



Hygiene
Cleanability
Performance
Heat Recovery

The New Belt Drying System from Rosenqvists Food Technologies

At Rosenqvists Food Technologies, we believe the drying process can be optimized further and therefore, we introduce a new belt drying system. After a full review of our own classic belt dryer and market demands, we are ready to take the drying technology to the next level. The focus for our design team has been on hygiene and energy efficiency. In this article, we present the most important improvements with the new drying system.

Improvements – in summary

The new belt drying system is a modular system offering you maximum flexibility and control. We can offer width up to four meters wide belts. Each module is controlled individually allowing you to control drying recipes completely. All heating coils – using water or steam – are located outside the product zone and are easily accessible for maintenance. The belt dryer is offered with a fully integrated CIP-system. With the latest design changes for improved hygiene, we feel confident cleaning is made easier and we have greatly reduced the risk of any bacterial growth.

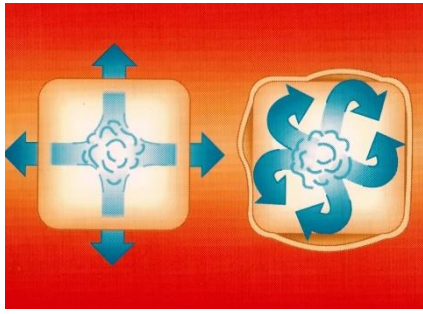
Drying is the largest cost factor in your French Fries processing line. For this reason and for sustainable ecosystem, the new belt drying system is ready to heat with hot water driven coils. With the heat recovery system utilizing the vapors from your frying system, you can harvest up to 85% of the energy from the fryers to run the drying system and other systems in your production.

Why dry French Fries?

For the perfect French Fry, there are several benefits in using drying systems connected with product characteristics and production economy. Applying a gentle drying technique with the appropriate temperature and time will produce a French fry with improved texture, palatability and a uniform colour. Oil quality is preserved thanks to less degradation of oil. The oil pick-up by the product will also be reduced somewhat thanks to the drying process. Finally, with the new drying system and a correct process control for drying, you will be able to save energy required in your French Fry production line.

The three steps of the drying process are:

1. Evaporation of water from the French Fry
2. Vapor is carried away by the air
3. Moisture diffuses to the surface of the French Fry to replace evaporated water



To manage the drying process, we need a system that can control the humidity of the air, the air flow and the temperature. In the new belt drying system from Rosenqvists Food Technologies, we have mastered this to perfection.

Design improvements in the new belt drying system

The complete re-design of the belt dryer has secured some important features for improved hygiene and cleanability. All surfaces inside the dryer are sloped to one drainage point ensuring removal of water inside. Welding and details are specially designed for optimal hygiene with minimum risk of bacteria growth. Non-sticking side blocks can be rotated for inspection after cleaning. We have made sure that the cleaning program can reach behind side blocks and other parts of the dryer. The support strips for the belt are replaced easily. The eye-link belt is continuously cleaned by high-pressure nozzles to remove debris.

All heating coils are located outside the product zone achieving a clean passage for the product where the only focus is humidity, air flow and desired temperature. The coils can be accessed easily for maintenance purposes. Standard options to run the heat exchangers with hot water or alternatively steam is available. The option of using hot water will require a lower drying temperature and consequently a larger drying surface. On the other hand, hot water heat exchangers offer exciting opportunities for heat recovery. Long-term, this can be a profitable investment.

Heat recovery from the frying system

Energy costs is an important factor to control when producing French Fries. Removing so much water in the drying and frying step requires energy, this is a physical fact. Considering the environmental challenges of today and the energy prices, re-using energy from the processing line will be an even more important goal in the green factory. There are cost savings to be achieved and a carbon footprint to be minimized.

For the purpose of heat recovery, Rosenqvists Food Technologies introduces a complete system for re-using the energy from the frying systems. A condenser is installed turning the hot fryer vapors into hot water. The hot water can then be used to run the drying system, blanchers and/or other systems you need hot water for in your plant. Pay-back time for the heat recovery system depends on the energy prices you experience. You can expect a return of investment in one to two years.

Introducing the new belt drying system

With the introduction of the new belt drying system, Rosenqvists Food Technologies can offer a full range of drying modules for capacities ranging from 2 tons per hour up to 25 tons per hour. The system can be driven by hot water or steam and is easily expanded with additional modules. The hygienic design and control of humidity, air flow and temperature in each individual module offers improved functionality. By adding a heat recovery system backing up your drying system, significant cost savings can also be realized.

