



## Fish and seafood processing



Increase your profits in  
fish and seafood processing

# By adding value and throughput to your process

Thanks to increasing demand from health-conscious consumers, fish and seafood processing is growing like never before.

You make the best margins by presenting your product to the end-market in the freshest or most visually appealing condition possible. This is where JBT specializes. For close to half a century, we have helped fish and seafood processors increase throughput and profit while simultaneously improving presentation, processing hygiene and flexibility in production.

We specialize in systems – portioning, value-added processing and chilling or freezing – that deliver high yield and throughput, and premium food product quality, with minimal maintenance. To ensure your profitability, we back our offering with focused processing know-how that helps you add value while increasing throughput.

## Customize the technology

The secret of success and profitability lies in treating each product individually.

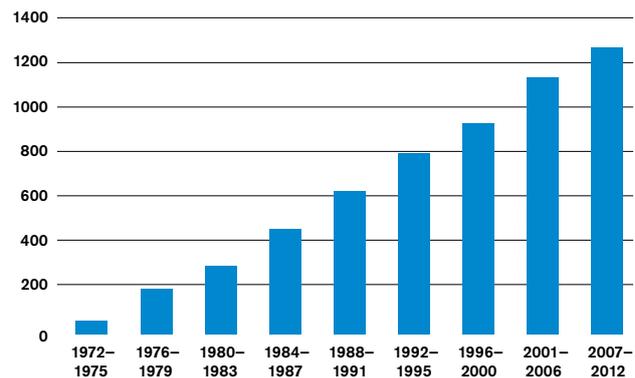
Different fish and seafood products have different processing parameters. The processing of scallops, for example, is totally different from salmon fillets, value-added fish sticks or ready meals. JBT has developed the right technology for each application and for each step of the value-adding process, from portioning through to chilling and freezing.

## Safety first

You cannot risk safety – either of the consumer of your food products, or the personnel in your processing operation. The potential damage is just too great – not least to your reputation and profit-making potential.

That's why safety is built into our equipment starting at the drawing board. Our equipment has always set industry standards for food safety and safe, user-friendly operation.

Number of units installed for fish and seafood applications, 1972–2012 (accumulated)



## Teamwork wins

JBT knows a lot about food, and we learned long ago that it pays to share our knowledge with our customers.

Our experienced food technicians are at your service for pilot- and full-scale testing, on your own premises or at any of our state-of-the-art Food Technology Centers in Europe, Asia and North America.

When teamwork is a key component of your product offering and business philosophy, you do your best to always ensure your customer is more than satisfied.



## Portioning

The quickest way to raise profit is to get the highest yield from your valuable raw materials. With our DSI Accura™ waterjet portioner, you can achieve specific weight and size specifications in virtually any shape, with minimal product loss, at belt speeds of up to 25 meters (80 feet) per minute.



## Frying

Engineered specifically for processors who run a variety of products on one line, the Stein M-fryer delivers increased food safety and processing safety, as well as greater operating profitability and flexibility.



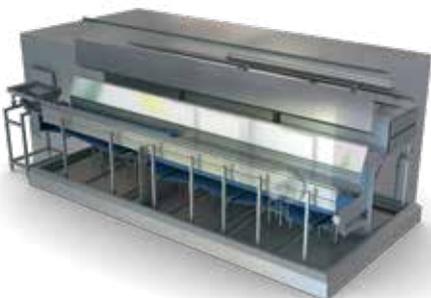
## Impingement freezing

Whether onboard ship, or close to retail, use the Frigoscandia Equipment Nautica™ and ADVANTEC™ impingement chillers and freezers to rapidly super-chill, crust-freeze and stabilize, or to quickly and cost-effectively freeze a wide range of high-value thin or flat products like shrimp and fish fillets.



## Spiral freezing

For maximum throughput in a limited footprint, and flexibility to achieve food-focused freezing of everything from fish fillets to ready meals, Frigoscandia Equipment GYRoCOMPACT® spiral freezers are your best choice.



## IQF freezing

To retain high value while cost-effectively freezing soft product like shrimps, mussels and scallops, you must still freeze each product individually. With the true fluidization of the Frigoscandia Equipment FLoFREEZE® IQF freezer, you get low dehydration and perfect IQF results, because each product is frozen in mid-air.



## Pre-freezing

By using the Frigoscandia Equipment SuperCONTACT® pre-freezer to quickly contact-freeze the bottom surface of sensitive products like fish fillets, large scallops and squid, you eliminate belt marks and product deformation during the final freezing process. Combine it with a spiral or impingement freezer.



## Get the most from your product

Use significantly less raw product to create the same finished amount.

JBT's DSI waterjet portioning is the most accurate portioning available today. Its computer scanning and 3D machine vision evaluates each piece of raw product in a split-second, enabling it to optimally cut to the pre-programmed shape and size, at belt speeds of up to 25 meters (80 feet) per minute.



## Match consumer demand

For the modern consumer, ready-to-eat products are a favorite. For processors, they are an excellent way to add value – and profit – to less expensive fish and seafood products.

JBT's Stein coating and frying lines help you to maximize food product value at the same time you keep operation and maintenance overheads to a minimum. They are engineered specifically to match the needs of global fish and seafood processors.



## Get perfect IQF shrimp

Both institutional and retail customers value high-quality frozen shrimp.

True fluidization means that products are individually frozen, ensuring the final consumer hassle-free thawing of a 'fresher-than-fresh' product. With Frigoscandia Equipment IQF freezing, you get maximum throughput and flexibility, as well as superior product quality, thanks to two independently controlled belts and precise control over a range of airflow and belt characteristics. Even wet, sticky products are handled gently, and quickly frozen without destroying appearance.



## Treat your seafood with care

Frozen seafood can demand a premium price, if you get it to market in the right condition.

The risk is that it is sensitive. Freezing too slowly will damage texture and reduce value. Frigoscandia Equipment impingement freezing quickly encapsulates freshness and quality in delicate seafood products like in-shell prawns and mussels, giving you a superior product every time.

To achieve high-volume throughput on less delicate seafood products, consider our IQF freezers.



## Give delicate products the best chance

If frozen, delicate fish fillets need sensitive handling, both to maximize yield and to ensure the best appearance at presentation.

With JBT's Frigoscandia Equipment impingement freezers, you can reduce dehydration by 1% or more, and drip loss by up to 4%, at the same time you eliminate 'wrinkling' with the straight belt layout.

For even higher throughput, pair Frigoscandia Equipment contact freezing with our world-reknowned self-stacking spiral freezers.



## Make a winner of ready meals

Frigoscandia Equipment spiral freezing is the best, most cost-effective way to achieve high-throughput freezing of ready meals.

Our self-stacking spiral freezers handle a wide variety of tray sizes and materials, and work equally well lid-on or lid-off – unique vertical airflow ensures that every individual package is frozen uniformly. Not least, products come out in exactly the same pattern they were loaded onto the belt, thus simplifying downstream packaging.



## Super chill fish and seafood

'Fresh' is the key word in premium pricing of raw seafood at retail. Achieve the lowest temperatures possible without internal cell crystallization, by super chilling fish and seafood. This minimizes enzymatic reactions and virtually eliminates microbial activity.

Frigoscandia Equipment impingement chilling very quickly lowers the temperature of each individual product, giving you high quality, prolonged shelf life, and greater food safety. Because it makes ice or gel packs unnecessary, super chilling also enables better packaging alternatives and more cost-effective logistical strategy.



## Glaze, for protection and profit

Fish and seafood is often processed halfway around the world from its final consumer. To ensure an attractive, profitable product at retail, you must help it to travel securely.

Glazing is the answer. It protects against dehydration and oxidation in transit and storage, adding value to your product.

JBT can offer you a complete range of glazing alternatives and configurations, from dual-belt impingement freezing, which enables simultaneous freezing and re-freezing, to complete lines comprising infeed shaker, inspection conveyor, freezer, glazer, hardening conveyor and re-freezer. Talk to us about multiple glazing!

The tables below display representative processing capabilities of our most popular equipment. Please consult your JBT representative for more specific information, or information about other equipment.

### Frigoscandia Equipment ADVANTEC™ impingement freezer & chiller

Product	Temperature range (°C)	ADVANTEC 1250-1 *	ADVANTEC 1800-1 *
Tiger prawns, raw, peeled, tail on), 31–40 pcs/lb	+5 to –18	450 kg/h	650 kg/h
Plaice fillet, 70 g	+5 to –18	350 kg/h	500 kg/h
Salmon fillet, 1.5 kg	Super chilling, in feed +5	1200 kg/h	1725 kg/h

### Frigoscandia Equipment GYRoCOMPACT® Classic spiral freezer

Product	Temperature range (°C)	GC 400, 23 tiers	GC 600
Fish fingers, 95 g	+40 to –18	450 kg/h	1260 kg/h
Tiger prawns, raw, peeled, tail on), 11–15 pcs/lb	+5 to –18	470 kg/h	1310 kg/h
Octopus in tray, no lid, 500 g	+5 to –18	310 kg/h	1010 kg/h

### Frigoscandia Equipment GYRoCOMPACT® M-series spiral freezer

Product	Temperature range (°C)	GCM7/2-08-35-22	GCM9/3-08-35-26
Fish gratin, no lid, 450 g	+10 to –18	1600 kg/h	2700 kg/h
Shrimps in tray, no lid, 200 g	+10 to –18	1900 kg/h	3300 kg/h
Cod loin, naked, 300 g	+10 to –18	2000 kg/h	3400 kg/h

### Frigoscandia Equipment FLoFREEZE® S IQF freezer

Product	Temperature range (°C)	FLoFREEZE S1	FLoFREEZE S2
Shrimps, peeled, cooked, 100–200 pcs/lb	+15 to –18	975 kg/h	2210 kg/h
Shrimps, head off, shell on, cooked, 30–50 pcs/lb	+15 to –18	525 kg/h	1190 kg/h
Mussels, shell off, cooked, 10 g	+15 to –18	825 kg/h	1870 kg/h

### Stein M-fryer

Product	Cook time	M6-6 TFF Fryer	M10-8 TFF Fryer
Fish sticks, breaded, 28 g	30 sec, 3.9 kg/m <sup>2</sup>	1500 kg/h	3400 kg/h
Fish portions breaded, 70 g	30 sec, 5.9 kg/m <sup>2</sup>	2300 kg/h	5100 kg/h
Shrimp, breaded, 11 g	25 sec, 2.4 kg/m <sup>2</sup>	1200 kg/h	2600 kg/h



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