

DON'T GO WITH THE FLOW!

Geelen Counterflow[®]

**world's highest efficiency
world's lowest downtime**



GEELLEN COUNTERFLOW

VD..x..T.

BATCH DRYER

The Batch Dryer operates by sucking hot air through 5 to 10 product beds. New product is continuously fed in through the inlet valve to the top deck which transforms the continuous flow into a series of batches. Discharging is driven by timers and powered by multiple hydraulic cylinders and a single hydraulic power pack. Discharging starts at the lowest deck such that no cross contamination can take place.

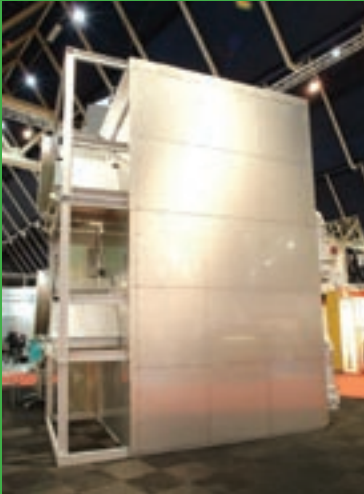
Every product batch is treated individually in separate drying zones. The amount of evaporation can be controlled per deck through variation of drying air volume and temperature. A moisture sensor in the hopper can serve as input for setting burner temperatures.

Dryer air is partially recirculated back into the heater for maximum energy efficiency and only a limited volume of air is exhausted, at a high relative humidity.



COOL AND DRY!

BATCH DRYER



Energy efficiency

The dryer is the largest consumer of energy in most processes. Employing the latest counterflow technology to replace an existing horizontal dryer you can save up to 50% on energy costs. Compared to the best horizontal dryers with recirculation, Geelen dryers save 15-25% on energy costs. Low cost horizontal dryers without air recirculation, consume up to 100% more energy. Operators can check on-line the energy efficiency of the current drying profile.

Moisture uniformity

In order to get all product dried as close as possible to the acceptable maximum you need a dryer with a high moisture uniformity. Modern counterflow dryers can be configured for drying to a standard deviation of 0.25%.

Moisture uniformity over time

Even a dryer with perfect air flow design does not provide you with perfect results, unless it is capable of reacting automatically to changes in circumstances, such as temperature and humidity of the air, product flow rate and moisture % of wet product. Using on-line microwave moisture sensors, we can make sure the target moisture % is automatically achieved, under all circumstances.

Change-over times

The batch flow allows the operators to change to a new product without losing any time at the dryer.

Small product sizes

The counterflow decks are perfectly suitable for drying and cooling of product down to 0,8mm diameter. The air speed through the decks' perforations ensures that they will not leak down to the next stage.

Sanitation

There is nothing like gravity to make sure a dryer or cooler can be designed as clean and simple as possible. No gearboxes, chains, conveyors, belts or ledges. Just the hydraulically driven drying decks which release all product to the next stage.

All Geelen Counterflow dryers are built in double walled stainless steel, with fire resistant insulation material in between the inner and outer walls.

Maintenance costs

Maintenance costs for a Geelen Counterflow dryer are only a little higher than for a Geelen Counterflow cooler and significantly lower than for a horizontal dryer. 95% of all preventative maintenance can be done from the outside, minimising downtime.

Safety

25 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. A network of sensors and signals enables the PLC to trigger alarms if necessary, which eventually escalate to the shut down of burners/heaters, or the entire dryer.

Some of the above mentioned features may be optional