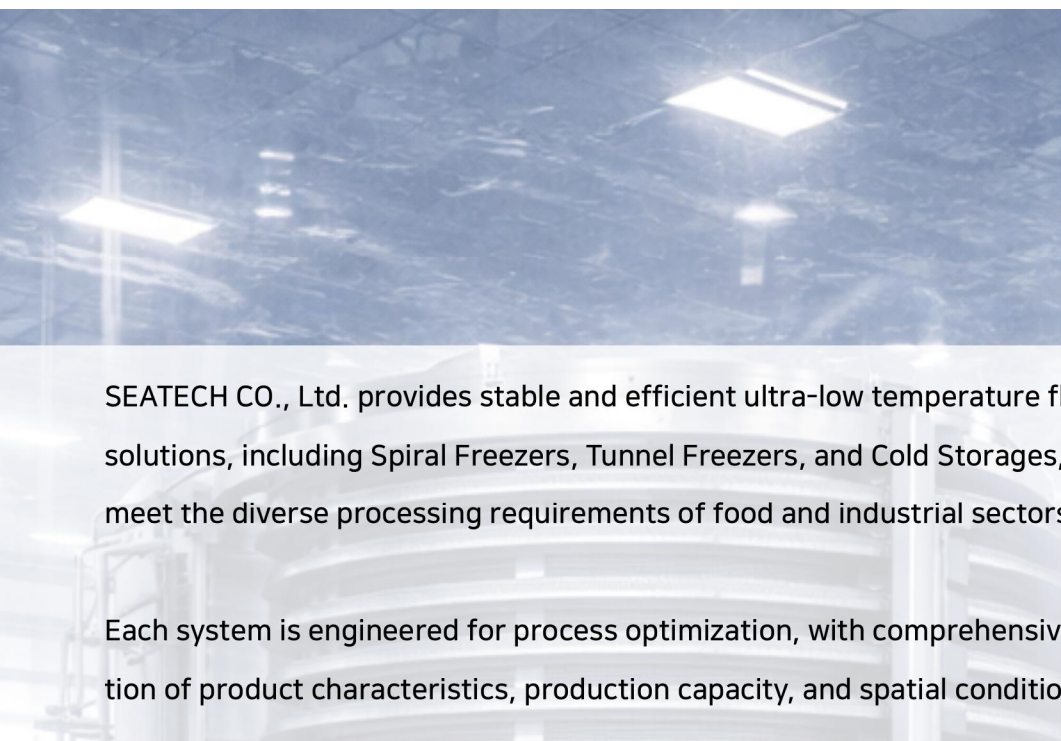




IQF INDUSTRIAL FREEZING SOLUTIONS

-60°C





SEATECH CO., Ltd. provides stable and efficient ultra-low temperature flash freezing solutions, including Spiral Freezers, Tunnel Freezers, and Cold Storages, tailored to meet the diverse processing requirements of food and industrial sectors.

Each system is engineered for process optimization, with comprehensive consideration of product characteristics, production capacity, and spatial conditions.



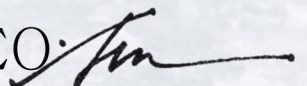


Based on our accumulated expertise and continuous R&D in ultra-low temperature flash freezing systems, we hold numerous relevant patents. In particular, we were the first in the industry to develop the Multi Tunnel Freezer, achieving both production efficiency and quality stability and have earned the deep trust of our customers.

Our technical team manages the entire process—from designing and manufacturing to installation, commissioning, and after-sales service—without outsourcing, thereby maximizing process consistency and quality excellence. This reflects our core philosophy of pursuing long-term partnerships rather than simply supplying equipment.

We will continue to advance our technologies in stable ultra-low temperature structural design and energy optimization, evolving into a global freezing solution provider that enhances our customers' production competitiveness.

Thank you.

Sangdon Lee / CEO 

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- 02 CERTIFICATION

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CONTACT

- 09 HEAD OFFICE & BRANCH
- 10 FACTORY



A Technology Partner Designing Your Success

SEATECH CO., Ltd. is committed to going beyond simply supplying equipment.

Our top priority is achieving best efficiency in our customers' processes. Through extensive experience across various industrial sites, we have come to a firm conviction: meticulous choices and technical details in the design phase lead not only to intrinsic product quality, but also stable operations, and sustainable performance for our clients.

Planning & Design
We lay a solid foundation for every project through customer process analysis and customized design.

Manufacturing & Installation
We build and install highest quality equipments safely with our field-oriented technology.

A/S Service
We guarantee long-term operational efficiency by providing our customers after-sales support following installation.

We will continue to be your trusted, long-term technology partner based on our accumulated technical expertise and on-site know-how.



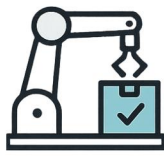
CORE COMPETENCIES

What Makes SEATECH Different?



Engineering

Design and implementation of stable ultra-low temperature refrigeration systems down to -60°C



Manufacturing

Direct production and quality management at our domestic factory



Twin-System

Optimized for continuous operation 24 hours a day



Global PJT Experience

Proven track record across numerous global project sites

HYGIENE | CLEANING | SAFETY DESIGN

Hygienic structure meeting HACCP standards and safety-first practices



Hygiene & Materials

- ✓ 304/316 Stainless Steel
Enhances corrosion resistance and durability by using food grade stainless steel on all surfaces
- ✓ Sloped Floor Design
Achieves perfect drainage through sloped floor engineering.
- ✓ Seamless Welding
Prevents foreign object and eliminates contamination with gap-free full-penetration welding



Cleaning System (CIP)

- ✓ Double Nozzle Line
Ensures effective belt cleaning with dual nozzle lines
- ✓ Open Frame Structure
Ensures accessibility for high-pressure cleaning with an open-type frame structure without dead zones
- ✓ Sloped Floor Design
Maximizes cleaning efficiency with a sloped floor that prevents residual water



Safety & Protection

- ✓ Safety Interlocks
Safety sensors applied to stop equipment immediately when doors are opened
- ✓ Emergency Stop
Emergency stop buttons placed throughout the equipment for immediate power cutoff
- ✓ Torque Limiter
Equipped with a torque limiter to prevent mechanical damage upon drive unit overload

COMPLIANCE STANDARDS(준수 규격)



HACCP



GMP



Eco-Friendly



OSHA



Food Grade

- Designed for hygiene and safety in compliance with domestic food sanitation laws and HACCP operational standards.
- Utilizes food-grade stainless steel (SUS 304/316) for all food-contact surfaces and designed according to hygienic structural principles.
- Complies with field safety regulations and management standards by applying safety devices such as interlocks and emergency stops.

FREEZING SYSTEM

TOTAL ENGINEERING CAPABILITY



Control Panel & Program

In-House Development
PLC programming & manufacturing
Customized control systems



Freezer & Conveyor

Engineering
Ultra-low temperature structure
Optimized production design



R&D Center

(Daejeon Branch)
Continuous R&D & patents
Ultra-low temp specialization



In-House Installation & Service Team

Direct installation (no outsourcing)
Fast maintenance response



Factory Test & Trial Operation Facility

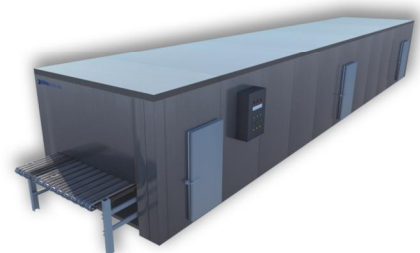
Pre-shipment performance test
Customer witness test



BT Freezer



IQF Spiral Freezer



IQF Tunnel Freezer



BT FREEZER(BLAST TYPE)

- Fast-freezes large quantities of products using a high-velocity air blast system.
- Ensures uniform freezing through powerful cold air circulation.
- Compact footprint for efficient use of space
- Ideal for seafood, meat, and pre-packaged products and more



IQF SPIRAL FREEZER

MINI / IQF-S250 / IQF-S400 / IQF-S800

- Designed for maximum space efficiency and optimized for continuous freezing operations.
- Minimizes product dehydration and surface damage.
- Suitable for processed meat, seafood, bakery, and Ready-to-Eat (RTE) meals, and more.
- Available in single-drum or double-drum type.



IQF TUNNEL FREEZER

IQF-T400 / IQF-T600 / IQF-T800 / etc.

- Designed for high-speed freezing of both individual and bulk products.
- Achieves rapid and uniform freezing via a horizontal airflow system.
- Ideal for fruits, vegetables, seafood, meat, and more.
- Modular design ensures easy maintenance and serviceability.

IQF UTF CHAMBER

- A specialized freezing chamber capable of ultra-low temperature operation down to -120°C .
- Specifically engineered for small-batch freezing and R&D testing.
- Allows for precise control over freezing conditions.
- Ideal for R&D, high-value-added products, and product quality testing.



APPLIED INDUSTRIES

Our ultra-low temperature freezing solutions are applicable across a wide range of food categories.



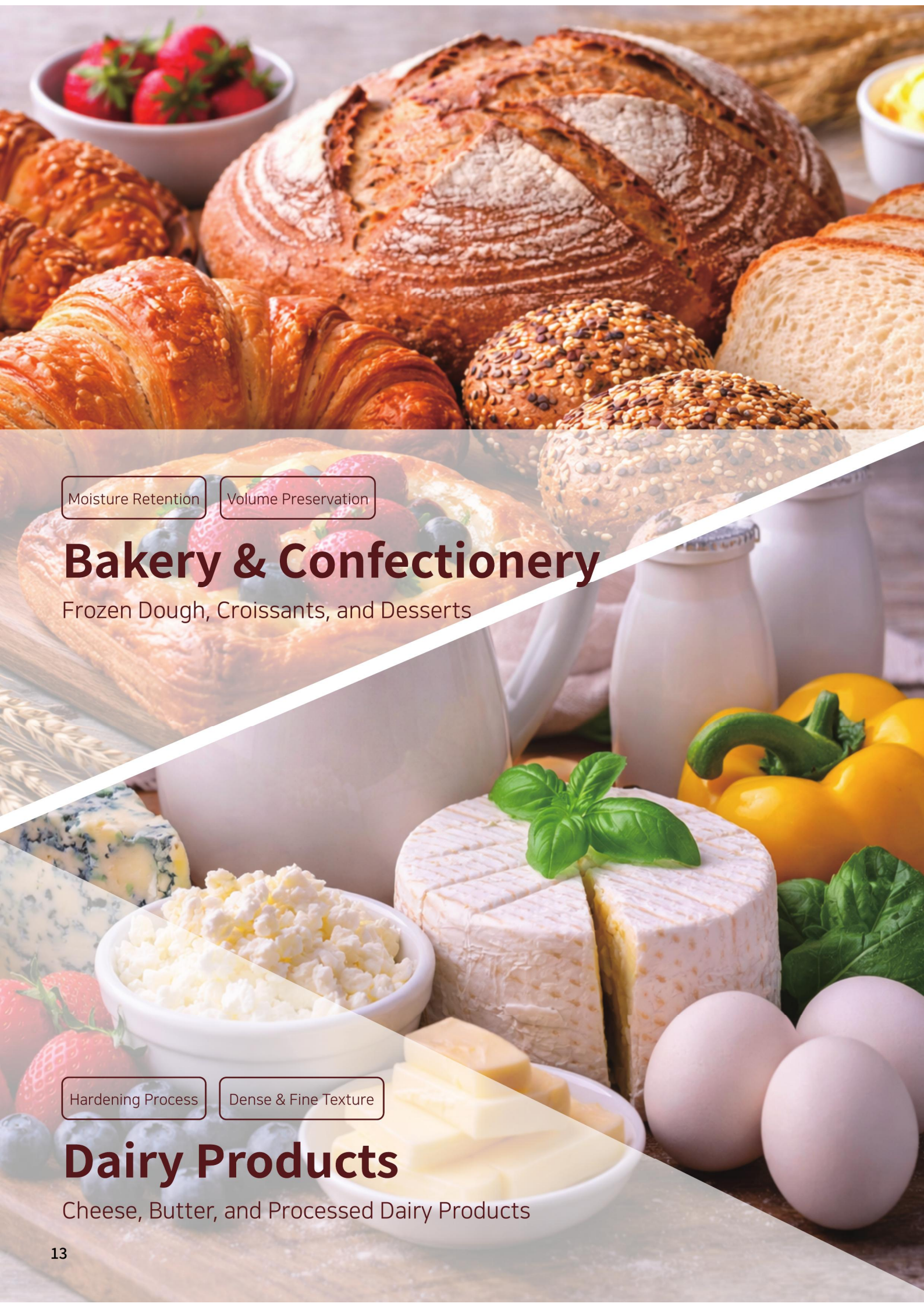
Juice Retention

Minimization of Drip Loss

Meat Processing

Processed meats such as sliced sausage





Moisture Retention

Volume Preservation

Bakery & Confectionery

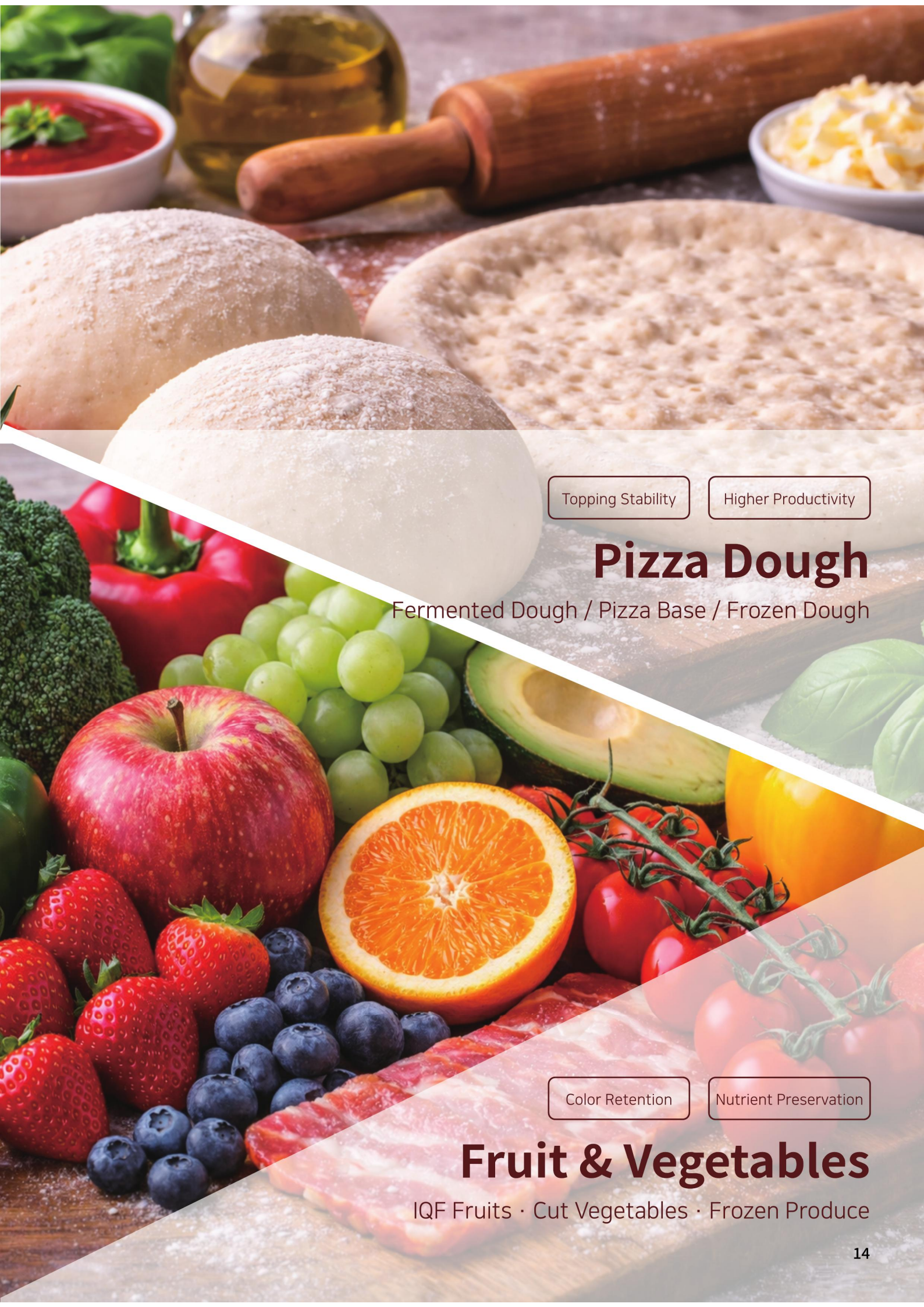
Frozen Dough, Croissants, and Desserts

Hardening Process

Dense & Fine Texture

Dairy Products

Cheese, Butter, and Processed Dairy Products



Topping Stability

Higher Productivity

Pizza Dough

Fermented Dough / Pizza Base / Frozen Dough

Color Retention

Nutrient Preservation

Fruit & Vegetables

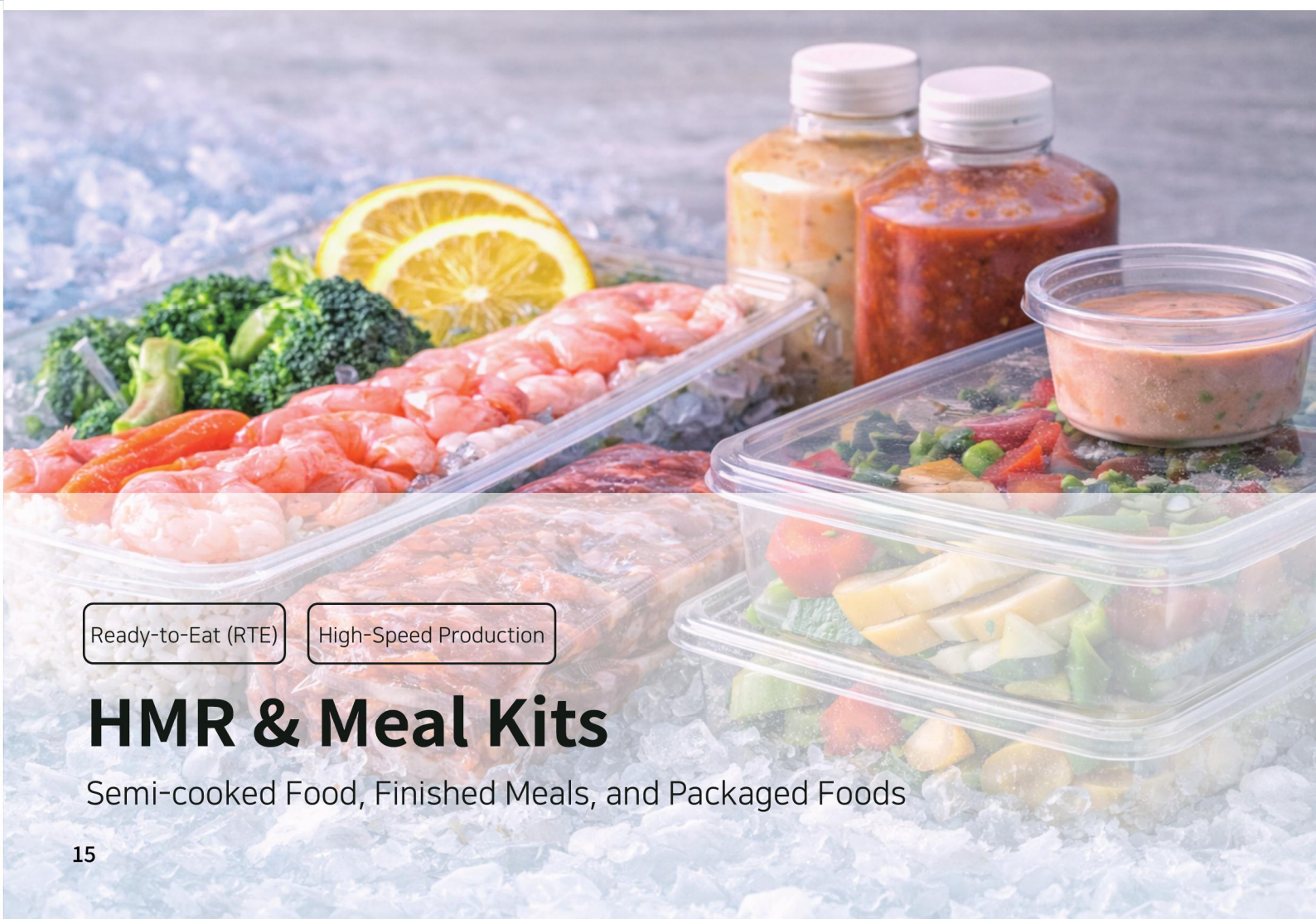
IQF Fruits · Cut Vegetables · Frozen Produce

IQF

Freshness Preservation

Seafood Processing

Fish, Shellfish, and Processed Seafood Products



Ready-to-Eat (RTE)

High-Speed Production

HMR & Meal Kits

Semi-cooked Food, Finished Meals, and Packaged Foods

Precision Control

Customized

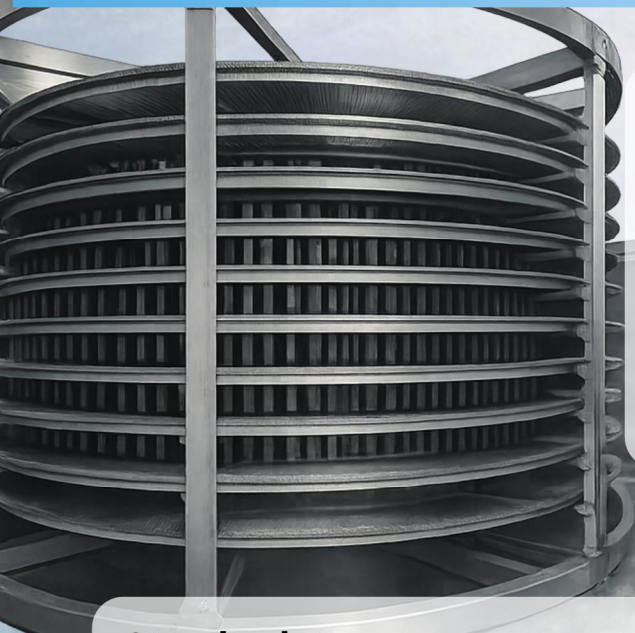
Other Food & Special Products

Food / Biotech / Pharmaceuticals / Industrial Components



INDUSTRIAL FREEZING SOLUTION LINEUP

SPIRAL FREEZER



Compact Type

Model	Specification	Refrigeration System	Unit Cooler	Capacity (kg/h)
S200	500mm x 6Tiers	2-Cycle(20+20) 1EA	30HP 1EA	~200
S300	500mm x 8Tiers	2-Cycle(15+15) 2EA	20HP 2EA	~300



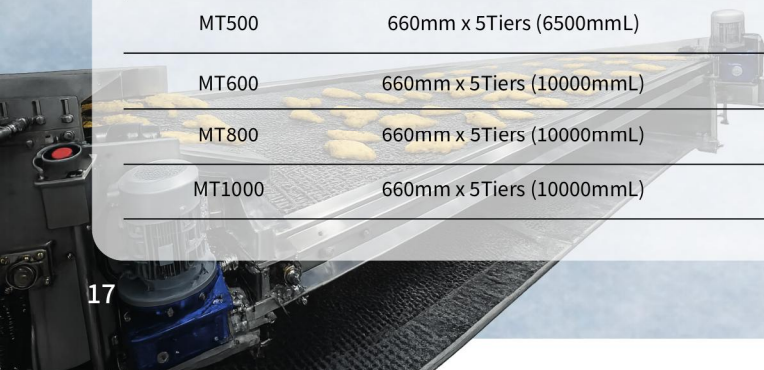
Standard Type

Model	Specification	Refrigeration System	Unit Cooler	Capacity (kg/h)
S400	660mm x 11Tiers	2-Cycle(20+20) 2EA	25HP 2EA	~400
S600	660mm x 11Tiers	2-Cycle(30+30) 2EA	40HP 2EA	~600
S800	660mm x 15Tiers	2-Cycle(25+25) 3EA	30HP 3EA	~800
S1000	660mm x 15Tiers	2-Cycle(30+30) 2EA	40HP 3EA	~1000

TUNNEL FREEZER

Multi Tunnel Freezer

Model	Specification	Refrigeration System	Unit Cooler	Capacity (kg/h)
MT400	660mm x 5Tiers (6500mmL)	2-Cycle(15+15) 2EA	20HP 2EA	~400
MT500	660mm x 5Tiers (6500mmL)	2-Cycle(20+20) 2EA	25HP 2EA	~500
MT600	660mm x 5Tiers (10000mmL)	2-Cycle(30+30) 2EA	40HP 2EA	~600
MT800	660mm x 5Tiers (10000mmL)	2-Cycle(20+20) 4EA	25HP 4EA	~800
MT1000	660mm x 5Tiers (10000mmL)	2-Cycle(30+30) 4EA	40HP 4EA	~1000



TUNNEL FREEZER

2-Way Multi Tunnel Freezer

Model	Specification	Refrigeration System	Unit Cooler	Capacity (kg/h)
2WMT400	660mm x 5단 (6500mmL)	Freezing(-60°C) Cooling(0°C)	20HP 2EA 25HP K-type 2EA	~400
2WMT500	660mm x 5단 (6500mmL)	Freezing(-60°C) Cooling(0°C)	25HP 2EA 30HP K-type 2EA	~500
2WMT600	660mm x 5단 (10000mmL)	Freezing(-60°C) Cooling(0°C)	40HP 2EA 40HP K-type 2EA	~600
2WMT800	660mm x 5단 (10000mmL)	Freezing(-60°C) Cooling(0°C)	25HP 4EA 30HP K-type 4EA	~800
2WMT1000	660mm x 5단 (10000mmL)	Freezing(-60°C) Cooling(0°C)	40HP 4EA 40HP K-type 4EA	~1000

Multi Tunnel Freezer(2-Lines)

Model	Specification	Refrigeration System	Unit Cooler	Capacity (kg/h)
MT600-2L	660mm x 5Tiers (13000mmL)	2-Cycle(20+20) 4EA	25HP 4EA	~600
MT800-2L	660mm x 5Tiers (13000mmL)	2-Cycle(30+30) 4EA	40HP 4EA	~800

2-Way Multi Tunnel Freezer(2-Lines)

Model	Specification	Refrigeration System	Unit Cooler	Capacity (kg/h)
2WMT600-2L	660mm x 5Tiers (13000mmL)	Freezing(-60°C) Cooling(0°C)	25HP 4EA 30HP K-Type 4EA	~600
2WMT800-2L	660mm x 5Tiers (13000mmL)	Freezing(-60°C) Cooling(0°C)	40HP 4EA 40HP K-Type 4EA	~800



BT FREEZER(BLAST TYPE)

Ultra-Low Temperature Cold Storage: Smart Twin System

Stop worrying about spoilage caused by system failures!

Conventional freezing relies on slow cooling, which damages the cell membranes of food, resulting in a significant decline in texture and taste after thawing. Through extensive testing to preserve taste, color, and aroma, it has been demonstrated that ultra-low temperature flash freezing maintains product quality by freezing the product before cellular damage occurs. The BT Blast Freezer rapidly freezes products at temperatures as low as -60°C , minimizing cell damage and reducing moisture loss. This significantly decreases drip loss and preserves freshness even after thawing.

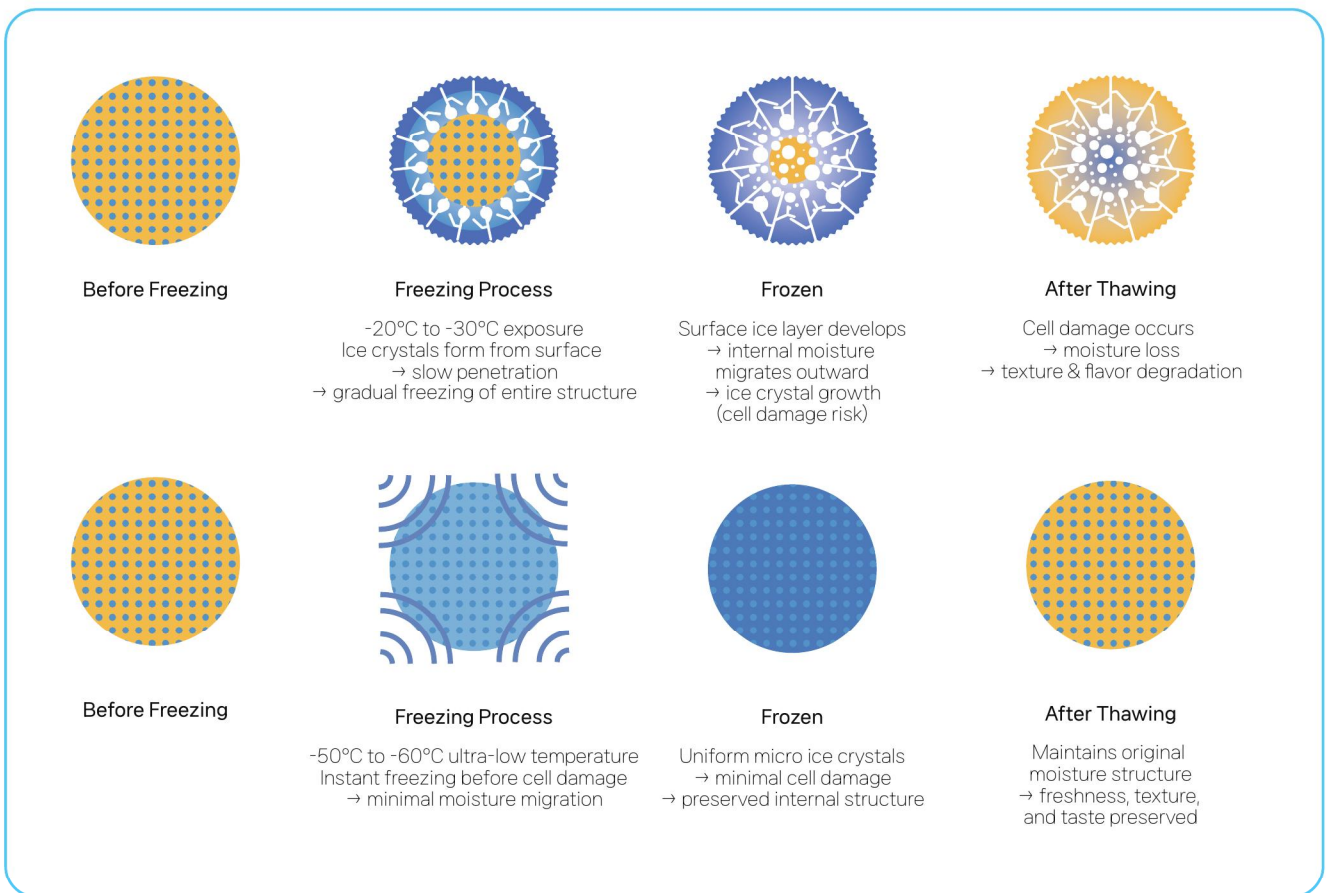
BT FREEZER (BLAST TYPE)

Smart Twin System: A New Concept in Ultra-Low Temperature Cold Storage

Capacity	Customizable
Temp.	-60°C ~ -40°C
Thawing	Automatic
Energy Saving	Up to 25%



Conventional Flash Freezing vs. BT Freezing System



IQF SPIRAL FREEZER

MINI / IQF-S400 / IQF-S600 / IQF-S800 / IQF-S1000 / IQF-1500





IQF SPIRAL FREEZER

MINI / IQF-S400 / IQF-S600 / IQF-S800 / IQF-S1000 / IQF-1500

The Spiral Freezer line is a high-efficiency food freezing system applying advanced ultra-low temperature technology.

Available in a wide range of capacities, it can be customized to suit various production environments—from small-quantity to large-quantity production.

The spiral structure is designed to efficiently accommodate **over 150 meters of conveyor belt** within a limited space, ensuring sufficient freezing time even in compact areas.

The best feature of the Spiral Freezer is its helical conveyor belt layout, which maximizes the utilization of vertical space.

IQF SPIRAL FREEZER

MINI / IQF-S400 / IQF-S600 / IQF-S800 / IQF-S1000 / IQF-1500

Key Advantages : IQF SPIRAL FREEZER



AUTOMATION

Fully integrated PLC control



HYGIENIC DESIGN

SUS304 Stainless Steel



SPEED CONTROL

Product-specific speed control



FLEXIBLE INSTALLATION

Optimized space utilization

SPECIFICATION

MODEL	MINI(~300kg/h)	IQF-S400	IQF-S600
Operating Temp.	-60°C	-60°C	-60°C
Freezing Capacity	~300kg/h	~400kg/h	~600kg/h
MODEL	IQF-S800	IQF-S1000	IQF-S1500(MAX.)
Operating Temp.	-50°C ~ -60°C	-50°C ~ -60°C	-50°C ~ -60°C
Freezing Capacity	~800kg/h	~1000kg/h	~1500kg/h

- Conveyor specifications - including belt width, total length, and mesh type - are custom-designed according to the product and freezing requirements.
- Hygienic internal structure for easy cleaning, with stainless steel used for main frame and external panels
- CIP system (optional, NET cleaning system) available
- Freezing capacity may vary depending on product type, moisture content, and processing conditions

IQF TUNNEL FREEZER

IQF-T300 / IQF-T600 / IQF-T900 / IQF-T1200 / IQF-T1500 / IQF-T2000





IQF TUNNEL FREEZER

SEATECH's IQF Tunnel Freezer series is optimized for high-capacity production environments. With a wide range of models including IQF-T300, IQF-T600, IQF-T900, and IQF-T1200, customers can select the most suitable system for their production needs.

The modular design allows seamless integration into existing production lines, while the [automated system minimizes labor requirements](#) and optimizes energy efficiency, delivering a cost-effective freezing solution.

IQF TUNNEL FREEZER

IQF-T300 / IQF-T600 / IQF-T900 / IQF-T1200 / IQF-T1500 / IQF-T2000

Key Advantages : IQF TUNNEL FREEZER



HIGH PRODUCTIVITY

Continuous & stable operation



HYGIENIC DESIGN

304 Stainless Steel



ENERGY EFFICIENCY

High-efficiency cooling system



FLEXIBLE APPLICATION

Wide food compatibility



SPECIFICATION

MODEL	IQF-T300	IQF-T600	IQF-T900
Operating Temp.	-60°C	-60°C	-60°C
Freezing Capacity	~300kg/h	~600kg/h	~900kg/h
MODEL	IQF-T1200	IQF-T1500	IQF-T2000
Operating Temp.	-60°C	-60°C	-60°C
Freezing Capacity	~1200kg/h	~1500kg/h	~2000kg/h

- Conveyor specifications - including belt width, total length, and mesh type - are custom-designed according to the product and freezing requirements.
- Hygienic structure with stainless steel base frame and optional stainless steel panels for walls and ceiling
- Inverter control system applied to conveyor speed
- CIP system (optional, NET cleaning system) available
- Freezing capacity may vary depending on product thickness, moisture content, and processing conditions

2-Way Multi Tunnel Freezer

The most cost-effective solution for high-capacity production

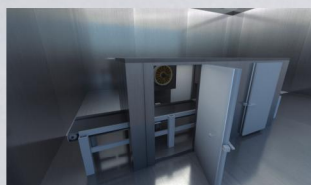
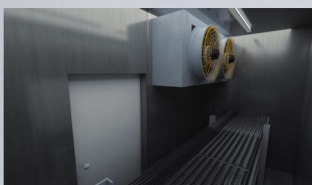


KEY FEATURES

SEATECH's IQF Tunnel Cooler is designed for rapid cooling of food products after thermal processing, effectively inhibiting microbial growth.

The tunnel cooling system quickly reduces product temperature, preventing quality deterioration and ensuring safe storage conditions

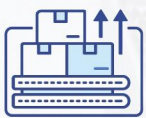
-70°C COMPACT IQF TUNNEL FREEZER



Up to 40%
Space Efficiency
Improvement

Up to 2×
Higher
Productivity

KEY FEATURES



SPACE EFFICIENCY

Reduced footprint by 30–50%



IQF TECHNOLOGY

Minimized drip loss



SMART ENERGY SYSTEM

Energy-saving design with CIP option

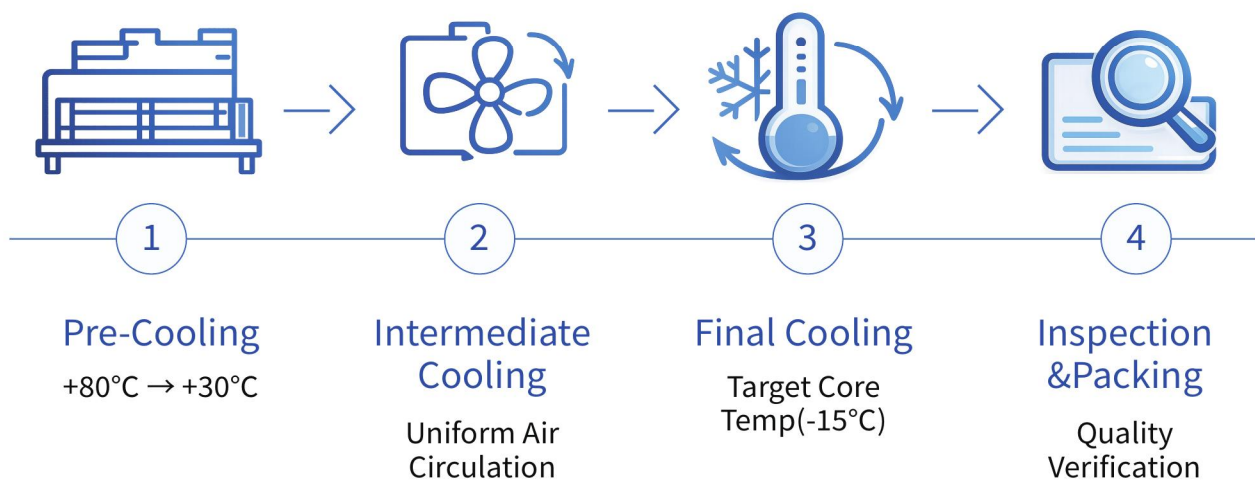


FLEXIBLE APPLICATION

Customized solutions for various products

2-Way Multi Tunnel Freezer

Cooling Process Overview



TECHNICAL PERFORMANCE

Engineered for Precision Cooling & Maximum Throughput



Key Advantages



COOLING METHOD
Forced air circulation system



ENERGY EFFICIENCY
Advanced heat exchange & insulation



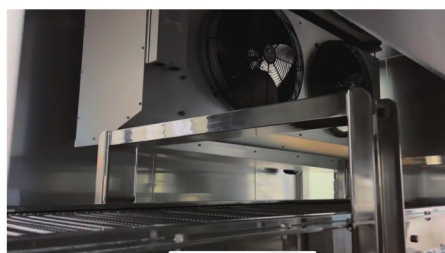
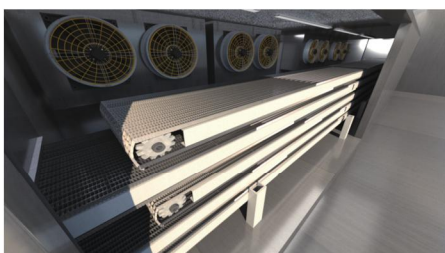
TEMPERATURE CONTROL
Digital temperature control system



EASY CLEANING
304 Stainless Steel & CIP system



HUMIDITY CONTROL
Prevents product dehydration



Tunnel Freezer Overview(2-way)

Two functions in one freezer



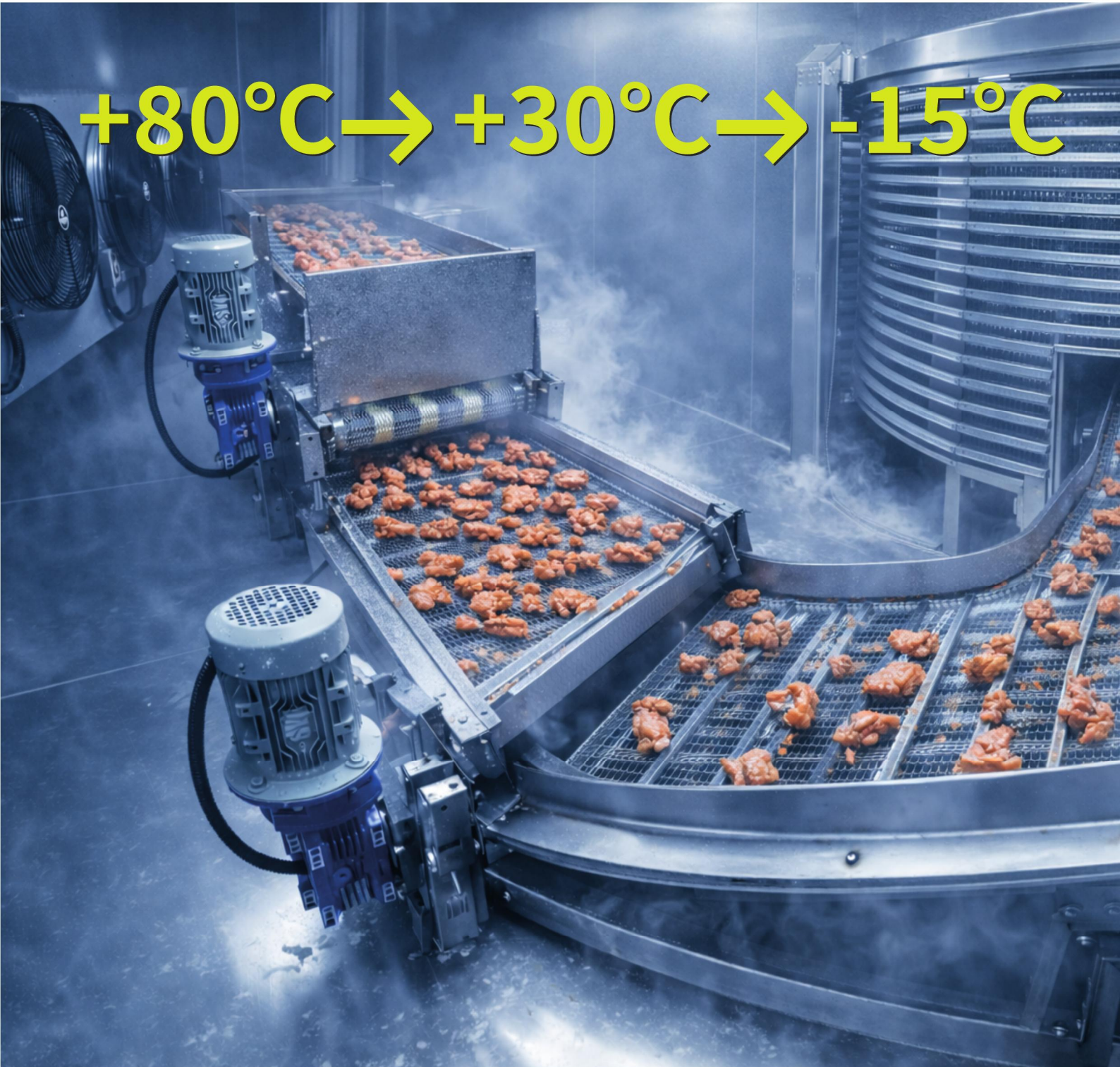
Cooling
Zone

The image shows a large industrial freezing zone. It features multiple levels of metal shelving with perforated metal mesh surfaces. Above the shelving, there are three large, circular fans with metal grilles. In the foreground, there are two prominent blue industrial pumps or motors mounted on the machinery. The overall scene is brightly lit, and the floor appears to be a clean, light-colored surface. The text "Freezing Zone" is overlaid in white on a semi-transparent blue background in the center-right of the image.

Freezing Zone

PRE-COOLING FREEZER + IQF SPIRAL FREEZER

+80°C → +30°C → -15°C



PRE-COOLER + IQF SPIRAL FREEZER

1 System Overview

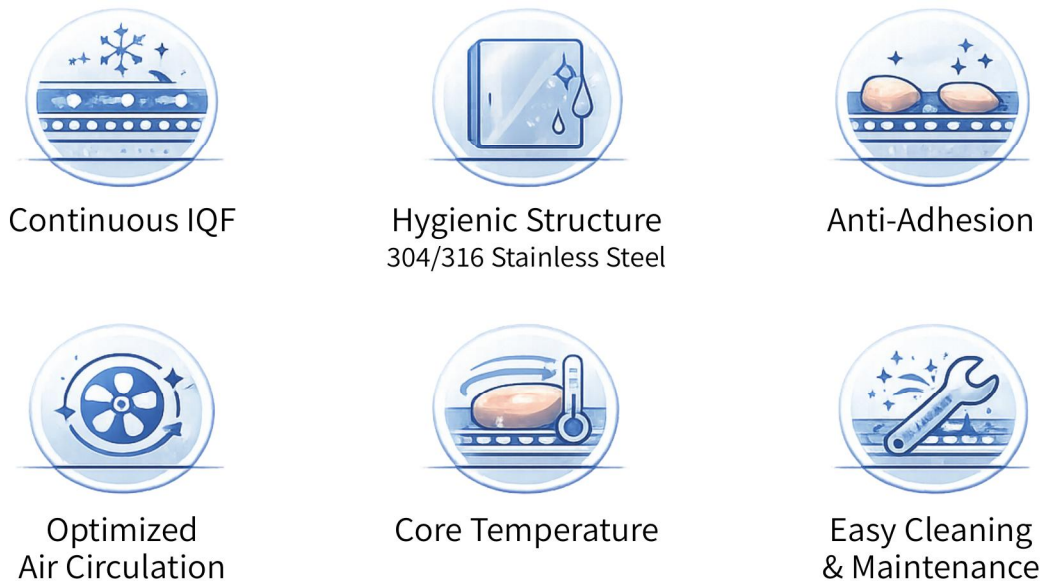
This system is designed for continuous IQF processing of cooked meat products such as marinated chicken. Heat-treated products (up to 80°C) are first cooled to approximately 30°C in the pre-cooling tunnel, ensuring stable temperature reduction. The product is then transferred to the spiral freezer, where the core temperature is rapidly reduced to -15°C or below.

The system is designed for continuous processing operation without interruption and optimized based on characteristics of meat product such as shape, moisture content, and coating condition, with a hygienic structure applied.

2 Processing ※ After freezing, packaging process applied



3 Advantages



IQF UTF CHAMBER

IQF UTF chamber is a specialized cryogenic freezing chamber suitable for diverse industries. From food preservation to advanced semiconductor technology, it can be customized to meet specific customers' requirements. It is the culmination of SEATECH's advanced technology and expertise.

- ✓ Optimized for high-capacity production
- ✓ Ultra-low temperature: -70°C to -125°C
- ✓ Reduce Labor Costs with Automated Systems

Key Advantages



Ultra Low Temp

Achieves temperatures down to -125°C



Automated Control

Stable operation with precision control



High Durability

Robust stainless steel structure

SPECIFICATION

DESIGN PRESS	20kg/cm ²
DESIGN TEMP	-75°C ~ -120°C
PNEUM. TEST PRESS	5kg/cm ²
MATERIAL	High Density Urethane
SURFACE MAT'L	304 Stainless Steel
SIZE	2,200 x 3,000 x 2,150 _(mm)
NET WEIGHT	2,000kg

Cryogenic Freezing Test – Mango

This test demonstrates cryogenic freezing at -60°C applied to fresh mango from the Philippines. Compared to conventional freezing, ultra-low temperature rapid freezing preserves the original shape, color, and texture after thawing.





Before Freezing

Fresh mango prepared and cut



Frozen (-60°C)

Rapid freezing at ultra-low temperature
→ Maintains original shape and color



After Thawing

Minimal moisture loss
→ Texture well preserved, no drip loss

Cryogenic Freezing Test – White Fish Fillet

This test demonstrates cryogenic freezing at -60°C applied to fresh white fish fillets. Compared to conventional freezing, cryogenic flash freezing preserves freshness, color, and texture of fish after thawing.





Before Freezing

Fish fillet with moisture and springy texture



Frozen (-60°C)

Rapid freezing at ultra-low temperature
→ Maintains shape, color, and freshness

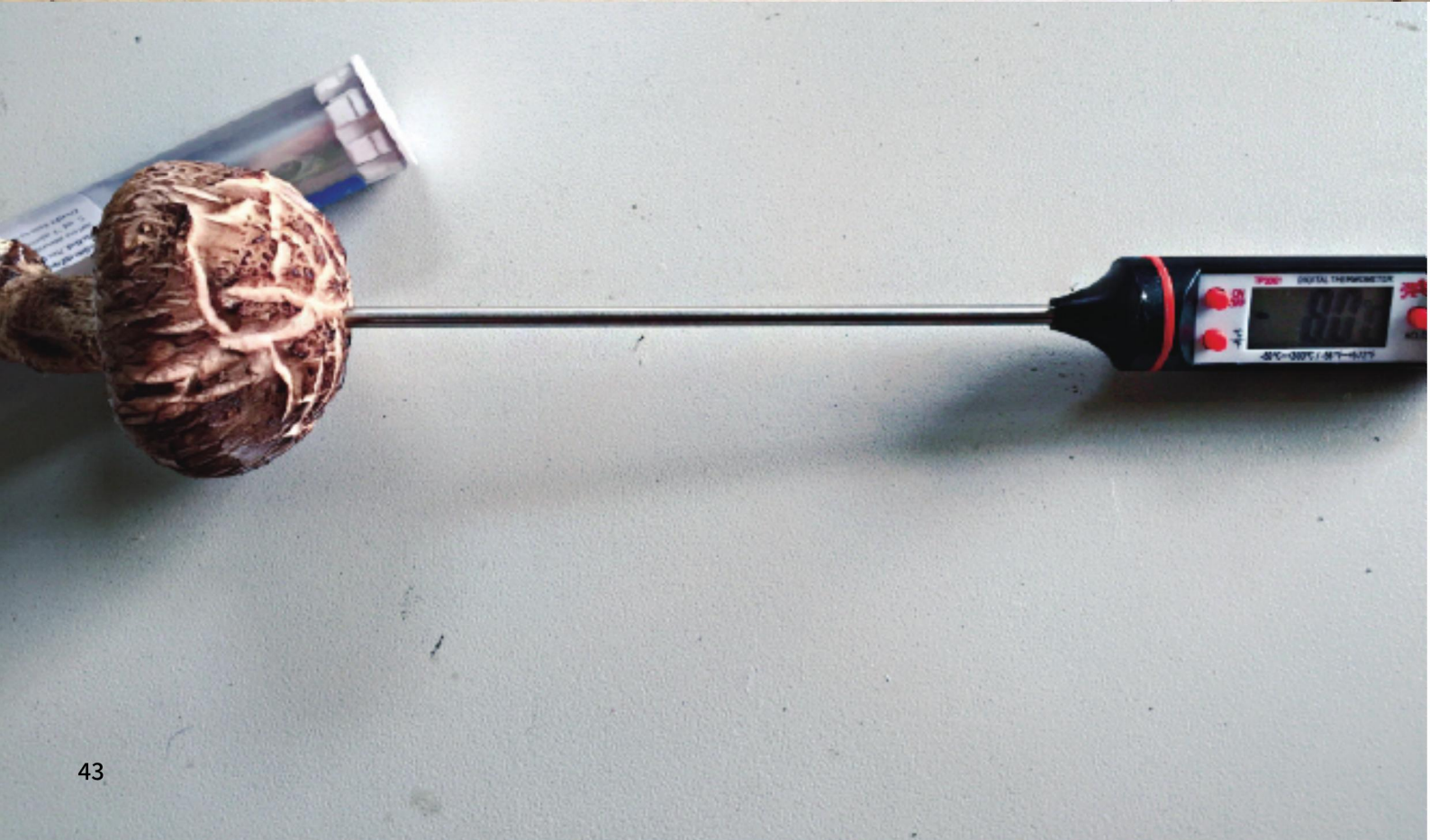


After Thawing

Minimal moisture loss and tissue damage
→ No drip loss, texture preserved

Cryogenic Freezing Test – Mushrooms and Abalones

This test demonstrates cryogenic freezing at -60°C applied to mushrooms and abalones. Compared to conventional freezing, ultra-low temperature rapid freezing minimizes tissue damage and preserves color, texture, and moisture after thawing.





Thawed Mushroom

Frozen Abalone



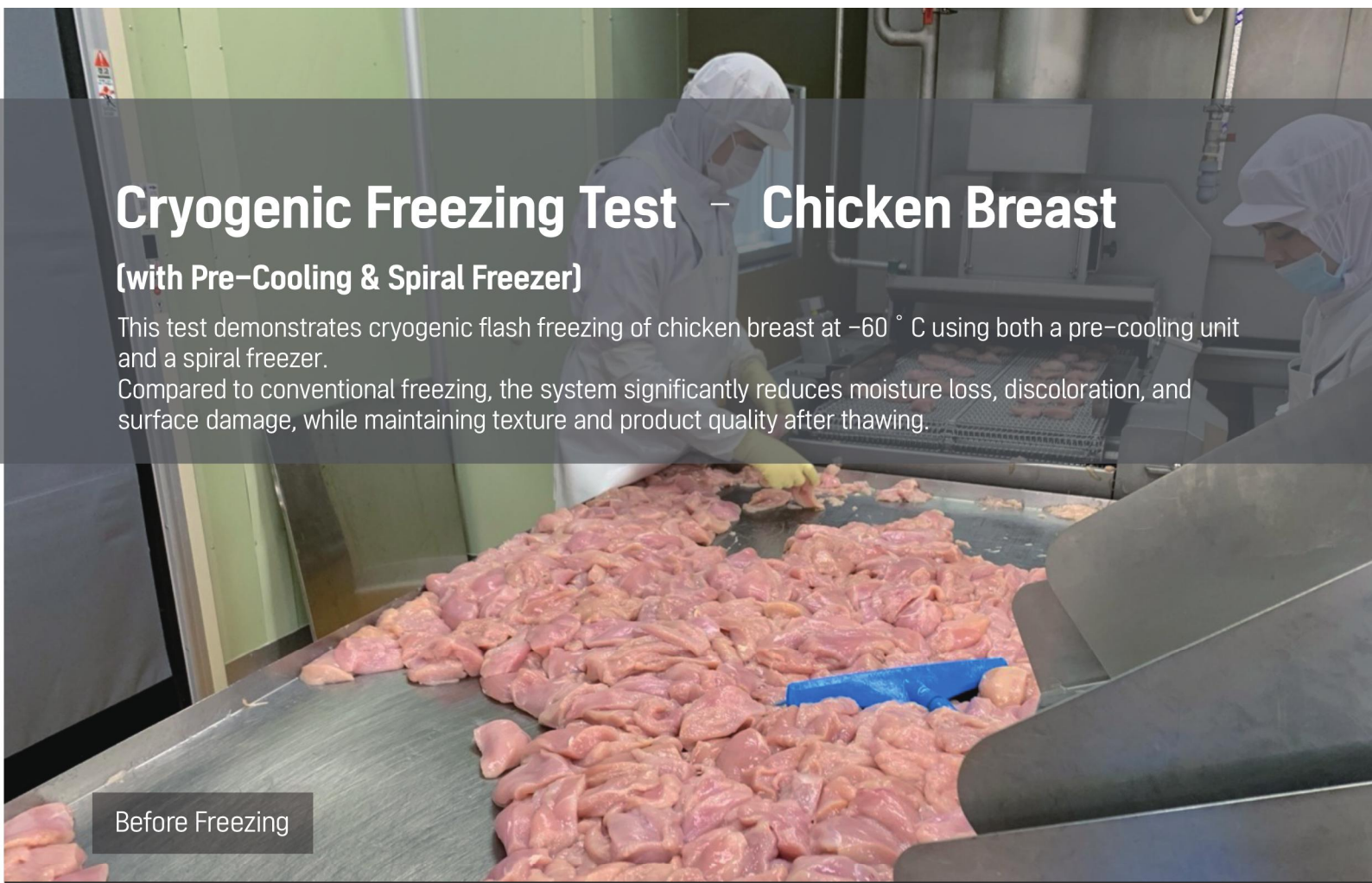
Thawed Abalone

Cryogenic Freezing Test – Chicken Breast

(with Pre-Cooling & Spiral Freezer)

This test demonstrates cryogenic flash freezing of chicken breast at -60°C using both a pre-cooling unit and a spiral freezer.

Compared to conventional freezing, the system significantly reduces moisture loss, discoloration, and surface damage, while maintaining texture and product quality after thawing.



Before Freezing



Pre-Cooling Process

Cryogenic freezing minimizes tissue damage and preserves product quality



Spiral Freezing (-60°C)



→ Frozen Product [Chicken Breast]

Cryogenic Freezing Test – Chicken Breast

[with Decline Belt Conveyor]

This test demonstrates rapid cryogenic freezing of chicken breast at -60°C using a decline belt conveyor system.

Compared to conventional methods, the system significantly reduces moisture evaporation, surface damage, and discoloration, maintaining superior texture and product quality after thawing.



→ Decline Belt Conveyor Freezing Process

→ Before Freezing



→ Frozen (-60°C)



→ 1 Hour after Thawing at Room Temperature





Gimpo Headquarters

Room 349~350, 3F, 741 Taejang-ro, Gimpo-si, Gyeonggi-do, Republic of Korea
Tel : +82 31-983-6094 Fax : +82 31-983-7784



Seoul Branch

Bldg. A, Room 501, 247 Gonghang-daero, Gangseo-gu, Seoul, Republic of Korea
Tel : +82 2-6673-1778 Fax : +82 2-6673-1779



Suncheon Branch

1478, Yeosun-ro, Haeryong-myeon, Suncheon-si, Jeollanam-do, Republic of Korea
Tel : +82 61-724-7717 Fax : +82 61-724-7793



Daejeon R&D Center

50, Uam-ro 277beon-gil, Dong-gu, Daejeon, Republic of Korea
Tel : +82 70-8211-1281 Fax : +82 70-7585-1284



Gimpo Plant 1

60, Mosan-ro 13beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, Republic of Korea
Tel : +82 70-5015-2189 Fax : +82 31-983-7793



Bucheon Plant 2

Room 809, 247 Yangji-ro, Sosa-gu, Bucheon-si, Gyeonggi-do, Republic of Korea
Tel : +82 70-8657-0437 Fax : +82 70-4833-0445



Geumsan Plant 3

1222 Gunbuk-ro, Chubu-myeon, Geumsan-gun, Chungcheongnam-do, Republic of Korea
Tel : +82 41-751-1535 Fax : +82 70-4141-2520

INTEGRATED CRYOGENIC FREEZING SOLUTION

FROM PRE-COOLING TUNNEL TO IQF SPIRAL FREEZING

Fully Automated Continuous Production System



One-Line Continuous Freezing System

- ✓ Continuous pre-cooling and IQF flash freezing of non-packaged products.
- ✓ Minimized labor / Maximized productivity
- ✓ Customized design for each site

Why SEATECH?

- ✓ Proven experience and technical expertise
- ✓ In-house design, manufacturing, and service
- ✓ Integrated automation system engineering

Contact

- ✓ TEL. +82 31-983-7717
- ✓ E-mail : kfreezer@st-group1.com
- ✓ <https://kfreezer.st-group1.com>





SEATECH CO., LTD

Ultra Low Temperature Engineering

Global Industrial Freezing Solutions

ISO 9001 | ISO 14001 | ISO45001 | **IAS**