

BEST DEWATERING AND DRYING TECHNOLOGY FOR CORN PROCESSING PLANTS

VETTERTEC FLASH DRYER FOR CORN STARCH

A number of different flash dryer designs are available in order to meet the different demands for drying of native and the broad variety of modified starches. The working principle of this dryer is pure convection with a minimized retention time. The main components of the dryer are the sling feeder, the drying column, cyclone system, fan and further equipped with other features depending on design requirements.



VETTERTEC TUBE BUNDLE DRYER FOR CORN GLUTEN MEAL, CORN GERM AND CORN FEED

The tube bundle dryer uses steam for the drying process and works indirectly as a combined contact and convection dryer. This drying principle is very gentle to the product and safe in terms of explosion and fires. At the same time the amount of air in the vapour is very low and potentially a high percentage of the drying energy can be re-covered by re-use in boundary processes, e.g. the CSL evaporator (energy integration).



VETTERTEC FLUID BED DRYER FOR CORN GERM

The fluid bed dryer is a static convection dryer, in which the product is being dried in a fluidised bed. This bed is being built up by blowing hot air through a bed plate on which the product is, the air together with the product builds the fluid bed. At the end of the fluid bed cold, resp. ambient air, can be used to cool the product. Through the drying process there is no mechanical impact on the product, thus the particles remain the size as they have at the entry.



VETTERTEC SPRAY DRYER FOR VARIOUS PRODUCTS

If the starches are further processed and liquid streams as malto-dextrin, lysine, etc. are to be dried, VetterTec offers a spray dryer. Spray dryers are pure convection dryers and atomize the liquid product at the product inlet. A number of different designs with integral fluid bed, external fluid bed, different air outlets, different chambers, etc. are available to provide the desired particle size and moisture content of the final product.

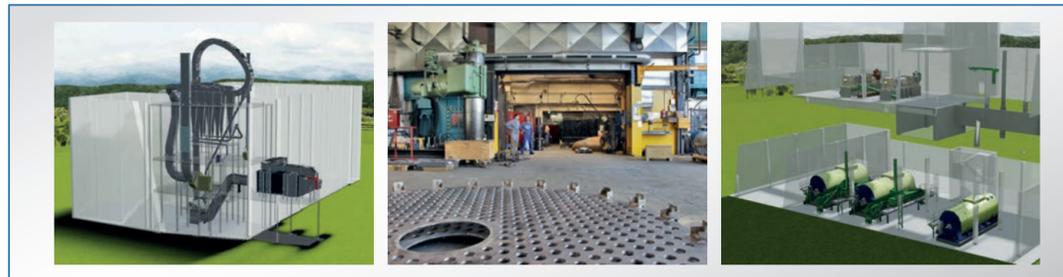


DRIVEN BY COMPETENCE

VetterTec has more than 90 years of specialization and experience in evaporation, drying and dewatering equipment for the starch, ethanol/alcohol, brewery, environmental, chemical and food industries.

- ✓ VetterTec has **experience** with the **majority of dryer and evaporator types** and can select the optimum technology from self-owned technologies without any preference.
- ✓ VetterTec has a **broad product expertise** in a wide range of industries.
- ✓ VetterTec solutions combine **energy efficiency** with the highest product quality.

- ✓ VetterTec can offer optimised, **integrated drying solutions** with best energy recovery.
- ✓ VetterTec supplies **reliable and proven technologies** for a highly secured capital investment and best ROI.
- ✓ VetterTec operates worldwide and has **experience in many other industries** such as
 - ✓ Wheat Starch Industries
 - ✓ Fuel Ethanol Industries
 - ✓ Alcohol Industries
 - ✓ Brewery Industries
 - ✓ Oil Extraction Industries
 - ✓ Chemical Industries
 - ✓ Food Industries



ACHIEVING SUSTAINABLE SUCCESS

PARTS AND SERVICES

Our commitment doesn't stop after successful production startup. VetterTec is offering to continue the close relationship with the customer to ensure an optimized life cycle in terms of cost and performance.

- ✓ Plant Performance Optimization
- ✓ Troubleshooting
- ✓ Training and Seminars
- ✓ Plant Retrofitting
- ✓ Preventive Maintenance
- ✓ Spare Part Service/After Sales

PROVEN SYSTEMS

As you will find all dewatering and drying technologies for the corn processing industries in the product portfolio of VetterTec, we are able to integrate or combine these technologies in order to serve single point responsibility and optimised solutions in terms of optimal product quality and minimised energy consumption. All our systems will be designed individually, so feel free to contact our experts.

EXPECT MORE – CUSTOMIZED DRYING SOLUTIONS

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CORN WET MILLING



Perfectly adapted to your individual requirements



successful drying systems

CORN WET MILLING

Corn is cultivated worldwide and is one of the most produced cereals besides wheat and rice. Apart from the fact that corn can be used as animal feed, it can also be processed into its ingredients like starch, corn gluten, corn oil, corn feed, corn germ and special products (by-products).

For the processing of the corn into its different ingredients, the wet milling process is most common. In this process the corn will be processed through a number of process steps mainly the cleaning, the steeping, the milling and separation, the fine grinding and screening, the separation of starch and gluten. Further on the starch can be either dried as starch or further processed to syrup and finally to dextrose, maltodextrin or amino acids.

As the entire process will be done under wet conditions, at the end of the process this water needs to be removed. Here VetterTec offers the entire range of mechanical dewatering and all type of dryers necessary to dry the desired products. On the bases of our broad product portfolio we can offer for some products as germ and gluten different technologies. Depending on customers' needs and focus VetterTec is able to select the best fitting technology without any preference.

Drying of products consumes a significant amount of the total energy for the process. Thus cost efficient drying is essential for a profitable operation of the plant.

VetterTec offers all drying technologies for this application and acts as a strategic development partner, a system supplier or equipment supplier for this industry globally. A partnership with VetterTec secures the sum of expertise and technologies of world-class specialists in drying, and therefore a profitable operation of the plant.

"A LARGE NUMBER OF HIGHLY EFFICIENT, PROVEN AND RELIABLE INSTALLATIONS IN MANY WET PROCESSING PLANTS ARE OPERATING AROUND THE WORLD."

VETTERTEC RING DRYER



- ✓ Short retention time
- ✓ Small footprint
- ✓ Internal and external recycling
- ✓ Cold disintegrator

VETTERTEC SCREW PRESS



- ✓ Pre-dewatering of corn germ
- ✓ Prior to the drying section
- ✓ Minimizing drying energy
- ✓ Robust design
- ✓ Continuous operating

VETTERTEC TUBE BUNDLE DRYER



- ✓ Indirect heating by saturated steam
- ✓ Low drying temperatures
- ✓ High efficient because of minimized air utilized = high potential for energy recovery
- ✓ Small footprint

VETTERTEC FLASH DRYER



- ✓ Simple economic design
- ✓ Shortest residence time
- ✓ Small footprint
- ✓ Four different designs available

VETTERTEC FLUID BED DRYER



- ✓ Use of low temperature: heat like warm water and air below 100°C
- ✓ No degradation reaction
- ✓ Controlled air velocities
- ✓ No mechanical impact on the product

VETTERTEC SPRAY DRYER



- ✓ Low powder temperature drying
- ✓ Controlled particle size
- ✓ Centrifugal and nozzle atomisers
- ✓ Internal and external fluid beds



CORN STARCH CORN GLUTEN LYSINE AMINO ACIDS CORN MEAL CORN GERM

VETTERTEC ADVANTAGE

What you get:

- ✓ All technologies are group designed and manufactured
- ✓ Best technology well selected for your application
- ✓ Highly reliable systems with a long life expectancy
- ✓ High thermal efficiency, optional with heat recovery
- ✓ Optimised and integrated drying processes, including air emission reduction and control
- ✓ Cost effective solutions

BEST DEWATERING AND DRYING TECHNOLOGY

For the corn wet milling plants VetterTec offers the complete range of dryers comprising:

VETTERTEC RING DRYER FOR CORN GLUTEN MEAL

The dryer design is so called a ring dryer with cold disintegrator; its working principle is pure convection with lowest retention time to achieve a light yellow product colour. The dryer mainly consists of a disintegrator, the drying duct and bend, the manifold, adjustable blades, an external recycling system, a filter and fan.



VETTERTEC SCREW PRESS FOR WET CORN FIBRE AND WET CORN GERM



The VetterTec screw press is used to pre-dewater corn germ and corn fibre in front of the dryer. In all our screw presses the screw, screen and cage are precisely machined together. The entire mechanical design is very strong. Both, the machining and design, is ensuring best and constant pre-dewatering results and minimizes the energy demand in the dryer.

