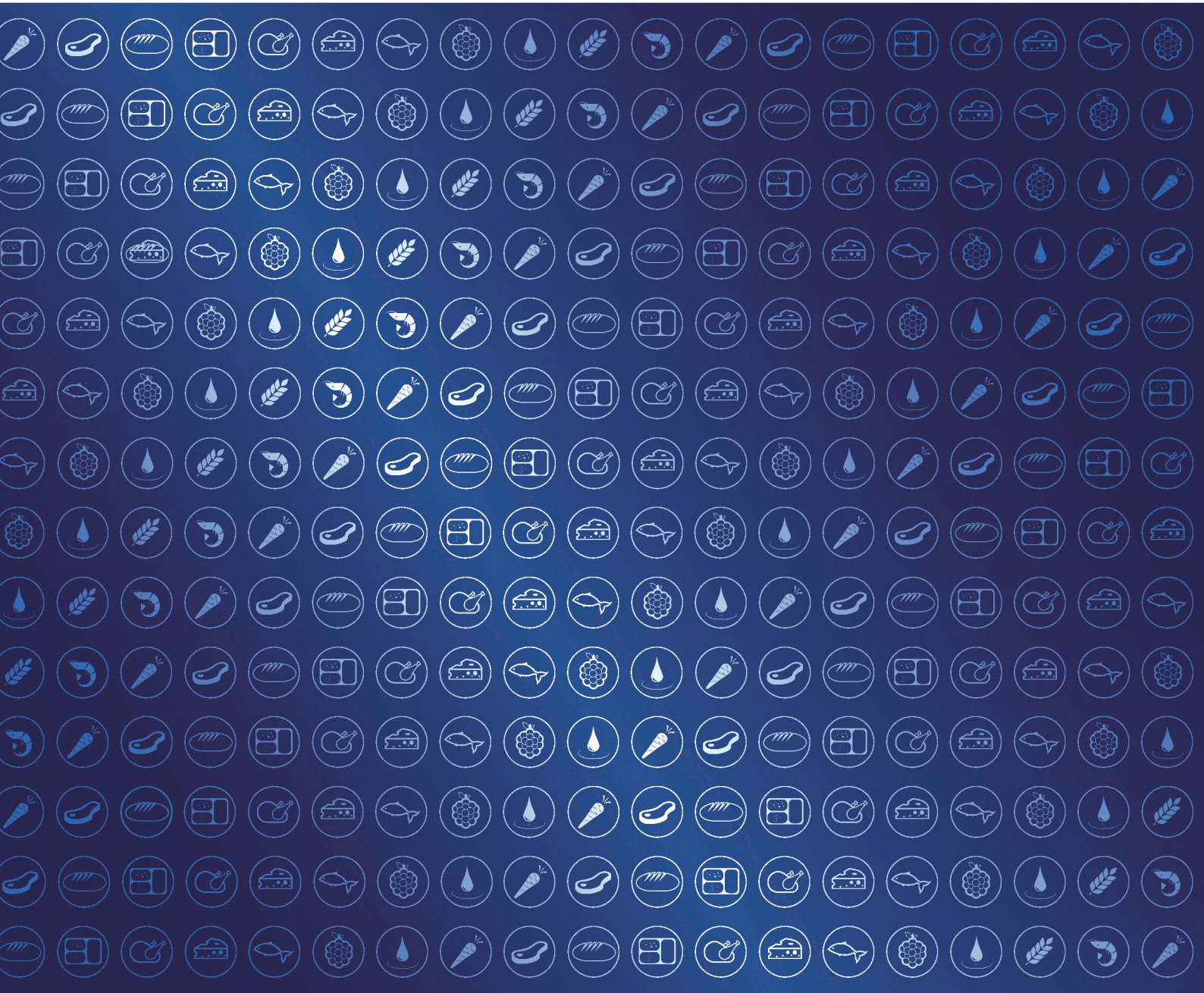


INNOVATIVE IQF SOLUTIONS FOR THE GLOBAL FOOD INDUSTRY





ABOUT OUR BUSINESS

Starfrost design, manufacture, install & service custom-built, industrial freezing and chilling systems for the global food processing industry.

A market leader since 1984, we have delivered bespoke IQF & Spiral systems across more than 57 countries.

Our focus is to work alongside food processors to develop cost effective and flexible systems that are tailor made to our customers' requirements. Our extensive knowledge and commitment to the industry ensures the most suitable freezing or chilling solution is delivered.

Our partnership with parent company Star Refrigeration enables us to deliver complete turnkey solutions, focused on energy saving and significantly reducing lifecycle costs for food manufacturers. Customer focus and innovation remains the key to our success as we continue to drive the business forward.

Our UK headquarters and manufacturing facility is based in Lowestoft, Suffolk, combined with partners across the globe.

As well as British, custom built manufacturing, we offer technical advice and services from our experienced engineers. Starfrost can assist with modification, maintenance and relocation of existing systems. We also provide expert guidance on site developments and improvements, such as increasing production capacity to extending run times of your processing line.

We are committed to our customers and passionate about the food processing industry.

**PERFORMANCE.
RELIABILITY.
INNOVATION.**





HELIX

FREEZER & CHILLER

Compact site-built and packaged Spiral systems with horizontal or vertical airflow.

The Helix Spiral is available as a Spiral Freezer, Spiral Cooler, Spiral Chiller or Spiral Ambient System, available in site-built and compact factory assembled format.

Unique IQF technology ensures all products are chilled or frozen evenly without excessive air speeds that can damage delicate products. The Helix offers a variety of design selections to extend operating periods between defrosts as well as vertical or horizontal airflow options.



Bespoke

Starfrost can design, construct and install a Helix Freezer or Chiller system exactly to customer requirements and product specification.

Efficient

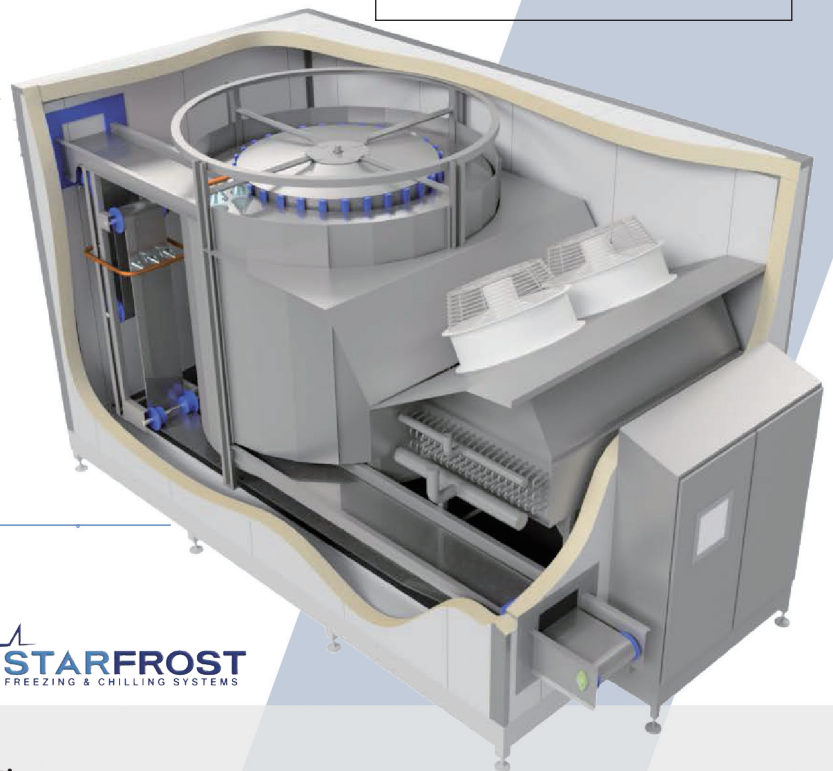
Designed with low maintenance, ease of hygiene and operational efficiency in mind.

Flexible

The design and construction enables modification of conveyor belt tiers and tier pitch to suit future developments.

GLACIER Green Solution

The Glacier System combines a Helix Spiral Freezer and a refrigeration plant in one complete energy efficient package. The Glacier uses ammonia refrigerant, combining excellent operating efficiency with zero environmental impact in terms of ozone depletion and global warming.



Features

- * Enclosure design allows easy access for maintenance and service requirements
- * Large freezing capacities relative to freezer footprint size
- * High efficiency axial fans with anodised motors
- * Evaporator tube and fin design for extended run periods
- * External installation available to maximise factory space

Specifications

- * Variable airflow direction for maximum cooling efficiency
- * Fully welded or insulated enclosure with optional stainless steel finish inside and outside
- * Evaporator with stainless steel tubes for maximum hygiene
- * Direct driven fan units with the option for inverter control

- * Stainless steel, plastic, low tension or direct driven conveyor belts
- * Stainless steel housing to bearings
- * Control panel with stainless steel enclosure, PLC and HMI touchscreen
- * Complete factory pre-assembled package systems available
- * Various belt infeed/exit configurations available
- * Sealed direct coupled planetary gearbox for drum drive



VELOCITY & HYBRID

SINGLE OR MULTI BELT TUNNEL FREEZER

VELOCITY - IMPINGEMENT FREEZER

Fast freezing IQF Tunnel with high-speed dual direction airflow.

Starfrost's IQF Impingement Freezer features high velocity airflow technology in a single belt tunnel that is available in a variety of widths to suit process loading requirements and factory space conditions. Varying the belt widths allows for shorter wider tunnels or longer narrower tunnels to be selected for the same capacity.



HYBRID - INLINE TUNNEL

Efficient Tunnel Freezer with flexible multi belt design for quick, cost effective freezing.

Starfrost's Inline IQF Tunnel is a highly versatile, multi belt IQF freezing & chilling system. It combines the look of a fluidised bed tunnel with the airflow characteristics of a Spiral Freezer, and can also be upgraded to a high air Velocity Impingement System for rapid crust freezing or full freezing a range of products.



Innovative

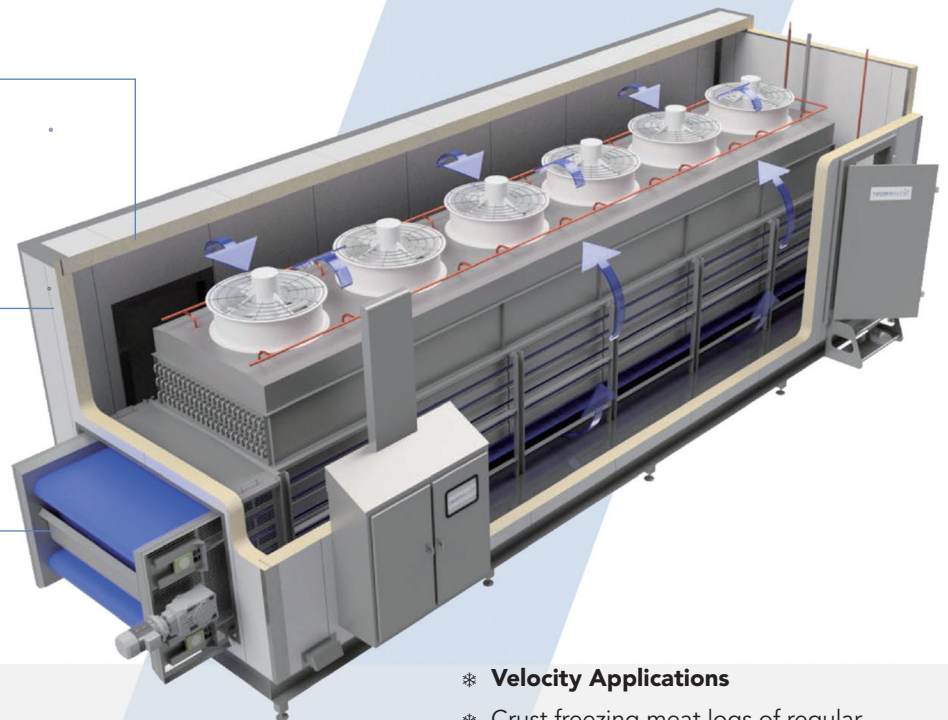
Ideal for food manufacturers progressing to a continuous freezing process or requiring an increase or diversity in production.

Cost Effective

Our Inline tunnels are energy efficient and capable of extremely quick IQF, with a typical 18 month payback when compared to cryogenics.

Hygienic

Both Inline tunnels are all stainless steel construction and seam welded self-draining floor system.



Velocity Features

- * Dual direction air delivering the fastest freeze process available
- * Stainless steel belt
- * Bespoke and variable design to suit customer requirements
- * Modular and packaged units
- * Factory built enabling easy and quick installation

Hybrid Features

- * Fast and efficient cooling with multiple level conveyor belts
- * Belts can operate independently at various speeds or on a cascade principle
- * Low maintenance with a fully accessible stainless steel design
- * Design provides rapid freezing with lowest power consumption
- * Adjustable air speed for controlled processing of light and delicate products

* Velocity Applications

- * Crust freezing meat logs of regular and irregular size
- * Re-freezing fish fillets and other seafood after glazing
- * Full freezing thin products such as hamburgers

Hybrid Applications

- * It can be adapted to glaze, harden, chill and freeze a wide range of food products including seafood, meat, poultry, bakery, dairy products, fruit and vegetables



TURBO

IQF FLUIDISED TUNNEL

Modular twin belt system with innovative technology for fluidised IQF food product.

Starfrost's Turbo is a fluidised bed tunnel freezer. This twin belt fluidisation system allows effective individual quick freezing of large quantities of loose products. Even wet, sticky and delicate food items normally considered difficult to freeze are carefully handled and effectively processed.



Effective

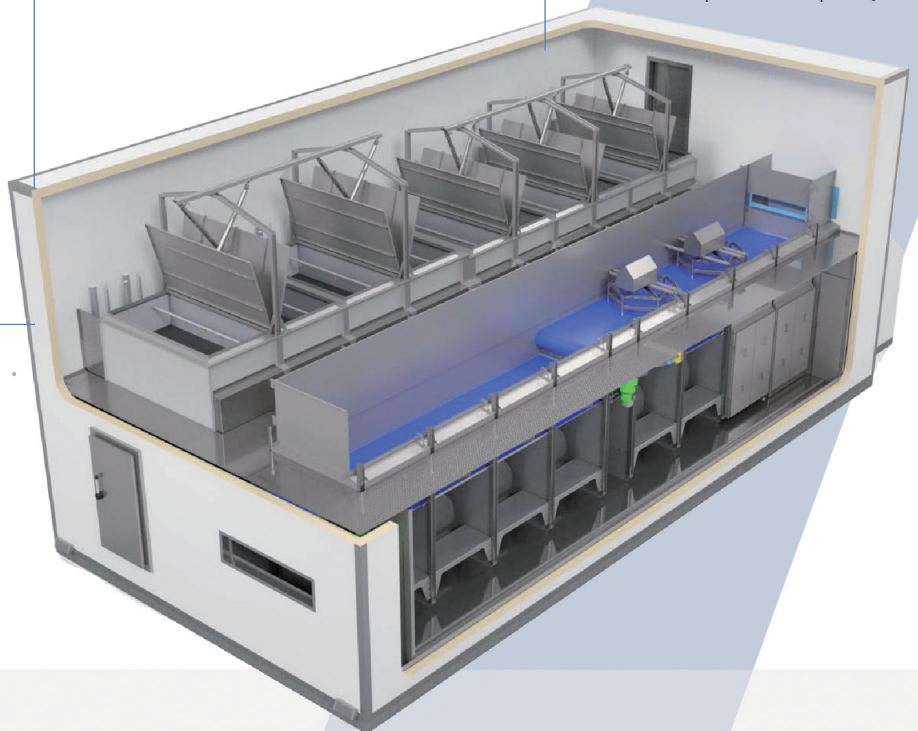
Two stage freezing system, with each stage being carried out on a separate conveyor belt, to ensure separation and even fluidisation of the product and consistent crust freezing, even when producing at reduced capacity.

Fluidised Technology

Innovative fluidisation enables complete and effective IQF of a wide range of products, maximising yield and profitability.

Continuous

Sequential defrost allows constant operation for up to 2 weeks maximising product capacity.



Features

- * Hygienic design with accessible internal areas
- * Controlled automated system with vibratory in-feed conveyor
- * Continuous separation and fluidisation of product particles
- * Initial Turbo crust freezing zone for fast surface conditioning
- * Product transfer to deep fluidised bed for final freezing
- * Independently adjustable airflow and conveyor belt speeds

- * In production belt cleaning available
- * Custom designed enclosure tunnel
- * Welded stainless steel flooring and construction for ultimate hygiene
- * Optional FRS (Frost Removal System) providing more than 22 hours between defrosts without sequential defrost
- * Optional 'Sequential Defrost' allows in excess of 14 days continuous operation
- * Deep conveyor sides maintain product position

Applications

- * Shrimp and shellfish
- * Fresh berries
- * Herbs
- * Diced exotic fruits
- * Cooked rice
- * Shredded or cubed meat
- * Grated cheese
- * Vegetables
- * French fries



CONTACT

PLATE FREEZER & HARDENER

Instant crust design with a non-stick belt to eliminate belt marks and increase product yield.

Starfrost's Contact Freezer utilises highly effective plate freezing technology. The two options, Contact Hardener & Contact Freezer can harden product surfaces before the final freezing process, maintain shape and eliminate belt marks or fully freeze products.



Freeze Fast

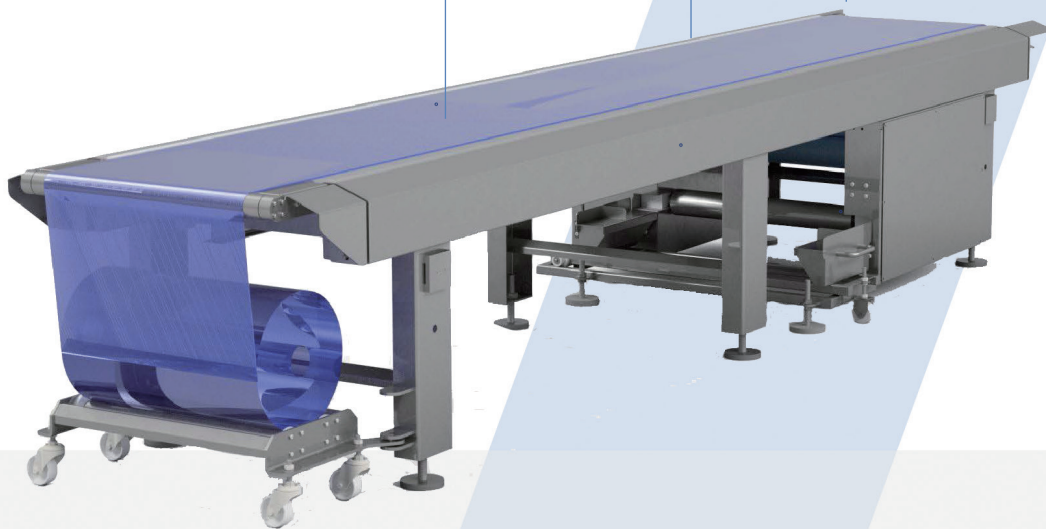
The freezer features a thin polyethylene film conveyor belt. This passes over a refrigerated plate that provides one of the fastest and most efficient freezing processes.

Eliminate belt marks

The Contact Hardener is ideal for freezing the underside of raw meats and poultry, as well as wet or delicate seafood products such as fish fillets, scallops, octopus and squid. The Contact Freezer can be used for the full freezing of a wide variety of products that might be delicate or require no 'belt marking'.

Adaptable

Both the Hardener and Freezing models can be fitted with guides that raise the film edge and permit the freezing of liquids and semi-solids such as sauces and purées.



Features

- * Product surfaces quickly frozen to a depth of around 1mm
- * Improves product presentation and quality
- * Helps reduce product dehydration
- * Increases value of soft and traditionally difficult to freeze food products
- * Long operation between defrosts
- * Film conveyor provides the most hygienic system possible
- * Overhead freezing system with evaporator available for total product freezing

Specification

- * Fully stainless steel welded evaporator & fan units
- * Top cover & freezing plate access to eliminate weight and drip loss
- * Non-refrigerated infeed and discharge end sections providing an area for load/unloading product either manually or automatically
- * Modular and extendable design
- * Suitable for a variety of refrigerants

Applications

- * Shellfish and fish fillets
- * Marinated or wet products
- * Puree or liquid
- * Chicken portions
- * Premium and delicate products
- * Cooked rice
- * Injected meat
- * Products before spiral freezing process to improve quality and capability

OUR SERVICES

We offer solutions for all situations.

Whether it be extending operational hours, exploring new processing possibilities or diversifying production, we deliver a service tailored to our customers' requirements.

Our team of experts are on hand to provide modification, maintenance and relocation of existing systems, as well as offering spare parts, operational maintenance and preventative programmes. We know all there is to know when it comes to freezing and chilling equipment and we are passionate about delivering the most suitable solution to our customers.

If you require technical service support get in touch with our team of experts to find out how we can help.



Maintenance & Modification

We deliver an extensive range of support and services to maximise operational performance.



Product Testing

We perform product trials & assist in product development ensuring the most suitable solution is selected.



Spare parts

We offer technical advice as well as supply replacement parts and upgraded components for IQF & Spiral systems.





Manufacturing IQF in Technical Collaboration with Starfrost UK

**PERFORMANCE.
RELIABILITY.
INNOVATION.**

**“We are in business
to secure a better
future by using the
best people, systems
and technology to
deliver quality freezing
and chilling systems”**

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Starfrost is part of the Star Refrigeration group