHEN SEASONING SYSTEMS

In-kitchen or process seasoning systems consist of a large coating drum, seasoning metering device and a seasoning spreader device. They are ideal for core products on process lines that change flavours once a shift or less. These systems are great for high volume products and designed for continuous product flow.

The advantages of an In-kitchen system:

- Ideal for large production lines that have a few flavour changes
- Most consistent seasoning
- System can be rolled in and out of the line
- Typically less expensive

### ON-MACHINE SEASING SYSTEMS (OMS)

On-machine seasoning is seasoning application at the weigher (sometimes referred to as on head). An OMS system comes pre-assembled and mounted to a platform prior to shipping, allowing it to be quickly set in place and connected to utilities at the plant so production can begin without delays.

Benefits include, ease of operation, sanitation, cleaning and simple to use, as well as newer designs to provide excellent coverage.

OMS systems apply seasonings to snacks just before they enter the weigher to increase production versatility. They allow processors to run a different flavour on each bagger, running multiple flavours at one time leads to smaller warehousing requirements. Fryers continue to run during flavour change-overs and with higher packaging equipment efficiency experienced. These systems are typically used for salt only. They require less capital outlay than the more sophisticated In-kitchen and OMS systems and are simple to use.



### DUST-ON/OVER THE BELT SEASONING

Spray Dynamics® metermaster salt applicator: Dispenses powdered and granulated salt over-product on a moving belt with consistent and repeatable accuracy.



### OIL + DRY FLAVOUR

Two-stage systems are employed when the natural or process induced tack is not present on the product to be flavoured. Oil is sprayed onto the product prior to adding the dry flavour. The temperature of the product is very important to how much oil stays on the surface, similarly the dry flavour coverage is totally dependent on oil coverage.

An all-in-one package, the two-stage seasoning - in-kitchen system can handle large product volumes. If temperature is critical the placement is flexible. This system is the best choice for high absorption products.

### TWO STAGE SEASONING SYSTEMS

Two stage seasoning – oil in-kitchen dry flavour on head

Advantages

- Short dry flavour changes
- Oil spraying confined to the kitchen area
- Allows for time adjustments between oil and dry
- More flavours can be produced at one time

Two stage seasoning – oil and dry flavour on head (OMS)

Advantages

- Short flavour changes
- Works well with low fat and high absorption products
- More flavours can be produced at one time

Two-Stage Coating System: The Spray Dynamics two-stage coating system provides consistent, uniform application of liquid and dry coatings on extruded, baked, frozen, and fried products.



# SNACK FLAVOUR APPLICATION SYSTEMS

## APPLICATIONS SYSTEM - DRY DUST APPLICATORS

There are various types of dry flavour applicators that can be used for applying seasoning to snack products, these include Scarf plate dispensers and electrostatic systems.

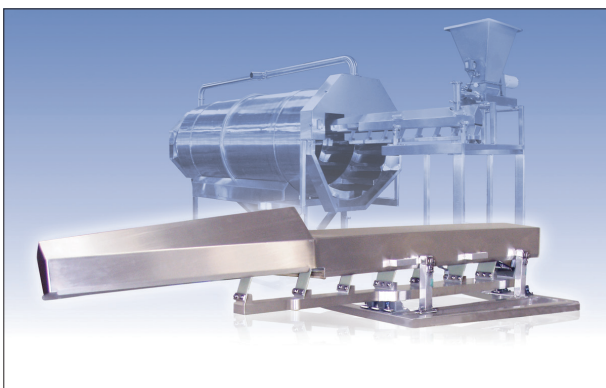
### SCARF PLATE FEEDERS

Scarf plate feeders are easy to operate, easy to clean and can work with most products, creating a consistent curtain of seasoning.

On the scarf plate feeder the bias is cut on a vibratory or horizontal motion conveyor, and a screw feeder is used to feed the spice at the desired rate.

Electrostatic applicators work by applying a static charge to the powder, oil or slurry as it is being sprayed onto the base product. As the flavourings and coatings become 'negatively' charged, they repel each other making a nice curtain or spread of seasoning.

Electrostatic applicators offer a reduction in dry powder usage, even coverage and a cleaner working environment.



## SPRAY APPLICATORS

Pulsing sprays are a proven economical, simple but highly accurate system with a small footprint. They include a piston pump with adjustable cavity size.

Spray Applicators - continuous air assist atomise low pressure liquid using air. The air is added around the annulus or internal mixing chamber and is typically low pressure creating a continuous stream of oil. The system works well with a PD pump and flow meter and is good for high oil rates.

With Spray Applicators - continuous oil spray systems getting an even coating of oil on each piece is key to flavour adhesion and appearance. Processors should use as many nozzles as practical to apply to more pieces at once. If using a pulsing system keep rate above 150 pulses per minute and make sure continuous systems have balanced pressure to each nozzle. Always spray on tumbling product.

## SLURRY APPLICATORS

When product specifications call for more oil than seasoning, a slurry is typically used. Typically oil is more than 60% of the slurry weight. Mixing tanks are required as many ingredients including salt will not dissolve in oil and constant mixing is required. Most slurry applications require a soak, time for the oil seasoning mix to be absorbed in the base product.

The advantages of using a slurry applicator is the correct mixing of several liquid and dry powder ingredients in proportion. They also work well on extruded and pellet type products as well as popcorn.

Spray Dynamics® master series tank system - Engineered mix/use liquid blending and supply station.





## ABOUT HEAT AND CONTROL

### BENEFIT FROM OUR GLOBAL EXPERIENCE

HEAT AND CONTROL is a world leading equipment manufacturer of food processing and packaging systems.

Our global team can support you with equipment demonstrations, engineering and applications assistance, project management, installation, training, service and spare parts support wherever your plant is located.

### PROCESSING, PACKAGING AND INSPECTION

#### Turnkey solutions offering a single source of supply

Being a single source supplier allows us to provide holistic solutions designed and manufactured specifically to meet the requirements of each individual customer now and in the future.

In order to provide our customers with the best solutions, we work with the world's leading inspection equipment manufacturers, including Ishida and CEIA.

With a team of expert engineers and service technicians, we partner with our customers every step of the way, from design, to onsite training, as well as future servicing and maintenance. Our thought leadership within the industry and ability to provide solutions for all steps of the manufacturing process ensures our customers have the highest level of flexibility, investment security, consistency, and success.

