

COOL AND DRY!

Geelen Counterflow®

CLEAN AND LEAN!

New!  
For the highest  
standards in  
Food Safety



GEELLEN COUNTERFLOW

VD..x..T.

## BATCH DRYER MkIII

The Batch Dryer operates by forcing hot air through 5 to 10 product beds. New product is continuously fed to the top bed deck which transforms the continuous flow into a series of batches.

Discharging from each bed deck is timer driven and powered by hydraulic cylinders. Discharging starts at the lowest deck and sequentially moves through the upper decks to assure there can be no product cross contamination.

Every product batch is treated individually in separated drying zones. The amount of evaporation can be controlled on each deck by variations of the drying air volume and temperature. A moisture sensor at the dryer outlet can serve as an input for the heater temperature setpoint to improve final product moisture control.

A controlled volume of drying air is exhausted with a high relative humidity while the remaining air is recycled back to the heaters. This maximizes the energy efficiency of the Geelen Counterflow dryer.

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# BATCH DRYER MkIII



### Energy efficiency

- The dryer is the largest energy consumer in most processes. When compared to the best horizontal dryers the Geelen Counterflow dryer has been shown to be at least 15-25% more energy efficient. Operators can monitor the energy performance using an on-line energy efficiency indicator. Exhaust air is controlled by an RH sensor to assure the maximum amount of moisture is removed using the minimum amount of air.

### Moisture uniformity

- In order to get all the product dried to the target moisture you need a dryer technology that provides excellent moisture uniformity. Geelen Counterflow dryers can be configured to achieve the best possible moisture uniformity.

### Moisture uniformity over time

- Even a dryer with perfect air flow design can't provide a controllable discharge moisture if the dryer process inputs for ambient air, product flow or product moisture are constantly changing. By incorporating an on-line microwave moisture sensor the Geelen Counterflow dryer can be automated to assure the target product moisture is achieved under all process conditions.

### Food safety & product quality

- There is nothing like the power of gravity flow to keep a dryer clean. The gravity driven discharging has an inherent "self-cleaning" benefit. Gravity flow eliminates the need for belts, cogs, chains and drives associated with horizontal dryers.
- Doors on each deck provide easy inspection and cleaning of the product contact surfaces, needed for documenting the equipment complies with your process food safety/quality standards.
- Most cleaning and maintenance access can be done without entering the equipment.
- A very limited number of moving parts in the product contact areas assures a low risk of contamination from equipment parts wear or failure.

### Change-over times

- The batch flow allows changing to a new product without losing any time and without cross contamination.

### Wide range of product sizes

- Geelen provides a number of deck perforation designs to handle a wide variety of product shapes and sizes.

### Pre-cooling

- For applications requiring product discharge temperature control for downstream processes, like coating, a pre-cooling deck can be added to the dryer.

### Maintenance costs

- Thanks to the low number of moving parts the downtime-, maintenance- and spare parts usage costs for a Geelen Counterflow dryer are significantly lower than for a horizontal dryer.

### Process safety

- 30 years of research and development have cumulated in an extensive list of design optimisations and control system procedures aimed at minimising the risks of fire, explosions or other hazards for operators. Sensors enable the PLC to trigger alarms and if necessary eventually shut down burners/heaters or the entire dryer.
- Some of the above mentioned features may be optional.

