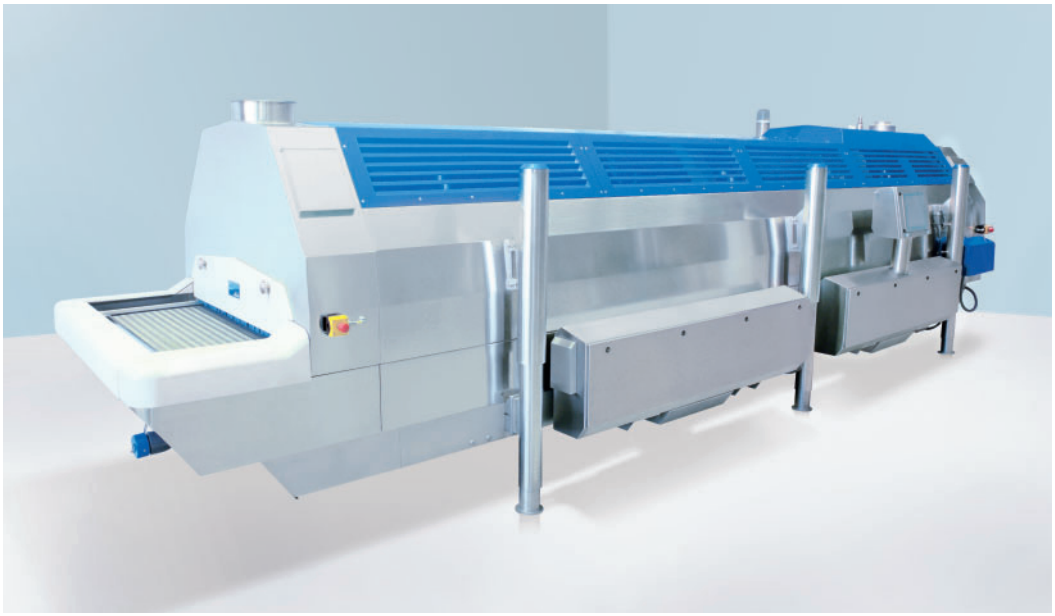
CRYOLINE®TI. Impingement freezer.



Concept

The CRYOLINE®TI is a powerful and economical cryogenic impingement freezer. This patented technology utilises not only cryogenic gases but also high-velocity convective airflow to achieve rapid chilling and freezing of food products. Combining cryogenic and impingement technologies, Linde has achieved heat transfer rates nearly twice that of traditional modular cryogenic freezers. The best-in-class heat transfer rates provide users with the option to either increase production capacity or to reduce overall required length, due to a smaller freezer footprint. The CRYOLINE®TI is suitable for a diverse range of food products, including meat protein, seafood, pasta, bakery products and prepared foods. The freezer is designed for medium to large production capacity (greater than 907 kg (2000 lbs)). The freezer is based on Linde's CRYOLINE® platform which is safe, accessible for fast and reliable sanitation, and can be expanded to satisfy growing production requirements.

Linde's industry-leading CRYOLINE®TI platform, combined with a patented technology, will rapidly freeze, seal in moisture, and reduce dehydration losses by up to five times that of mechanical methods and by up to three times that of conventional cryogenic freezers.

Refrigerant

The CRYOLINE®TI employs nitrogen as the cryogenic medium for an instant crust freeze that locks in natural flavours and moisture.

Operation

The CRYOLINE®TI freezer is designed to deliver a strong freezing impact within a small production space. Upon entry into the freezer, the food product is instantly crust-frozen with liquid nitrogen spray. The product is conveyed through the freezer on a customised stainless-steel belt and is exposed to a high-pressure cryogenic cold-gas flow. The centred-exhaust construction improves the overall cryogenic efficiency by reducing ingress of outside air. The CRYOLINE®TI uses powerful motorised blower-wheels and impingement plates instead of traditional fan blades to increase the static pressure and the overall velocity of the airflow. The patented design eliminates unsymmetrical freezer conditions. This ensures a consistent freezing quality from start to finish and from one location to the other.

The CRYOLINE®TI can be controlled via the built-in touch screen. The main menu displays the current product, motor speeds, safety status, machine messages, selected operational mode and the freezer temperature, and provides access to other screens and menus. In the event of a fault, the operator is given specific information about the cause of the fault in the message display area.

Recipes can be entered into the unit's computer by accessing the recipe screen, where the user can store and recall the operational parameters of all product types.

Hygiene

The simplicity of the design enables the customer to maximise the productivity by reducing cleaning and maintenance downtimes. CRYOLINE® freezers are designed for ease of sanitation, starting with the freezer's sloping floors and centre trough drainage. All internal components are made of stainless steel or polyethylene. Modules are fully welded, ground and finished. The freezer top lifts vertically via an electric screw jack, providing full access to the tunnel for sanitation. Control panels allow storage of up to one year's operating parameters for quality assurance tracking and traceability.

Model range

The CRYOLINE®TI is available in 1,250-mm belt width with a base freezer of 8 metres overall length. The freezer can be expanded by 3-metre sections to an overall length of up to 14 metres.

Standard configuration

The fully assembled and pre-tested freezer is delivered with the following features:

- Stainless-steel mesh belt
- Drive motor with variable-speed control
- Blowers/fans for gas movement
- Mounted HMI control panel, automatic gas supply controller and temperature readout
- Sandwich panels with polyurethane insulation as well as inner and outer stainless-steel facing
- Fully welded construction
- Liquid nitrogen spray manifold and exhaust system
- Emergency shutdown switches, flash-light warning system and safety lockouts
- Stand with adjustable feet, allowing ease of cleaning below the freezer

Options

Linde offers a belt washer as an optional addition to the CRYOLINE®TI freezer. The belt washer connects to the freezer at the product in-feed.

Technical data

CRYOLINE®TI

Voltage	360–500 V
Liquid connection type	25.4 mm NPT
Vapour connection type	6 mm
Exhaust system	
Number of connections	3
Diameter	2 at 300 mm, 1 at 150 mm
Belt washer connections	
Fitting size	25.4 mm FNPT
Belt	
Usable belt width	1,250 mm
In-feed height (top of belt)	900 mm ± 100 mm
Out-feed height (top of belt)	675 mm ± 100 mm
Product constraints	
Max. product height	50 mm
Freezer dimensions	
Height closed	2,190 mm (± 100 mm leg adjustment)
Height open	2,865 mm (± 100 mm leg adjustment)
Overall freezer width	2,180 mm

	Base unit		
Model name	CRYOLINE®TI 1250-8	CRYOLINE®TI 1250-11	CRYOLINE®TI 1250-14
Overall length	8,000 mm	11,000 mm	14,000 mm
Usable length	6,800 mm	9,800 mm	12,800 mm
Usable width	1,250 mm	1,250 mm	1,250 mm
Number of hoods	4	6	8
Freezer weight	3,000 kg	4,000 kg	5,000 kg

www.linde-gas.dk, www.linde-gas.ee, www.linde-gas.fi, www.linde-gas.is, www.linde-gas.lv, www.linde-gas.lt, www.linde-gas.no, www.linde-gas.se

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