

→ CRYOLINE® freezing and cooling solutions

THE LINDE GROUP

Linde

The precious moment of freshness.
Preserve it with CRYOLINE®.



The future of quality preservation. The CRYOLINE® family of freezers.

In modern food processing, cryogenic freezing and cooling has become a well-established technology to increase product quality. The CRYOLINE® family of freezers is taking this method to the next level by optimising efficiency and safety, while minimising cost of ownership. Furthermore, operational flexibility is enhanced and cleaning downtime as well as floor space are reduced. The CRYOLINE® family consists of a number of different types of freezers that cover a wide range of products – from baked goods, meat or fish products, pasta and vegetables to convenience foods. Thanks to a common design platform, many of our freezers can be easily customised and thus precisely meet individual requirements. Get the quality you and your customers deserve – preserve your food with CRYOLINE®.



Providing the basis for your success.

Efficient freezing for high-quality products.



Especially in the frozen food sector, people ask for better solutions almost every other day, and they expect the highest quality and the newest technology without having to sacrifice value. The CRYOLINE® family of freezers meets current customer demands and market needs with its highly efficient cryogen and airflow technologies. They provide maximum heat transfer rates and an optimum use of cryogenics, guaranteeing perfect product quality at all times.

The well-thought-out design of the CRYOLINE® cryogenic freezers is based on Linde's top-quality engineering and ensures adherence to legal requirements and industry-best-practice experiences regarding hygiene and traceability. The machines can be cleaned easily and quickly, achieving a high level of food safety.

Furthermore, all freezers are equipped with the best and most reliable technology, allowing for efficient handling, less downtime and lower costs.

Main benefits at a glance

Increased efficiency

- Optimum use of cryogenics
- Best-in-class technology (patented cryogen and airflow technologies)
- Increased capacity per hour and reduced footprint
- State-of-the-art design engineering from Linde and special CRYOLINE® warranty

High product quality

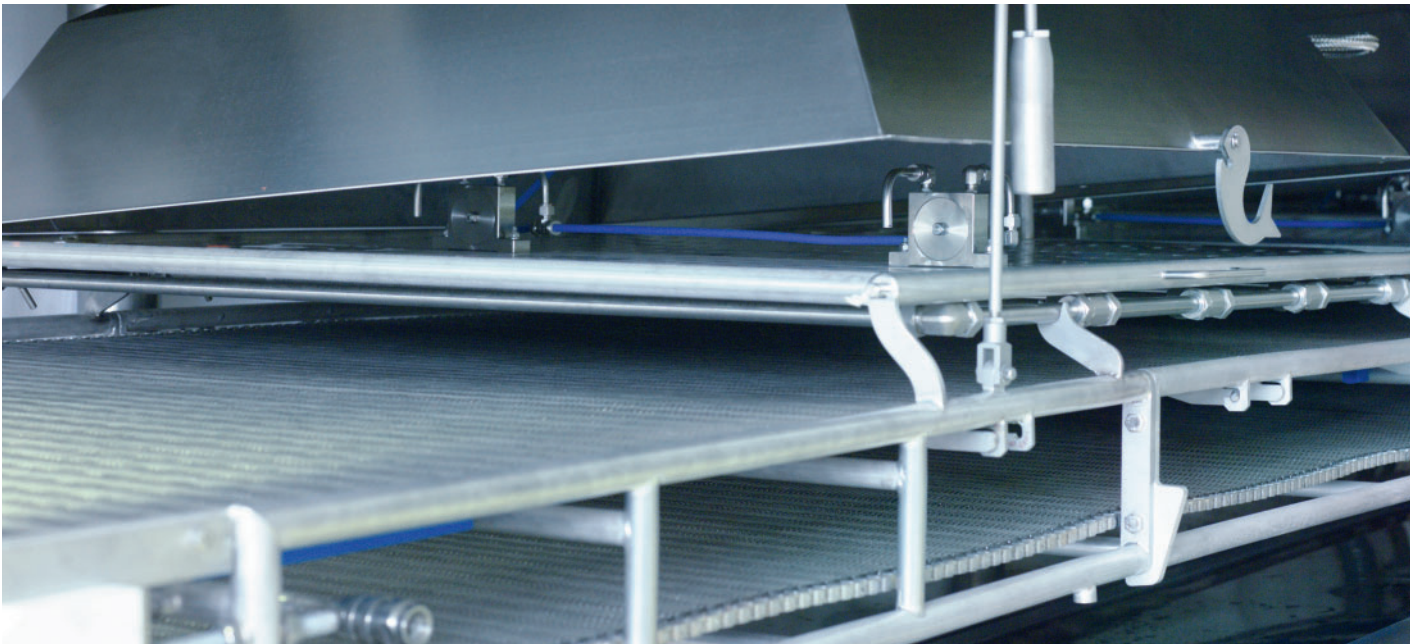
- Preservation of natural taste, texture and colour characteristics

- Retention of product weight (lower dehydration) leading to higher yield
- Less water loss when products are defrosted
- Improved product appearance
- Desired product size and shape

Hygienic design for easy cleaning

- Smooth welds
- Sloping floors
- Multiple access doors
- Lifting belt (modular tunnel freezers)
- Hygiene drain
- Durable and protected external components for full wash down

Staying competitive with flexible equipment. High tech for increased productivity.



The efficient cooling and freezing process provided by the high-performance CRYOLINE® freezers significantly increases output and product quality. This in turn enables you to develop new, attractive food products that put you one step ahead of your competition. Moreover, you can profit from a high degree of flexibility as you can choose from an extensive portfolio that opens up tremendous opportunities for your production.

Useability and traceability

All freezers provide user-friendly control and enhanced traceability. Standardised and confirmed daily transactions are stored in memory, so little or no manual adjustment of the settings is needed. This leads to reduced human errors as well as shortened start-up times and therefore increased productivity. Moreover, the system is calibrated automatically, reducing potential issues through regular self-diagnosis.

- PC-like interface
- Infrequent human interaction required for adjustment
- Storage of frequently used recipes or instructions
- Storage of transactions
- Self-diagnosis

Build your perfect freezer. Benefit from a universal platform.



Several CRYOLINE® freezers are based on a modular platform, which allows you to create your own individual freezer according to the building block principle, i.e. you start with a standard freezer and add optional components to meet your specific needs. Thanks to this platform, even complex requirements can be fulfilled quickly, reliably and cost-efficiently.

Customised solutions for individual specifications

We understand that customer needs for freezing are greatly varied, from requiring a freezer with a small footprint while achieving maximum output up to running multiple products and various production rates. With our comprehensive range, we can offer tailor-made and space-saving solutions for efficient food production, opening up the chance to develop niche capabilities and to enhance the flexibility of production regarding food types, production facilities and quantities.

Due to their high level of modularity, CRYOLINE® freezers can be adapted to your production to meet the following specifications:

- High IQF quality (reduced product sticking and clumping)
- Increased production rates
- High freezing or cooling capacity within a small space (footprint)
- Increased product yield
- Improved product quality

Our freezers are there when you need them. Short-term availability and quick delivery.

With the aid of an international freezer pool, Linde makes the CRYOLINE® freezers readily available for customers around the world. In this pool, the most popular models and common basic elements are stored so that a wide range of demands can be covered. Thanks to this capability, we can deliver and install freezers within just a few days, enabling you to avoid costly downtime or react to seasonal capacity increases.

High degree of flexibility for your production

In addition, we offer a rental service that gives you the possibility to pay for the use of machines instead of buying the complete equipment. When production has to be changed, our services can help you remain flexible so you can easily adapt budgets and investments to the current situation.

- “Off-the-shelf” availability of most standard models around the world
- Large selection of freezers

- Quick delivery, installation and start-up
- Most machines are delivered ready to use
- Start-up training for key personnel
- Rental and purchase schemes

Safety through reliability and warranty

A successful production is only possible with a reliable partner that provides customised services and professional support. Linde offers a variety of services and turnkey solutions to back up your production. From the time you are evaluating your options to the after-service requirements, Linde is your partner to help you deliver results and answers.

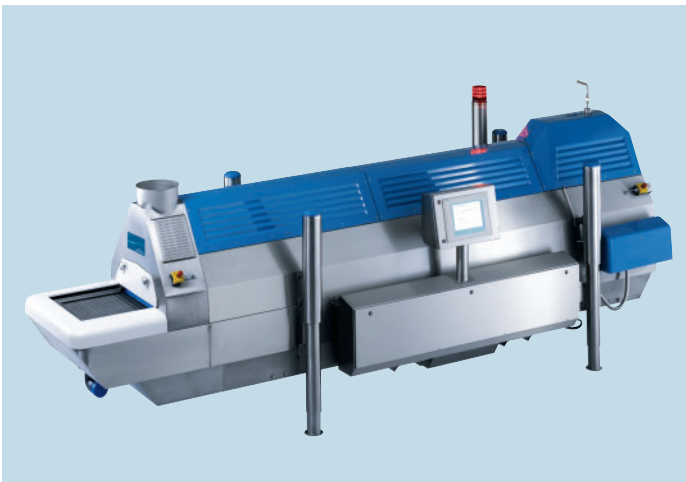
- Linde new equipment warranty
- Engineering design
- Technical troubleshooting
- Process optimisation
- Safety evaluation and educational training

As versatile as your products. The Linde CRYOLINE® family.



CRYOLINE®CF cabinet freezer

The CRYOLINE®CF is a cryogenic food cabinet freezer suitable for small-batch operations where food trolleys are manually loaded. It provides great flexibility for a variety of food products as well as short and long retention times. The freezer is available in several models and sizes and can operate with nitrogen or carbon dioxide.



CRYOLINE®MT tunnel freezer

The CRYOLINE®MT is an in-line continuous tunnel freezer, which uses either nitrogen or carbon dioxide depending on your food product and production needs. It is modular in design, enabling you to expand production by adding additional tunnels for a longer freezing production line. It is available in several models and belt widths with production rates of 200–2,500 kg/h (440–5,500 lb/h)*.



CRYOLINE®CW multi-purpose freezer

Easily switching between IQF mode and standard flat-belt tunnel freezer, the CRYOLINE®CW is a versatile multi-purpose cryogenic freezer. The CRYOWAVE controllable vibration technology allows adjustable product amplitude for optimisation of IQF foods, while also providing the ability to perform as a standard tunnel for many other food types of differing shapes and sizes. The freezer is available in various models with typical achievable production rates of 500–2,700 kg/h (1,100–6,000 lb/h)*.

* Depending on product and temperature requirements.

Any capacity, any product, any time. The Linde CRYOLINE® family.

CRYOLINE®CS compact spiral freezer

The CRYOLINE®CS is a cryogenic self-stacking spiral freezer. Providing a high production capacity within a small space, it is suitable for a wide range of food products. The CRYOLINE®CS is targeted at medium-volume customers with typical achievable production rates of 1,200–2,400 kg/h (2,600–5,300 lb/h)*.



CRYOLINE®XF high-performance spiral freezer

The CRYOLINE®XF is built for large capacities from 2,500 to 7,500 kg/h (5,500–16,500 lb/h)*. Its patented technology delivers twice the heat transfer rate of commercial spiral freezers, making it twice as powerful. The CRYOLINE®XF provides a smaller footprint, a higher production capacity, and is more efficient than standard cryogenic spiral freezers. It is suitable for high-temperature and high-moisture products, e.g. cooked poultry, seafood and prepared meals.



CRYOLINE®SI snap-on immersion freezer

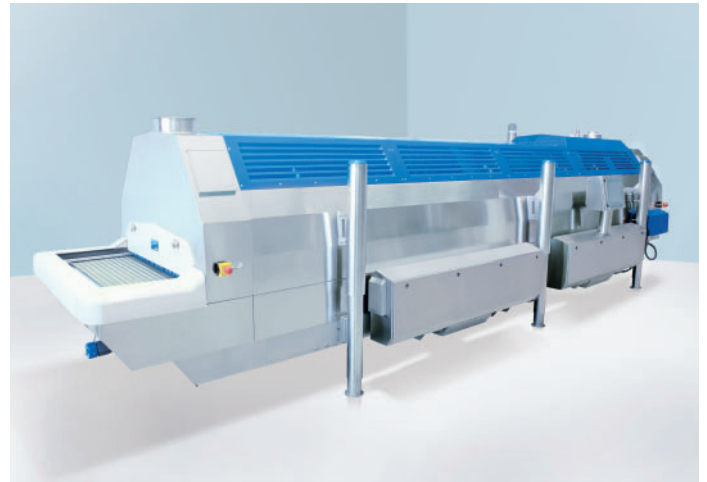
The CRYOLINE®SI is a nitrogen immersion freezer that conveys the food product through a nitrogen bath for quick IQF freezing. It is designed for high-volume IQF applications, such as cooked poultry, diced meats and prawns. Immersion freezers expose the product directly to liquid nitrogen to get a rapid crust-freeze to lock in product yield and reduce cooking losses. This ensures that there is little clumping and that products do not stick to each other or the conveyor belt.



* Depending on product and temperature requirements.

CRYOLINE®TI top-down impingement high-capacity freezer

The CRYOLINE®TI is a high-performance freezer utilising top-down impingement technology. This modular flat-belt freezer delivers more than twice the heat transfer rate of standard tunnel freezers and reduces the required footprint by 40%. Using nitrogen as cooling agent, the CRYOLINE®TI is suitable for a wide range of non-IQF products with a typical capacity range of 1,500–2,500 kg/h (3,300–5,500 lb/h)*.



CRYOLINE®PE pellet/moulded-shape freezer

This is the only cryogenic freezer designed to produce formed food shapes. Processors interested in portion control of frozen ingredients for sauces, purees, soups and other liquid food products can achieve weight proportioning and unique logo imprints. The CRYOLINE®PE is perfectly suited for processors servicing the food service and ready meals industries as well as consumer markets.



CRYOLINE®SC in-line tunnel freezer

For products which are difficult to handle, the CRYOLINE®SC in-line tunnel freezer uses a patented disposable foil belt. The unit can easily freeze or cool liquid and/or marinated products, or harden soft products (e.g. fillets of fish or chicken) prior to final freezing. Because the belt is disposable, it is possible to change products during the production cycle without having to clean the belt. Another advantage over mesh belts is that the foil is smooth, which is perfect for processing soft foodstuffs without belt marks.





Full assistance in every detail. Services for the food industry.

The food production of today has to face ever-growing expectations of customers, increased competition and rising safety and environmental standards. In order to keep pace with this change, you need a strong and reliable partner who keeps up with the latest developments and helps you save time and money.

Linde can support you with a variety of services that increase the safety at your workplace and ensure that you always use the best technology for your products. With our extensive global network of local experts and our global development department, we are able to assist you with our application know-how all over the world.

- Optimisation of freezing and cooling production lines
- System design engineering
- Optimisation of cryogen use
- Safety and engineering training

Take the right steps to success. We can help you to achieve it.

Our team of professional engineers and consultants will develop a perfect solution for you through a full audit of your requirements and, if necessary, trials at our testing centres.

Testing centres

In order to find the best freezer and the optimal cryogen, many parameters have to be considered, e.g. specification of the products, capacity, volumes, speeds, floor space, shift patterns and fluctuation of production, to name a few. These parameters can be tried at our special testing centres, which are capable of simulating realistic production conditions. The trials allow you to verify theoretical calculations and show the efficiency and capabilities of our refrigeration technology. Our testing centres, which can simulate your operation and product requirements, are conveniently available in most markets.

Professional support

Specially trained engineers are there to help you with every aspect of an installation, from the initial planning to the start-up phase. The key personnel will be trained intensively in the start-up so that the production can work at optimum performance from the beginning. But our service doesn't stop there: once the equipment is in operation, our engineers can service and – when necessary – optimise the whole installation. In addition, we can provide maintenance service and safety trainings to ensure a reliable production.

Get in touch with Linde

With many years of practical experience and highly qualified employees in the field of freezing and cooling, we help our customers in the food industry to increase the efficiency of their production process, to improve the quality of their products and to raise their profits. If you would like to know more about our freezing and cooling technology for the food industry, just contact your local Linde partner.

Getting ahead through innovation.

With its innovative concepts, Linde is playing a pioneering role in the global market. As a technology leader, it is our task to constantly raise the bar. Traditionally driven by entrepreneurship, we are working steadily on new high-quality products and innovative processes.

Linde offers more. We create added value, clearly discernible competitive advantages, and greater profitability. Each concept is tailored specifically to meet our customers' requirements – offering standardised as well as customised solutions. This applies to all industries and all companies regardless of their size.

If you want to keep pace with tomorrow's competition, you need a partner by your side for whom top quality, process optimisation, and enhanced productivity are part of daily business. However, we define partnership not merely as being there for you but being with you. After all, joint activities form the core of commercial success.

Linde – ideas become solutions.