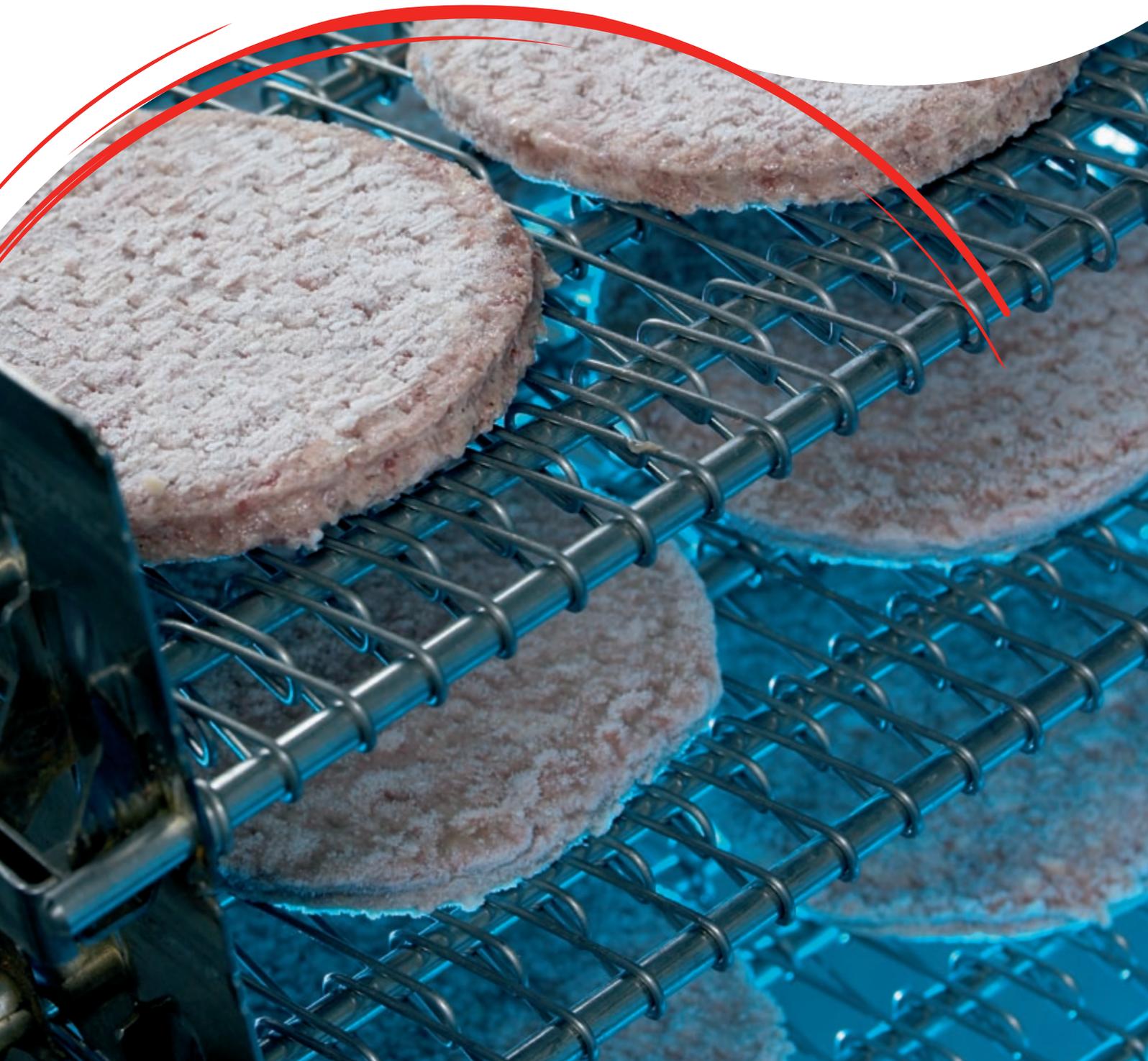


# Frigoscandia Equipment Flat Product Freezer

High-throughput freezing for thin, flat products



# Cryogenic quality. At less than half the cost.



## Your investment should pay off quickly.

Do you need high-quality freezing for your thin, flat food product?

You may already know that the cryogenic method gives very good results. But cryogenic consumables (liquid nitrogen) are an ongoing burden that never stops. The more you produce, the more it costs.

To improve profits at the same time you uphold your quality and growth ambitions, take the same step that has helped many hamburger patty producers to cut freezing costs in half – the Frigoscandia Equipment Flat Product Freezer from JBT FoodTech.

## Simple, ingenious and cost-effective

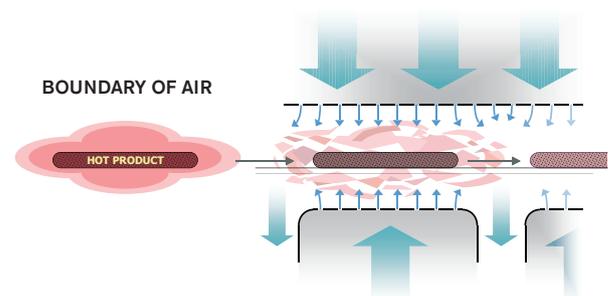
In a process called impingement freezing, the Flat Product Freezer incorporates modular straight-belt conveyors that achieve the holding time of the product being frozen. An impingement freezer takes the same or less floor space and ceiling height as a cryogenic tunnel with a matching line capacity.

The patented impingement technology utilizes thousands of high velocity jets of air directed at the top and bottom of the product. These air jets blast away the boundary layer of air that holds heat around the product, resulting in very fast freezing times.

All the beneficial effects of cryogenic freezing are matched or exceeded, at much lower cost and with much higher flexibility.

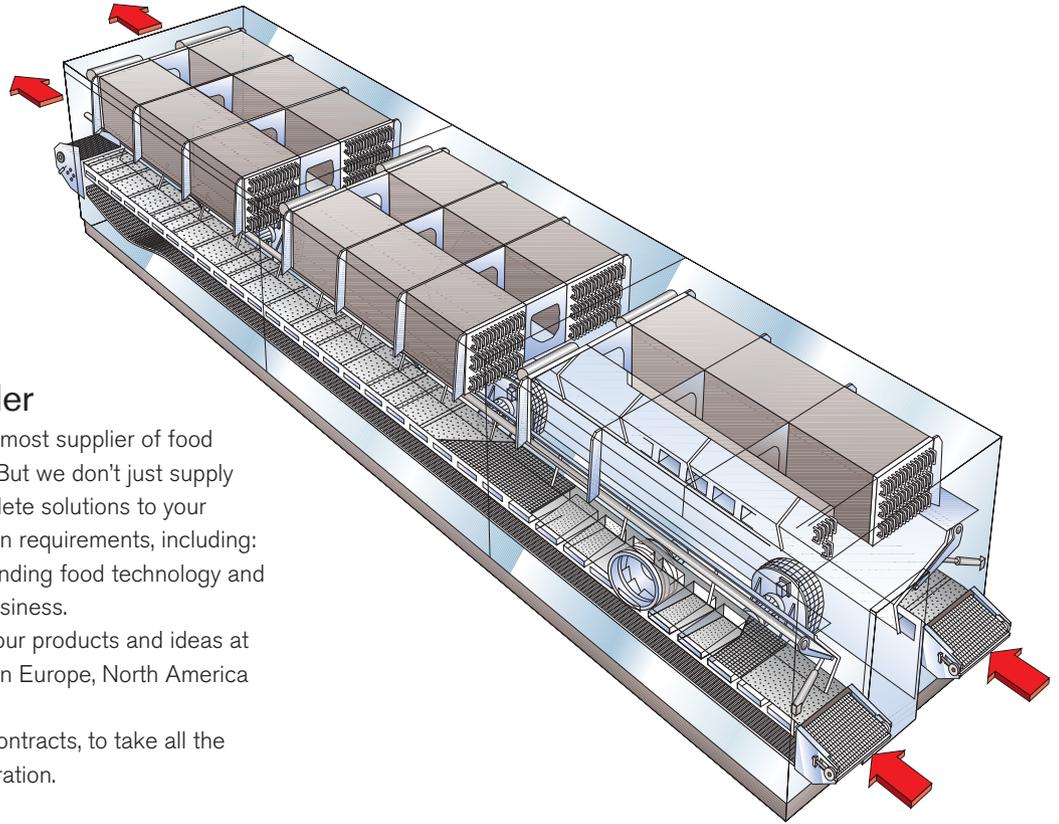
## The throughput

Available with from 2 to 7 modules, the Flat Product Freezer fulfills your hamburger freezing needs while giving you greater growth potential. Below are some typical freezing capacities\*. Contact your JBT FoodTech representative for specific details and a calculation of payback time.



10:1	45 gr	ø 90 x 6 mm	600 kg/h per module
1/4 lb	113 gr	ø 116 x 11 mm	500 kg/h per module

\* Hamburger, in/outfeed temp -1/-18°C, at -40°C evaporation temp NH<sub>3</sub>



## Your solutions provider

JBT FoodTech is the world's foremost supplier of food freezing and chilling equipment. But we don't just supply hardware – we can deliver complete solutions to your frozen and chilled food production requirements, including:

- Expert advice based on outstanding food technology and unrivalled experience in the business.
- Opportunities for you to test your products and ideas at our Food Technology Centers in Europe, North America and Asia.
- Long-term, proactive service contracts, to take all the worry out of your freezing operation.

So why not get in touch with us today? We look forward to serving you!

## The advantages

**Quality** – Impingement freezing is universally acknowledged to deliver a frozen product quality that is every bit the equal of cryogenic freezing – instant freezing that preserves taste, texture and appearance, and that seals in moisture and minimizes drip loss.

**Superior product handling** – Thanks to the straight belt, your product is frozen completely flat and remains perfectly aligned, with gentle handling and no product transfers.

**Hygiene** – Hygiene-by-Design™ construction ensures quick turnaround without compromising thorough cleaning. Stainless steel freezing area, with rounded corners and sloped surfaces, eliminates risk of bacteria build-up.

**Flexibility** – The Flat Product Freezer was originally designed to perfectly fit two 700 mm forming machines. Today, it is the standard configuration for high-volume, high-throughput formed products like hamburger patties. Its modular design makes it easy and quick for you to expand production capacity as your customer demand and business grows.

**Yield** – In addition to fast, efficient freezing, the Flat Product Freezer also ensures very low dehydration for hamburger patties (0.4%, which is better than cryogenic tunnel freezers), delivering a juicier, more tender product to the consumer, and a higher yield to you.

**Return on investment** – The patented impingement technology offers superior heat transfer and simplicity of construction. Thanks to its high throughput and low downtime, average payback time for a Flat Product Freezer is very quick. After that, its low maintenance overheads mean your freezing operation is generating profit every day.

**No changes necessary** – If you already operate a cryogenic freezer, replacing it with a Flat Product Freezer is a 'breeze'. The footprint is practically identical, as is the machine height. No plant modifications are necessary.

## Technical Data (SI-system)

Number of modules/belts	2/T	3/T	4/T	5/T	6/T	7/T
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Belt						
Vertical clearance for product	Up to 50 mm					
Type	Stainless wire mesh					
Width, total (mm)	730, effective 700					
Effective belt area (m <sup>2</sup> )	11.3	17.2	23.1	28.9	34.9	40.7
Belt speed (m/min)	3.5–17			4–20		

Electrical data						
Main voltage	3 phase 400 V or 415 V, 50 Hz or 3 phase 440 V, 60 Hz					
Normal power consumption (kW)	40	60	77	95	113	131
Max. power requirement (kVA)	50	75	96	120	141	164
Baseload (kW)	48	68	85	103	120	137

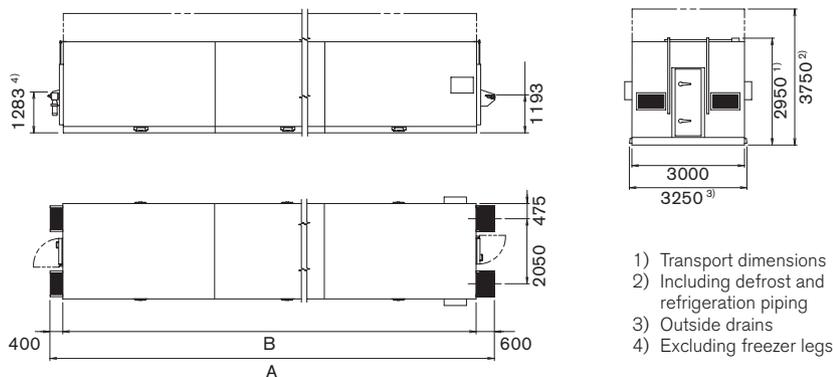
Evaporator and fan defrosting system						
Defrosting media	Water*					
Minimum water temp (°C)*	15					
Evaporator defrost flow rate (l/min)*	400					
Evaporator defrost time (min)	4	6	8	10	12	14
Min. evaporator defrost pressure (bar)	1.5					
Fan defrost flow rate (l/min)	50	75	100	125	150	175
Fan defrost time (min)	19	21	23	25	27	29
Fan defrost pressure (bar)	3.5					

Belt rinse system	
Belt speed (m/min)	10 (recommended, to be set)
Flow rate (l/min)*	100
Pressure (bar)	3.5
Min. water temp (°C)*	15

Noise emissions	
According to Machinery directive 89/392/EEC, 1.7.4(f)	Maximum 76 dB(A)

\* Must be potable water

Modules	A	B
2	9610	8610
3	13810	12810
4	18010	17010
5	22210	21210
6	26410	25410
7	30610	29610



- 1) Transport dimensions
- 2) Including defrost and refrigeration piping
- 3) Outside drains
- 4) Excluding freezer legs