

# EXTRUSION DAYS BATCH-TO-CONTI



# Material Handling, Automation, Turnkey Clever Solutions Around the Compounder

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# Material Handling, Automation, Turnkey Clever Solutions Around the Compounder



- The Coperion portfolio for compounding plants
- Smart solutions for material handling and automation
- The complete plant from one single source

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confidence through partnership

# The Coperion Portfolio for Compounding Plants



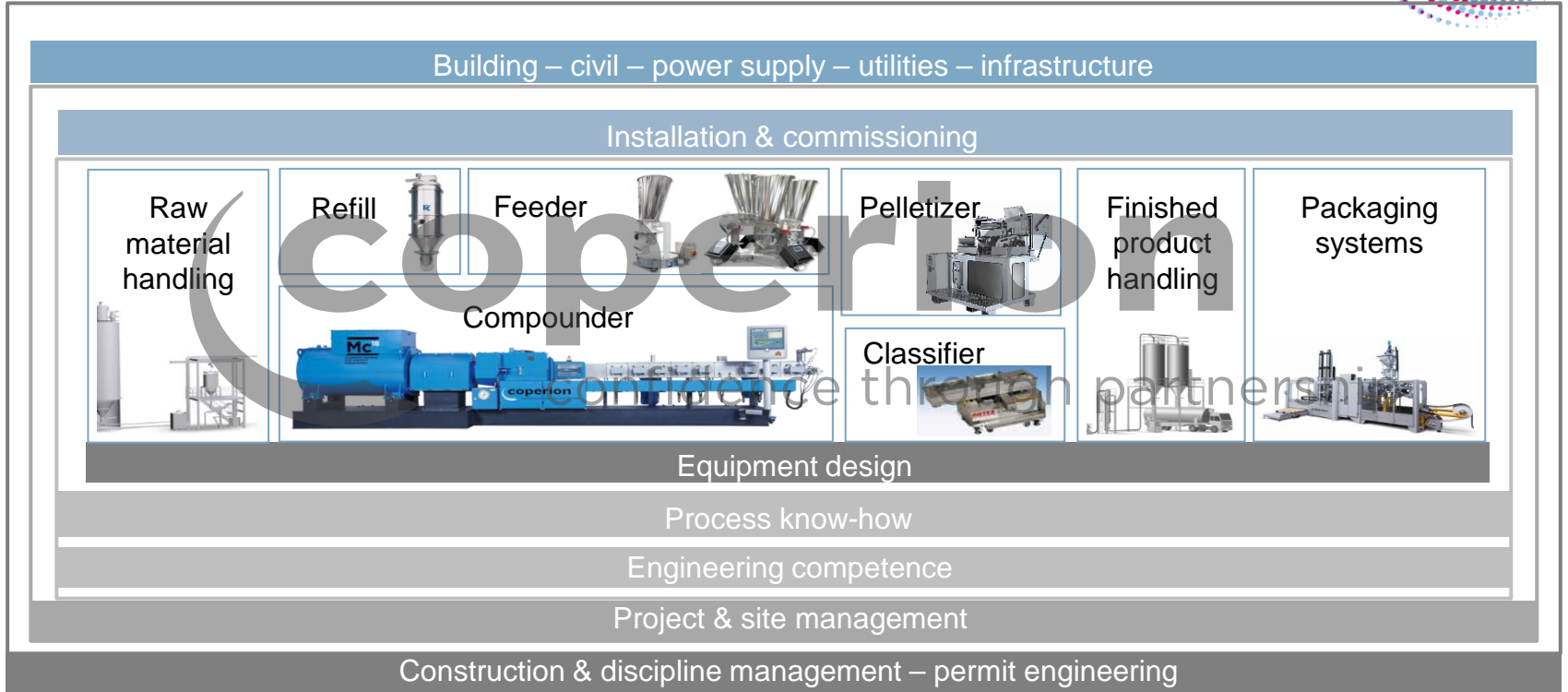
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# Compounding Plants

## One Envelope for the Key Elements of the Process Scope

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# Smart Solutions for Material Handling and Automation

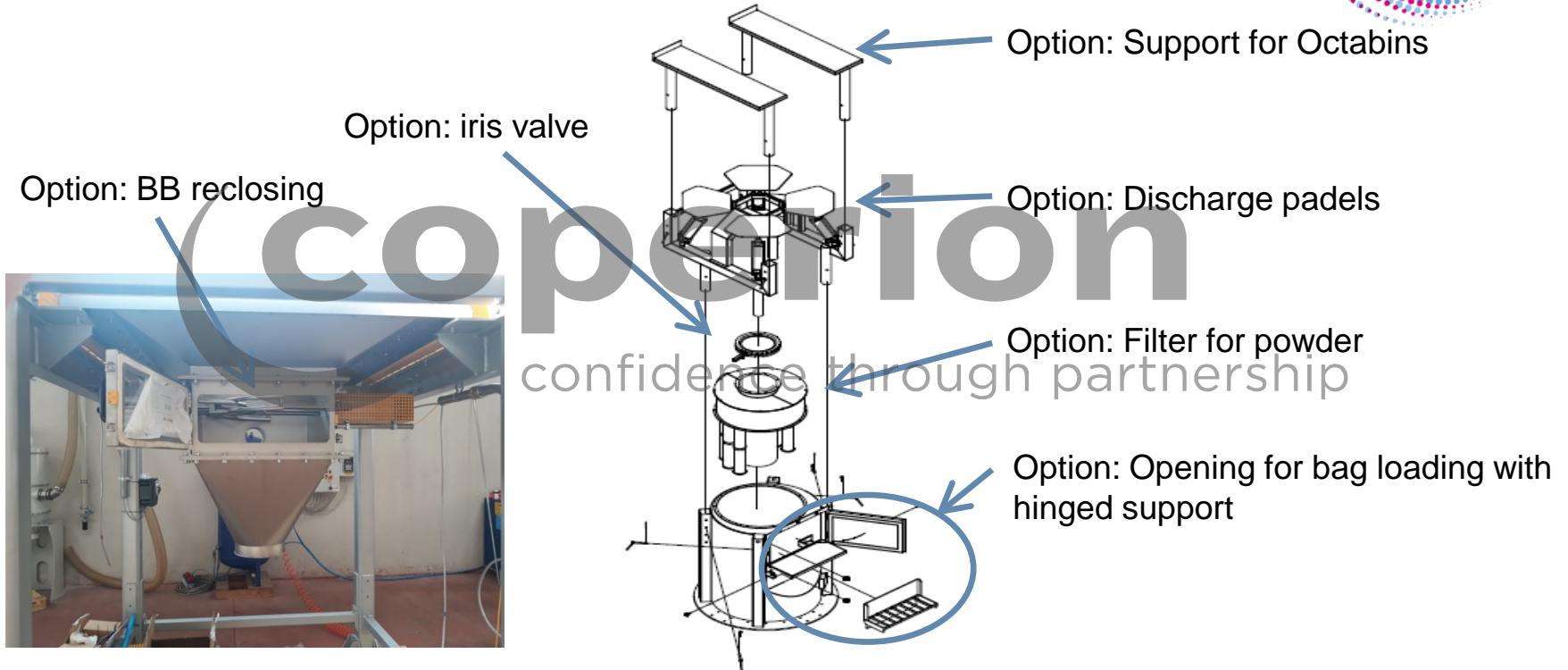
The Coperion logo features a stylized 'C' on the left, followed by the word 'coperion' in a lowercase, sans-serif font. The 'C' is partially obscured by a circular mesh pattern. The background of the logo area is filled with a dynamic pattern of blue and pink dots of varying sizes, some of which are arranged in a curved, trail-like pattern on the right side of the image.

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# Discharging Station

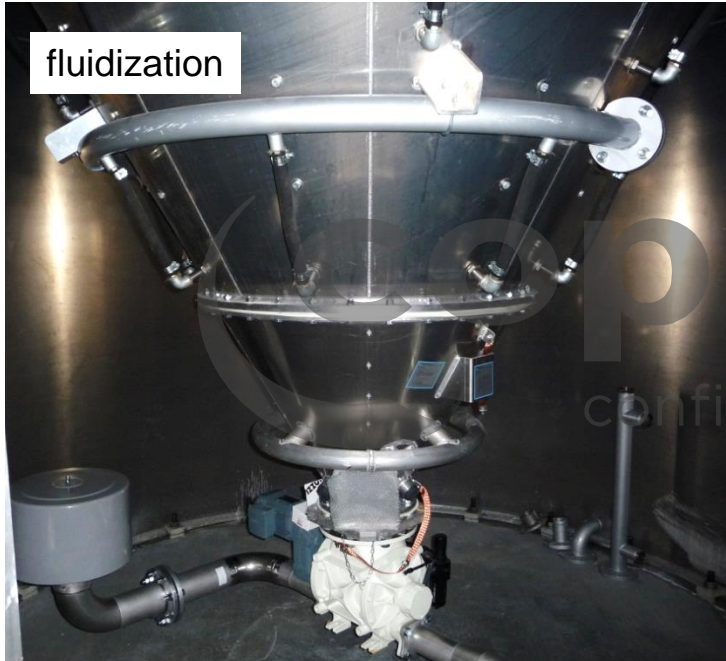
## Modular Design for Pellets and Powder



# Reliable Handling of Difficult Powders

## Extraction from Storage Silos and Hoppers: Fluidisation or Bin Activation

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» for bad flowing materials:  $\text{CaCO}_3$ ,  $\text{TiO}_2$ ,  $\text{MgOH}$ , ATH, talcum, carbon black, pigments



# Powder Premixes

## Smart Weighing and Handling

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➤ Identification and discharge of ingredients

# Powder Premixes Container Mixer



» Dosing of ingredients  
into the bin according to  
recipe



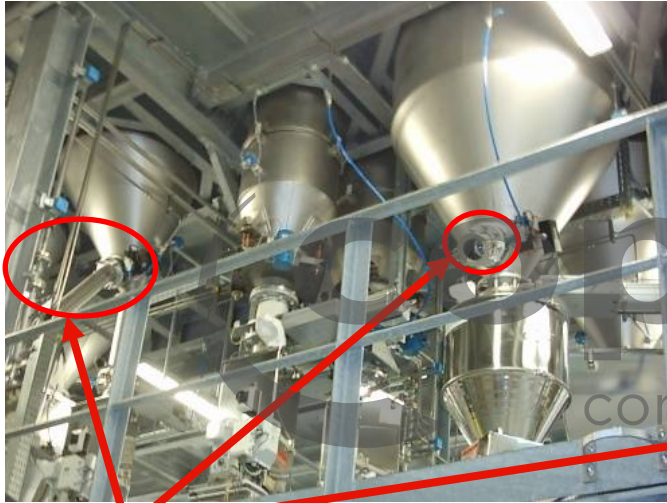
Courtesy MIXACO

# Powder Premixes Process Flow

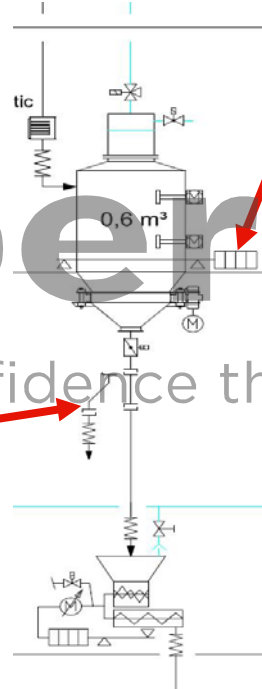


# Fast Product Change-over

## Minimize Residuals and Enable Fast Emptying

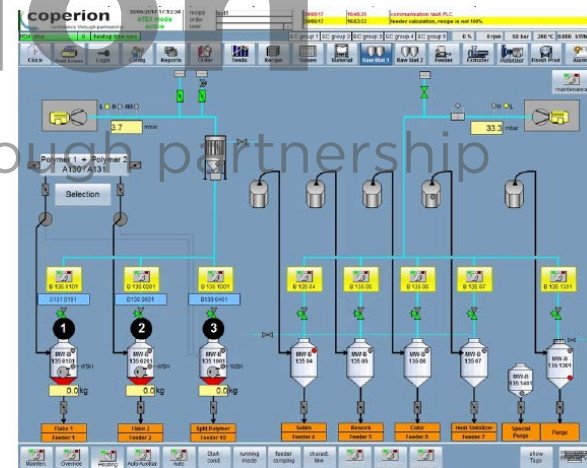


Quick-opening secondary discharge to speed up hopper unloading at change-over



Receiving hopper on load cells:

- reduce remaining material for product change over
- link with intelligent control system



# Fast Product Change-over

## Loss-in-weight Feeders: Easy Access and Quick Exchange



### Swiveling table

- quick horizontal and vertical movement
- easy access



### Quick exchange

- slide in and out

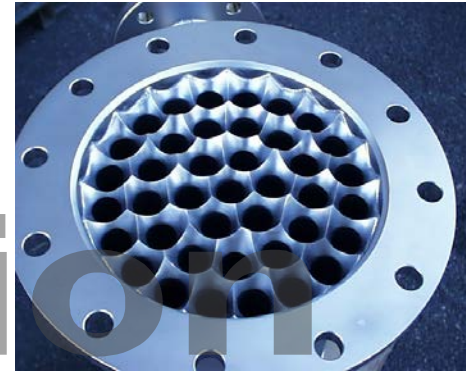
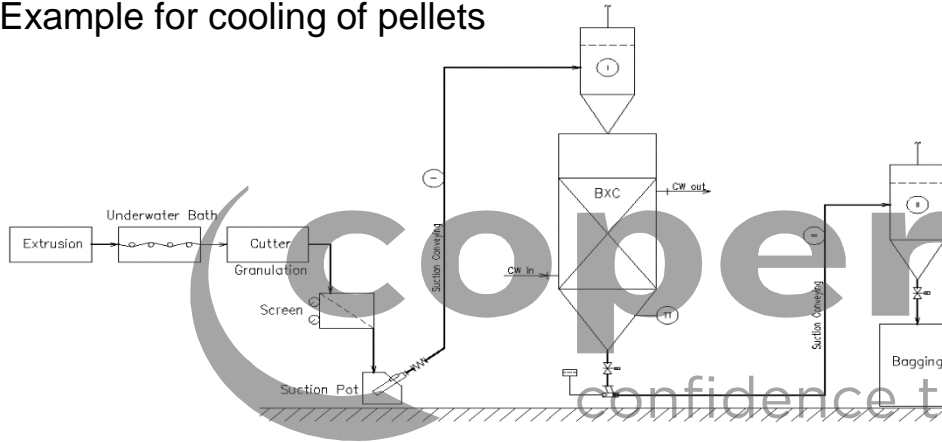
# Cooling or Heating of Powders and Pellets

## Bulk Materials Heat Exchanger BULK-X-CHANGE®

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Example for cooling of pellets

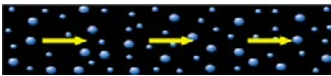
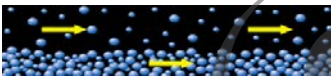
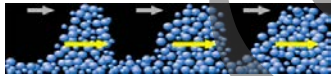





### Advantages compared to other solutions:

- » free positioning
- » closed system – no vapors, no noise emission
- » no product degradation
- » reduction of surface humidity possible

# Safe Conveying of Powders and Pellets

## Overview on Conveying Modes

Conveying mode	Characterised by	Products	Trade Name
 <p><b>Dilute-phase (lean phase)</b></p>	<p>High energy consumption High operational reliability</p>	<p>Wide product range</p>	<p><b>FLUIDLEAN®</b></p>
 <p><b>Dilute-phase (strand phase)</b></p>	<p>Low energy consumption Smaller pipe size</p>	<p>Free-flowing products (fluff, granules, pellets)</p>	<p><b>Fluidlift®</b></p>
 <p><b>Slow motion dense-phase (plug phase)</b></p>	<p>High load ratio Less dust and streamers Low wear</p>	<p>Pellets</p>	<p><b>CONTI-SCHUB®</b> <b>TAKT-SCHUB®</b></p>
 <p><b>Dense-phase (fluid phase)</b></p>	<p>Low energy consumption Smaller pipe size</p>	<p>Fluidisable powders</p>	<p><b>Super Dense®</b></p>
 <p><b>Dense-phase with internal bypass</b></p>	<p>Self-stabilising No obstruction</p>	<p>Powders with average fluidisation properties, finely-grained bulk material</p>	<p><b>FLUIDSTAT®</b></p>
 <p><b>Dense-phase with external bypass (plug phase)</b></p>	<p>No obstruction Gentle conveying</p>	<p>Non-fluidisable powders, fine to coarse bulk material</p>	<p><b>FLUID-SPLIT®</b></p>

# Safe Conveying of Powders and Pellets

## Reliable Conveying, Protection of Sensitive Products



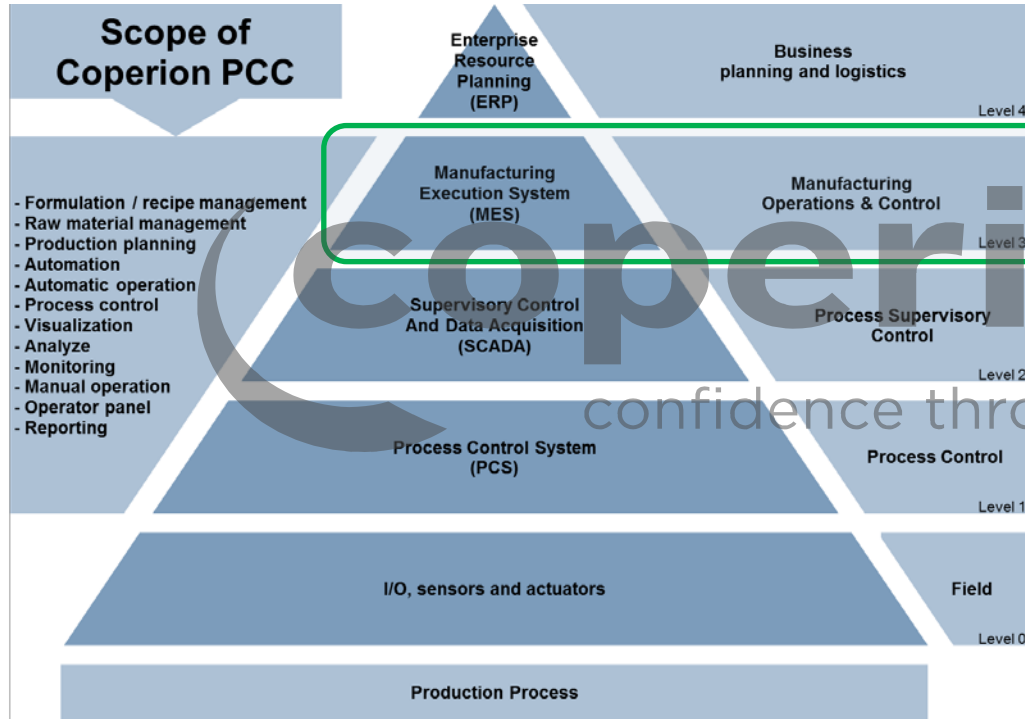
### Selection criteria:

- Product properties
- Conveyability
- Wear of conveying system
- Damage of sensitive products



# Monitoring and Controlling of Compounding Plants

## Coperion – Production Control Center (CPCC)



The scope of CPCC is:

- Manufacturing execution system (MES)
- Supervisory Control And Data Acquisition (SCADA)
- Process Control System (PCS)
- Machine and plant control (PLC)

The complete plant from  
one single source

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# Coperion Global Engineering & Procurement Network

## Globally Flexible Set-up for Multinational Projects



# Compounding Plants in Modular Design

## Pre-installation and Commissioning at Coperion Germany, China & USA

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# Compounding Plant in Middle East

## 2 Lines for PP Compound



# Compounding Plant in Middle East

## Bagging Silos and Blower Room



# Compounding Plant for PA/PBT in SEA

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# Experience from more than 150 Complete Lines since 2000

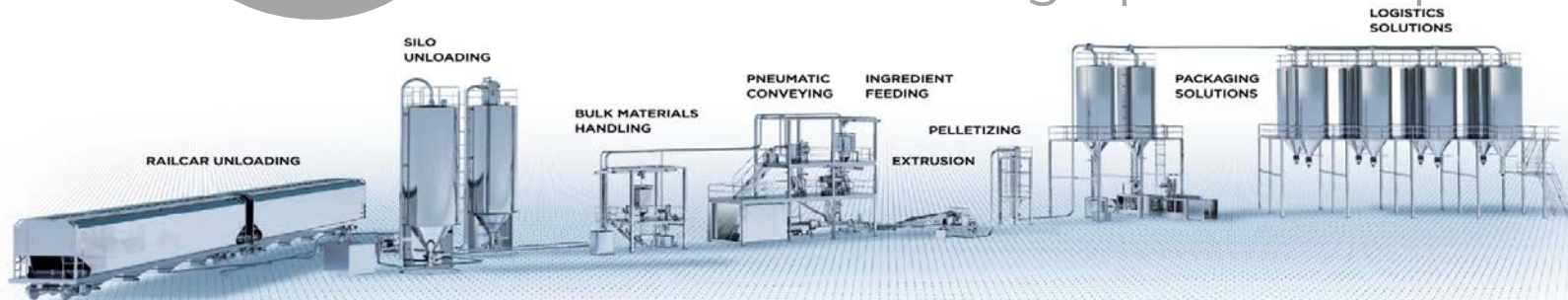


Coperion's globally unique feature is the unification of all supplies and services for the complete process chain under one roof:

## Raw Materials Handling – Feeding and Dosing – Compounding & Extrusion – Finished Product Handling – Bagging & Palletizing

This has decisive advantages for our customers when planning and erecting a compounding plant:

- ›› **one contact and project responsibility**
- ›› **a comprehensive, seamless technical concept**
- ›› **efficient and integrated installation & commissioning**





Thank you very much for your attention!



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