



# Why Invest in Vacuum Frying and Drying Technology

**Your  
New  
Product  
Will Be:**

- ✓ Nutritious
- ✓ Economical
- ✓ Delicious
- ✓ In demand
- ✓ Innovative



## Features of Atmospheric Fryers

Classical atmospheric fryers are used in the food industry to produce a wide assortment of foods. Those fryers are installed in continuous, automatic lines for mass production of snacks.

Products are lowered into boiling oil and cooked at high temperatures. During such processing, besides the cooking itself, the product is dehydrated, oil is absorbed by the product, and the product forms a crust.

In those fryers, frying is carried out at high temperatures of up to 180°C, products are brought to the ready, saturated in oil, and take on a crunchy quality – these are indispensable attributes of fried foods. However, this form of processing brings a number of downsides which lower the quality of the final result:

- High oil content, up to 40%
- The surface of the product is blackened
- Carcinogens form
- The oil turns rancid, taking on a certain smell and unpleasant taste
- The nutrients in the product are eliminated, the product loses its color and taste
- The product gains a high level of acrylamide, which forms at temperatures over 134°C

**One should also consider the economic downsides of atmospheric fryers:**

- High energy demands
- Frequent replacement of used oil

Due to the proven link between food consumption and human health, consumers are now carefully choosing what they eat and often preferring healthy foods. One aspect of products that concern buyers is a high fat (lipid) content. Products with a high lipid content are linked to a number of health problems and can cause such diseases as:

- Obesity
- Risk of cancer
- Risk of type-2 diabetes
- High probability of health disease

To make **modern industrial fryers**, technologies are being used that lower the risks to human health. For example, better oil-filtration systems are used to extend oil life. However, this is not enough to avoid all problems associated with high-temperature frying.





## Why Vacuum Fryers Are Better

Vacuum fryers are an alternative means of producing snacks, using low pressure and low temperatures. It has been proven that **vacuum-processing makes snacks healthier**. Frying by means of this technology can be described as a process of removing moisture and cooking food through contact with hot oil. However, **the oil does not enter into the product's open pores**, and therefore the resulting snack will have only a minimal oil content. Compare this with the 40% oil content of classical processing!

The low pressure at which processing is carried out in a vacuum fryer, **allows you to produce snacks at lower temperatures**, from 85°C to 120°C. Carcinogens do not form in the oil, the oil stays fresh longer, and oil consumption is lower than in atmospheric fryers. **When fried at low temperatures, the product maintains its natural color, taste, aroma, and nutrients**. Fruits and vegetables fried in a vacuum fryer are turned into healthy snacks that are rapidly gaining in popularity and becoming an alternative to traditional chips.

## Manufacturing of Vacuum Frying Equipment

Our company is the first to develop and manufacture vacuum frying and drying equipment on the European market.

Our vast practical experience, with many successful prior projects, allows our company to design and manufacture equipment for vacuum frying for any degree of output and for any product.

We have our own manufacturing base,

and therefore we can oversee the whole production cycle with the highest quality at all stages. Our company manufactures equipment for the entire cycle of producing foodstuffs, from washing to applying spices and packaging (in collaboration with companies manufacturing dosing and packaging equipment).

Normit is the unique manufacturer of vacuum fryers and dryers in Europe and your number-one partner in promoting food products for healthy eating.



# Advantages:

- Vacuum fryer brings you can be divided into two kinds: economic advantages, and quality ones.
- Allows you to make snacks with a high added value at lower electricity costs and other expenses compared to traditional frying, which puts the manufacturer ahead of the competition.
- Save on oil – the oil will stay fresh longer, it will not burn, it won't retain the taste of the last product fried, and it will not have to be replaced so frequently.
- Fewer flavor additives and taste enhancers
- A competitive product in the snack market:
- Lower oil content (only a few percent)
- Attractive color, close to the natural color, as the product does not darken and its surface does not blacken
- The oil does not turn rancid, and it will not give the product an unpleasant taste or smell
- Preservation of nutritional qualities
- No acrylamide or other carcinogens
- Fried vegetable snacks are highly suitable for giving to children who don't like vegetables.



# The Role of Vacuum in Producing Snacks

Vacuum drying and frying is **an alternative method of making high-quality fruit and vegetable chips**. Our professional staff's knowledge, experience, and expertise allow them to manufacture the very best equipment in this area.

The main details that determine a product's **quality are its structure, color, taste, and oil content**. Under vacuum processing, the product's structure is not harmed, as it is not subjected to mechanical action. Frying is carried out at low pressure, which lowers the temperature that the oil boils at. This allows you to **produce snacks at low temperature**, which makes the end result crunchy but preserves the natural color, taste, and nutritional properties.

The removal, by means of vacuum, of air and oil from the pores in the product brings a number of advantages. The lack of air in the snack's pores during processing lowers the time needed to prepare it, which boosts your output. Removal

of oil from pores after frying gives a high-quality finished product, with a minimal oil content

– compare this to the standard processing approach in an atmospheric fryer where the oil content can reach 30–40%.

The vacuum drying and frying technology developed by our company's experts, allows you to offer consumers a **healthier and delicious product**. This is especially relevant today for consumers who care about good nutrition.

An important detail to know about vacuum processing of chips and other snacks, is that **frying at low pressure** is carried out at low temperature and requires less oil. As a result, the snack that results will not contain acrylamide and other carcinogens. Retaining the **natural taste and color of fruit, vegetable, and other chips** lets you reduce the amount of taste enhancers and food coloring applied, or avoid using them at all.



VF 20



**Over 30 years** on the market in the food industry



**Over 500 projects** successfully carried out in Europe, the United States, and CIS countries



Your partner in supplying equipment that ensures **a high-quality end result, efficiently**



**A dialogue with professionals** – we maintain a responsible approach to understanding our customers' needs and supplying an expedient solution

## Our Company:

### Time-Proven Quality

The Production and Research Center for Vacuum Frying and Drying is a division of Normit, which has been manufacturing equipment for the food industry for over 30 years. We offer businesses high-quality and economical solutions. We're experts in this industry and guarantee reliability and attention to detail in working with clients.

Our engineers have vast practical experience in developing and designing equipment that meets the demands of today's marketplace. This approach to work gives our clients the opportunity to take a leading position in the food industry market.

## Our Research and Development Center

Our research and development center is the heart of our production. Here highly qualified engineers and technologists design the future of the food industry. Our research focuses on the following areas: developing new technologies, improving existing equipment, and studying eco-friendly solutions. Through decades of professional experience, our experts have honed their skills in providing solutions for customers.

The technical equipment that we produce is intended to have a long service life. This will allow you to optimize your resource consumption and shorten your manufacturing

time. The task of our center is to convert our customers' investment into a profitable production process.



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