DOTECO
ART OF CONTROL

CHANGEOVER ACTIVE CONTROL

Intelligent materials management for
SMARTCONVEY loading systems

CAC software

What's about

- **C.A.C.** is an option available on conveying systems **SMART-CONVEY**
- **C.A.C.** is designed to:
  - ✓ **Meter the material loaded** in the dosing system
  - ✓ Calculate the **material needed for each dosing station**
  - ✓ Calculate the **number of loading cycles** which has been duly completed
  - ✓ **Inform the operator** when the material loaded in each single dosing station is enough to complete the set-up job order

CAC software

Scope of supply

- **C.A.C.** has the scope to:
  - ✓ Get the job order completed leaving the **lowest quantity of residual material in the hoppers**
  - ✓ **Reduce extremely the time** needed for material changeover and blenders cleaning
  - ✓ Reduce the material waste, **to save money and be environmentally friendly**
  - ✓ Minimize the loading cycles, **reducing energy consumption**
  - ✓ Minimize the loading cycles, **reducing the maintenance (filters cleaning)**

CAC software

How does it works

The **operator** has to set-up:

- **Job order amount or production batch** for each extruder (if gravimetric extrusion control is not supplied)
- The **percentage of each component**
- The **bulk density of each component**

The **C.A.C.** software then is capable to meter:

- the **actual quantity of material inside any hopper**
- the **actual quantity of material being used in each loading cycle**

For gravimetric hoppers, metering is performed in a gravimetric way.
For non-gravimetric hoppers and receivers, calculation is performed on a volumetric way

CAC software

How does it works

The **operator** must switch from **“scrap mode”** into **“production mode”**

The **C.A.C.** software then:

- starts metering the quantity of material needed to be loaded to complete the job order
- when the total quantity of material has been reached, gives a **warning to the operator**

The operator is just alerted ! … then he is free to take any suitable action

The operator can choose which individual component has to be metered by the **C.A.C.** system.

During the production process, the operator can freely change the layers percentage or layers density or layers receipt.
The **C.A.C.** software will calculate accordingly and just-in-time the up-to-date quantities of each component to be loaded.

Interface

HMI

Interface

HMI

HARDWARE

WBOX

- Panel mounted.
- Touch screen.
- Solid state hard disk.
- Panel Mount (7, 10, 15 or 21") or handheld device (7 or 10") available.

SOFTWARE

- Very intuitive user interface.
- Developed in HTML 5.0.
- Remote technical support included.
- Multi language.
- Access from remote.
- CJK characters supported (CN, JP, KR).
- Completely integrable with other DOTECO process control software.

CAC software

HMI

Production target (kg)

Production target for each layer (kg)

Individual set point (kg)

Individual current value (kg)

# of loading cycles done

# of remaining loading cycles

Material Specs Info:

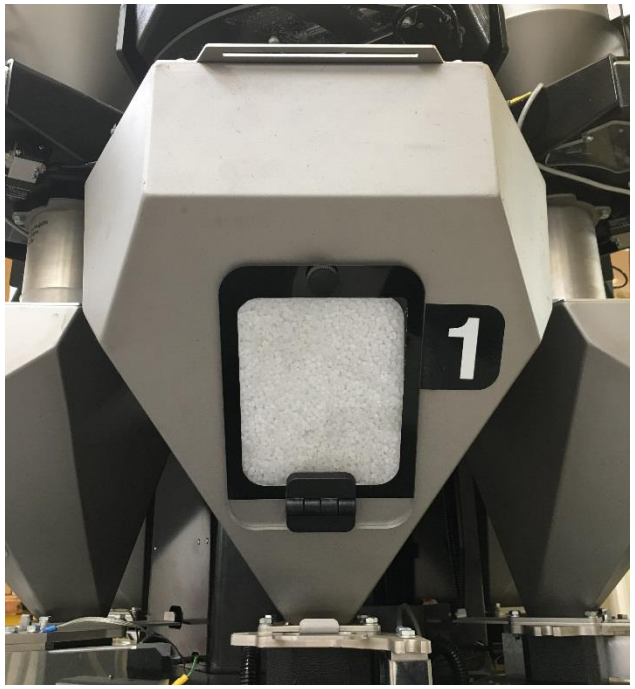
- **Bulk density kg/dm3**
- **Component ID.**

CAC software

Example of performances

Material left in the blending system (blender + loaders) at the end of a job order:

17,5 Kg = 180 seconds



Without C.A.C.

1,5 Kg = 13 seconds

With C.A.C.

3 main advantages of SMARTCONVEY

FEATURES	ADVANTAGES	BENEFITS
Integrated vacuum loading system, with centralized vacuum source	- Reduced footprint - Modularity in terms of number and type of receivers, number of blowers (ex. one for all or one for main and one for side components)	- Compact footprint for blenders and receivers allows more flexibility in the design of the extrusion line and more space for the operators (maintenance or repairing) - Possibility to add receivers in a second stage keeps your system up to date and with the possibility to be expanded according your needs (lifetime value investment)
Automatic management of the loading priority	- The system decides in autonomy which are the components to load first in case of multiple callings - More loading efficiency without increasing the size of the pump	- Elimination of the risk to run empty - Energy saving, reduced footprint, less noise
CAC option (Charge Active Control)	- SMARTCONVEY calculates the material consumption necessary to complete the production lot, minimizing the residual material in the hoppers	- Minimized changeover time - Material saving - Environment friendly