‘At least 24% lower energy consumption than alternatives’

Counterflow Dryers

Counterflow is not only the most efficient method to transfer heat, but also moisture. When combined with the recovery and re-use of energy from the cooler and the lower dryer decks, this means that counterflow dryers can achieve energy savings of at least 24% (*), when compared to best available alternatives. When replacing existing dryers, savings of up to 50% have been achieved. For most extruded petfood or aquafeed the energy requirement for drying is below 2600 kJ per liter of evaporated water.

Vertical compact design means lowest required floor space for installation. Gravity flow instead of mechanical product transport guarantees low complexity, low maintenance, high up-time and smallest possible risk of cross contamination.

Accurate control of drying time and drying air volume, temperature and relative humidity assures the best moisture uniformity and unmatched energy efficiency. Advanced PLC controls enable a fully automated process, supported by drying recipes for every individual product.

With every dryer we install we include a 10 year service agreement which ensures continued safety and efficiency of the equipment through scheduled inspection visits by our service engineers.

* René P.J.M. Houben, Marcel A.M. Geboers, Piet J.A.M. Kerkhof , (2011), Performance of two industrial dryers for Fish Feed, Drying Technology, 29:12, 1472-1480

‘An additional 65% reduction in energy consumption’

Counterflow Electric Dryers

The Geelen Counterflow Electric Dryer is what our Counterflow Innovation Centre has worked on since 2014. Following a year of 1:8 scale testing in a commercial petfood factory, the Electric Dryer was introduced to the market in 2018.

It uses high temperature industrial heat pumps with counterflow heat exchangers to condense the moisture in the dryer’s exhaust air and recover most of the energy and water that would normally be discharged to ambient. This reduces net energy consumption of the drying process by another 65% compared to counterflow dryers on gas or steam. For most extruded petfood or aquafeed, the energy requirement for drying can therefore be reduced to less than 1000 kJ per liter of evaporated water.

Optionally, hybrid air systems with both heat pumps and gas burners can be employed for maximum flexibility. The air/water heat exchanger employs CIP (Cleaning in Place) systems to stay clean.

The modular design of the hybrid air system allows a producer to install heat pump technology step by step, keeping all options open for drying with gas only, electricity only or a mixture of the two.

Please check out “Geelen Counterflow Electric Dryer” on Youtube for an animated explanation.

Applications

aquafeed

Extruded aquatic feeds, all sizes and each buoyancy, pelleted shrimpfeed, etc.

food

Breakfast cereals, coffee beans, almonds & nuts, couscous, chocolate, etc.

feed

Pelleted, extruded, expanded, flaked, conditioned mash, etc.

petfood

Dry petfood kibbles, high protein-, high meat petfood, co-extruded pockets, etc.

oil seeds

Soya, rapeseed, sunflower seed, collets, meal, pellets, cake, etc.