sugar inprocess®
INDUSTRIAL SUGAR PROCESSING

POWDERING OF CHOCOLATE TRUFFLES

Continuous & homogeneous dusting in the food industry

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Industrial Truffles Powdering
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CHOCOLATE TRUFFLES DUSTING WITH COCOA POWDER

Chocolate truffles display a characteristic powdery surface conferring a visual appeal and a gustative experience. The application of the cocoa dusting layer is challenging when made on a large scale. It is archetypal of other dusting processes met in the food industry.

WHAT DOES THE PROCESS INVOLVE?

The process consists in the application of a thin layer of cocoa powder on the surface of the truffles. The surface state and the choice of the cocoa are optimized to ensure the adhesion of the powder. Should one think of coating a chewy sweet with a fruit powder, the process also applies.

Based on these options, two main processes can be used: **moulded** or **extruded products**.

CORE

- Cocoa powder
- Icing sugar
- Dried fruits

POWDER

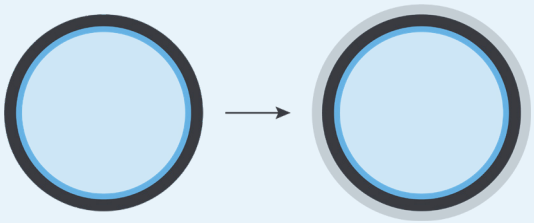
- Ganache
- Chocolate
- Marzipan

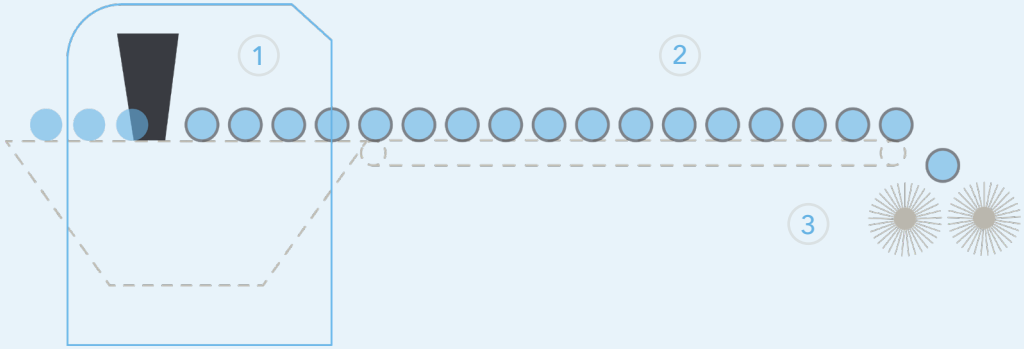
RESULT

- Cocoa truffle
- Dried fruit truffle
- Other topping truffles

MOULDED PRODUCTS

Moulded products display a dry surface on which no powder can adhere. A liquid such as cocoa butter or chocolate is first applied on it. It is the sticking medium which will catch the powder at the dusting step.

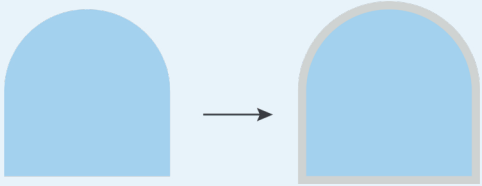


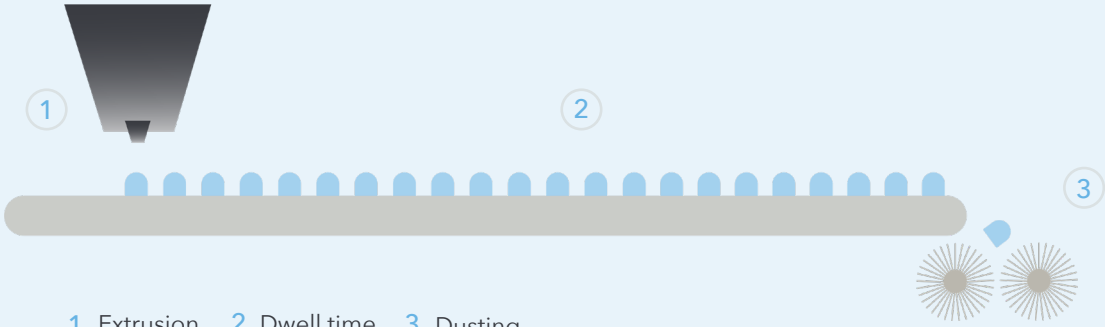


1. Moistening 2. Dwell time 3. Dusting

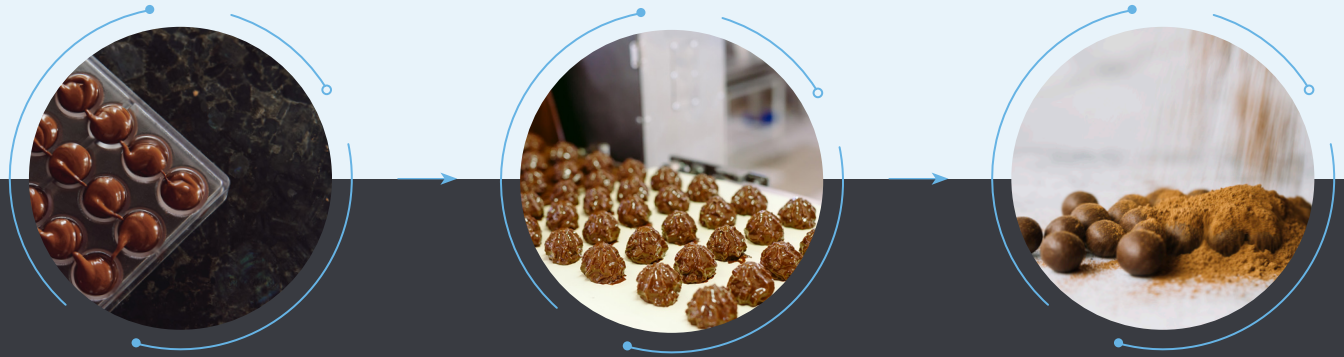
EXTRUDED PRODUCTS

Extruded products display a moist surface on which a powder can adhere. It will catch the powder at the dusting step.



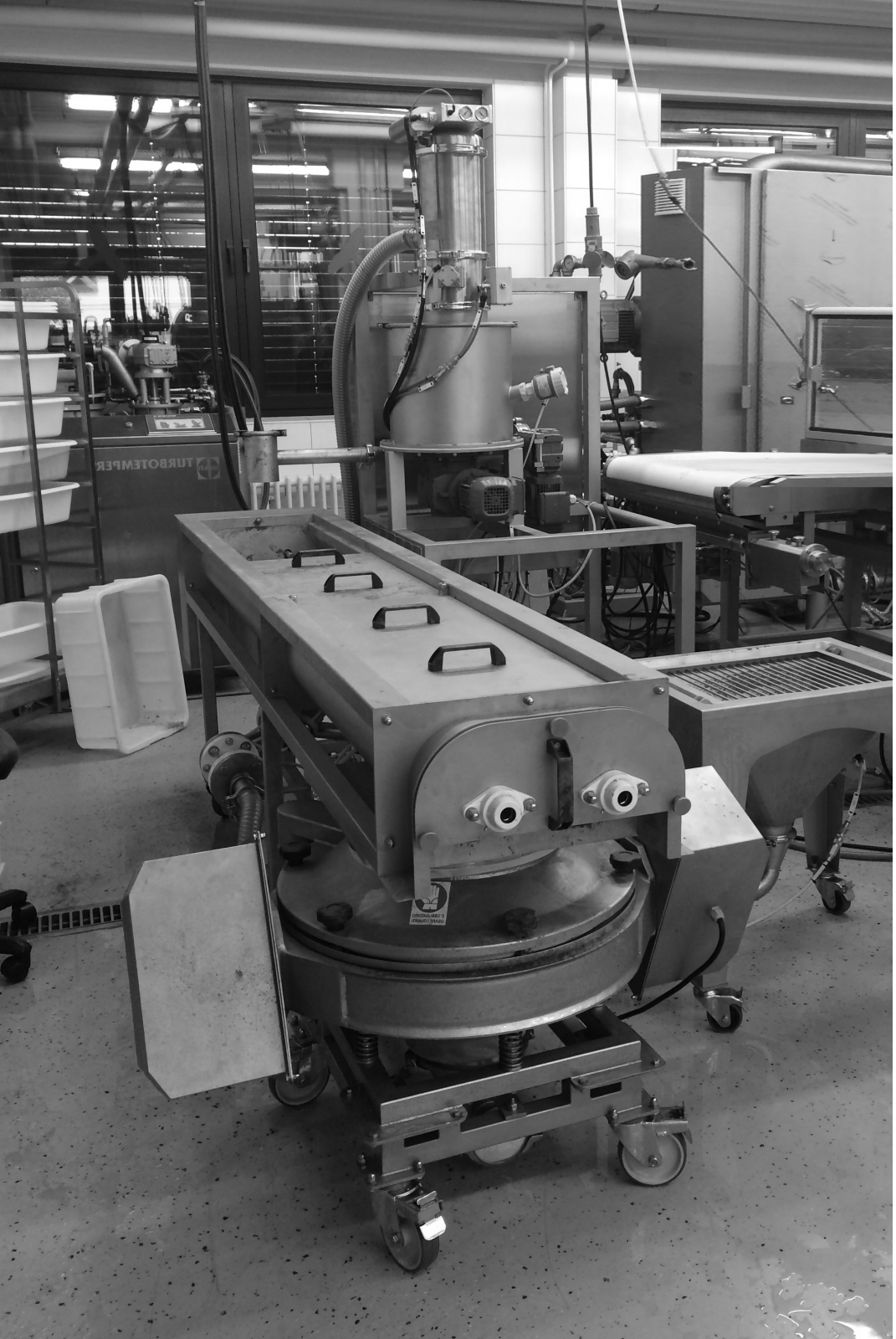


1. Extrusion 2. Dwell time 3. Dusting



COATING SYSTEM

The system is versatile and copes with varying throughputs of truffles. A set of peripheral devices ensures a constant flow of cocoa throughout the system. The active powdering zone is fully enclosed and can be connected to a vacuum dedusting unit.



THE PROCESS

The Biturbine's features

COMPONENTS

A Biturbine system is made of a pair of counter- rotating screws enclosed in a trough. Peripheral devices such as a powder feeder can be integrated onto it.

WORKING PRINCIPLES

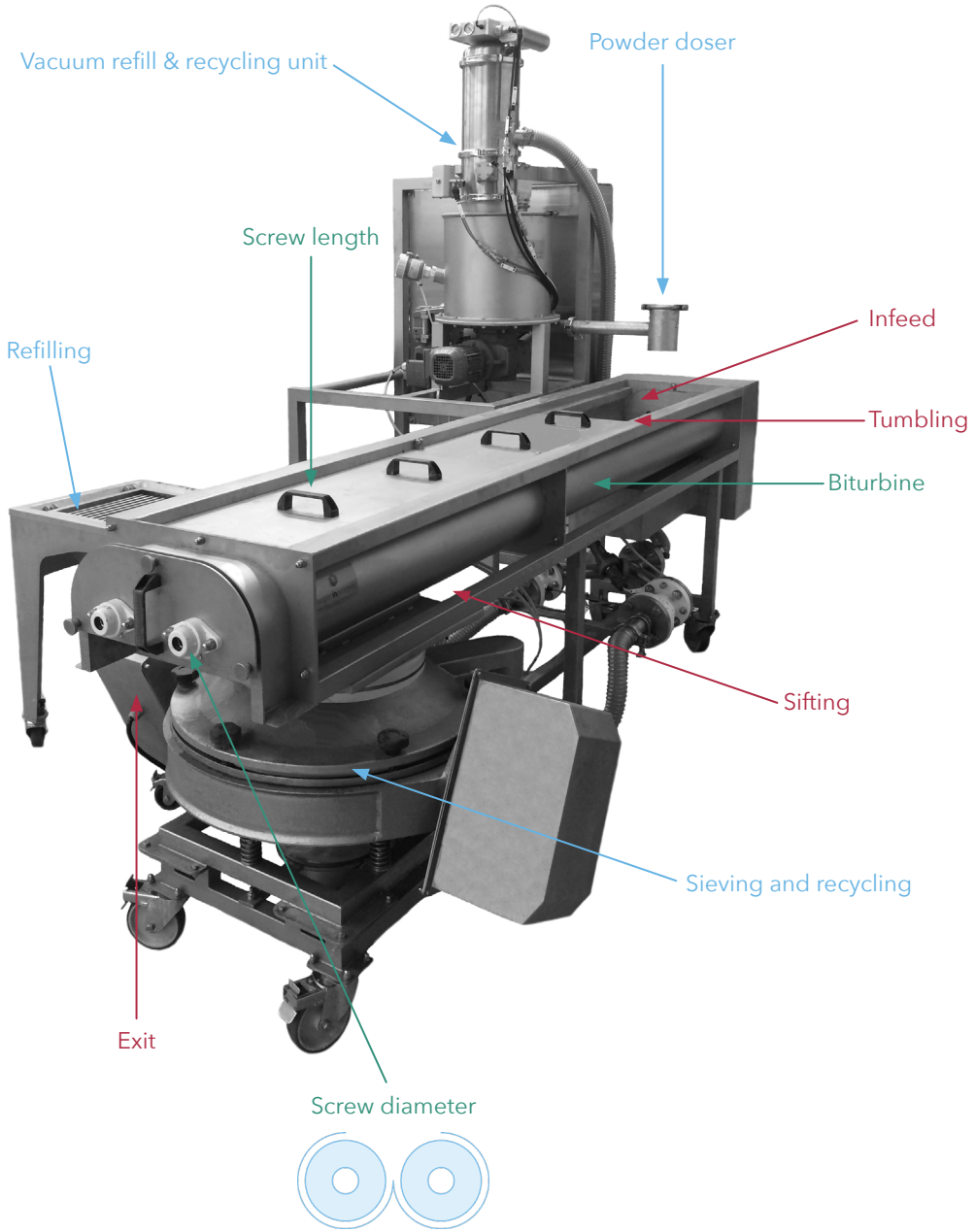
The product is introduced in the infeed orifice and undergoes several operations as it moves forward : tumbling, powder addition and separation.

VARIABLE PARAMETERS

The screw speed is varied to adjust to the throughput and fine-tune the tumbling motion. The powder addition rate is controlled by the feeder.

FIXED PARAMETERS

The screw diameter and the screw length are fixed after test.



OUR PROCESS

SUGAR INPROCESS continuous powdering systems are specially designed from the Biturbine experience technology to complement the production lines for chocolate truffles.

Legend

- Fixed parameters
- Working principle
- Variable parameters

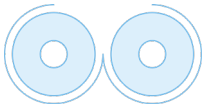
Performance

Biturbine TB 150 - 750 kg/h
Biturbine TB 200 - 1500 kg/h

THREE REASONS WHY YOU SHOULD GO FOR THE BITURBINE

1. The hand touch
2. The contained design
3. The throughput match

THE HAND TOUCH



The geometry of the twin screws rotating induces a specific motion. As a result, it causes a triple effect.

THE FORWARD MOTION

It transfers the cores.

THE LIFTING MOTION

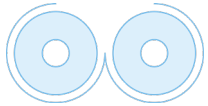
The screw angle flight gently exposing the cores to the ingredient.

THE FLIPPING MOTION

The opposite rotation moves each core from one side to the other and applies the ingredients onto them.

Thus, a powder - cocoa or any fine powder – disperses, applies and sticks to the core product, such as handmade chocolate truffles.

THE CONTAINED DESIGN



The processing zone is actually small. The benefits are threefold:

THE MINIMAL VOLUME

The minimal volume of cores and ingredients avoids excessive attrition between particles and also eases the emptying of the system at the end of a production run.

THE PROCESSING CHAMBER

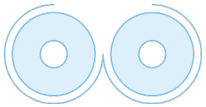
The processing chamber is enclosed except for the infeed and outlet orifices, thus limiting pollution

THE EXTENTED LENGTH

It allows to split the process into its essential functions and to branch -> connect the necessary peripheral components such as an infeed chute or a powder feeder.

In chocolate truffles, a sifting zone to collect and recycle the excess powder and a dust extraction hose can be easily fitted.

THE THROUGHPUT MATCH



Through the rotation speed adjustment,
three variables are controlled:

LINE THROUGHPUT

To cope with the entering throughput of cores within a wide range.

RESIDENCE TIME

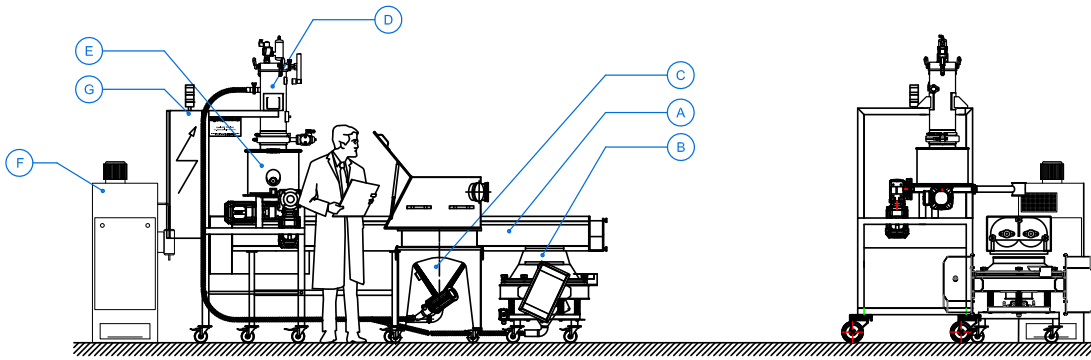
To optimize the exposure of the cores to the ingredient.

MECHANICAL ENERGY

To ensure the appropriate tumbling and intimate mixing.

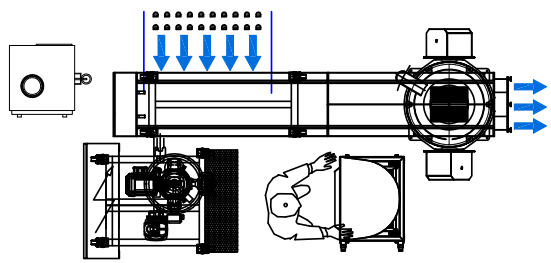
Fine-tuning the tumbling of truffles will ensure that the cocoa powder applies evenly onto the surface while the excess is carefully removed in the last zone.

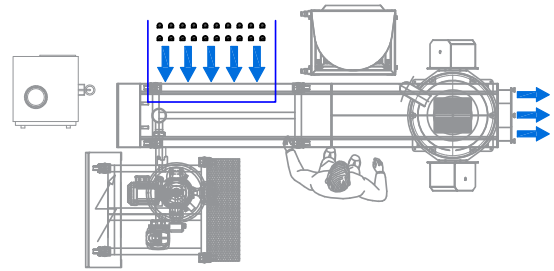
COMPLETE CONTINUOUS POWDERING UNIT

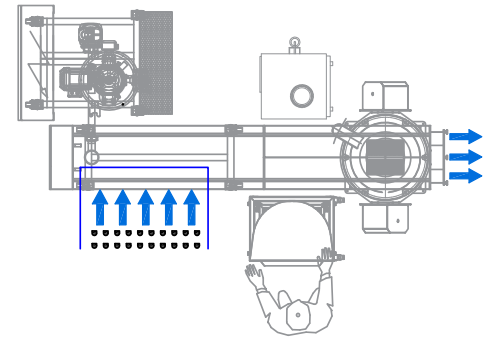


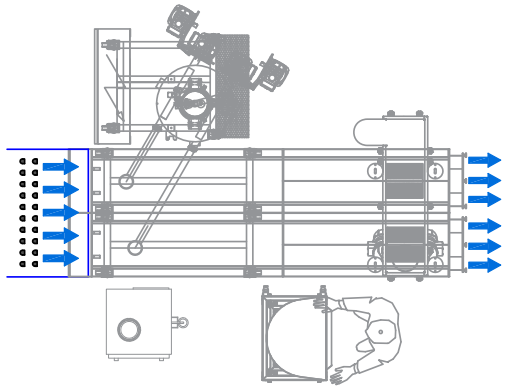
- POWDERING MODULE (A)
- SIEVING MODULE (B)
- REFILLING HOPPER WITH HOOD (C)
- RECYCLING/ELEVATION MODULE (D)
- CONTINUOUS RE-DOSING MODULE (E)
- DEDUSTING MODULE (F)
- ELECTRICAL CABINET (G)

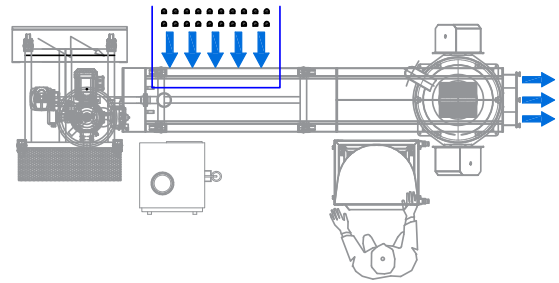
EXAMPLES OF DIFFERENT SETUPS

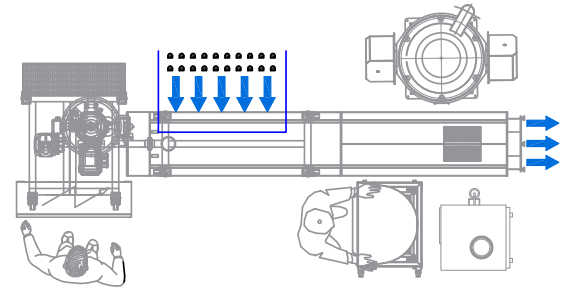












ABOUT SIP

Sugar InProcess SAS was created in 2016 but experienced since 1998 in powder coating, dosing, and transfer.

Coating systems have been added to the portfolio by taking charge of projects associated with the Biturbine system.
It is used in the food industry for various applications. SIP concentrates now specifically on powder coating.

Dosing of ingredients is an essential function which customers require. It applied first to the filling of volumes in packaging and extends today to process equipment.

The transfer is the initial activity of the Transitube group from which SIP is issued. Simple at first sight, it demands extensive knowledge of material behavior under often critical conditions.

This combination of know-how with the experience of varied situations at clients' sites allows SIP to cope with a wide range of demands. It also makes it a reliable partner from the launching to the completion of a comprehensive project.

in sugar inprocess

sugar inprocess®

INDUSTRIAL SUGAR PROCESSING

START YOUR PROJECT WITH US TODAY!

SUGAR INPROCESS proposes solutions to optimize the sugar and food products production, processing or packaging.

Get in touch

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