

# GEA A-TEC SPIRAL FREEZERS AND CHILLERS

Hygienic food processing



# Extensive experience in freezing and chilling for food processing

Here at GEA we understand that the food processing industry needs to stay innovative and develop new recipes and processes that meet rapidly changing consumer demands. You expect robust and reliable freezer and chiller solutions that can help to ensure high quality chilled and frozen food products, at every processing stage.

## **Optimum freezing and chilling solutions**

We have developed a highly configurable, versatile freezer and chiller portfolio that can provide the ideal solutions for your most complex industrial freezing and cooling needs.

Backed by decades of proven knowhow in food freezing and chilling, our experts can customize freezer and chiller solutions that will meet your most stringent requirements for safety and hygiene, cost and energy efficiency. All our technologies are designed to offer top reliability and performance, and long-term sustainability. Talk to your local GEA representative to find out more about our dedicated technology center, where you can work with our specialists to trial your products on the latest GEA freezer and chiller equipment.



# Superior hygiene by design, high uptime and product yield

GEA A-Tec spiral freezers are designed to match the needs of your product characteristics, production planning, facility space and line layout.

## Customized solution

- Modular configuration.
- Belt, floor, and enclosure type options to match application requirements.
- Extended run-time from single shift to 14 days operation with proven frost management systems: Static Pressure Control System (SPCS) and Sequential Defrost (SD) options.
- Low profile top drive option addresses space and headroom constraints.

## Safe product handling

- Open profiles and fully welded structure.
- Design answers the most stringent hygiene requirements with fully welded floor and fully welded enclosure option.
- Effective solutions from belt cleaning to full recirculating cleaning system that acts like a giant dishwasher.
- Option for fan and drive motors outside the enclosure for improved access and hygiene.

## High yield with horizontal airflow

- Even airflow and temperature distribution across all tiers for optimum heat transfer and minimum product dehydration.
- High performance, independent from product loading variation.

## Low total cost of ownership

- Optimized evaporating temperature for minimum energy consumption.
- Simple drive system, non-proprietary parts, reliable structure for low maintenance costs.
- Option for external fan motors for ease of maintenance.

## A-Tec capacity range

### COMPACT



### MODULAR



1,500 lb/h

Fully built, shipped,  
Plug-in ready

2,000 lb/h

Site built

+18,000 lb/h

### Configurable solutions to match different requirements

The standard spiral belt mechanisms are defined by belt width, turn radius, number of tiers and tier pitch.

- Overall belt widths are available from 30" to 52" to match those of typical processing lines.
- Modules can be configured with different turn radius dependent upon space constraints and site footprint.
- A-Tec solutions can be supplied with 15 to 38 tiers, and single drum or twin drum configurations, to meet just about any capacity.
- Tier pitch can be configured from 110 mm to 270 mm, to accommodate different product heights.



### A-Tec spiral standard matrix

<b>Belt width (inches)</b>	30	36	42	48	52
<b>Usable belt width with stainless steel belt (in)</b>	27	33	39	45	49
<b>Usable belt width with plastic belt (in)</b>	28	34	40	46	50
<b>Tiers range</b>	15 to 38				
<b>Tier pitch range (mm)</b>	110 to 270				
	Drum diameter (in)				
	<b>103</b>	1,72			
	<b>116</b>	1,93	1,61		
	<b>135</b>	2,25	1,88	1,61	
<b>Available turn radius</b>	<b>150</b>		2,08	1,79	
	<b>167</b>			1,99	1,74
	<b>187</b>			2,23	1,95
	<b>212</b>			2,52	2,21
	<b>240</b>			2,86	2,50
					2,31

Models available with DDS option.

# Frozen meat, poultry and fish

A-Tec chillers and freezers use industry-leading horizontal airflow technology to surround every surface of the product.




## Supporting innovative recipes and products

In today's global food marketplace consumers expect their supermarket fridges and freezers to offer tasty, high protein meal choices for busy lives. Fast food outlets and restaurants also expect the highest quality meats, poultry and fish for their recipes. GEA's performance equipment and solutions for forming, frying, cooking, grilling and freezing, has allowed our customers to develop innovative new processes and products to meet changing market trends.

## Locking in freshness

Products that have been formed, coated and heat treated need to be preserved through chilling and freezing pro-

cesses so that they retain quality. GEA's portfolio of A-Tec spiral freezers and chillers can be configured to match your plant layout, loading patterns and production capacity. Our technology uses horizontal air stream at a precisely controlled temperature to surround every surface of product, and ensure that freshness, weight, appearance and taste are retained. Designed to be space-saving and compact, GEA's A-Tec spiral freezers and chillers guarantee optimum hygiene, and are built around state-of-the-art refrigeration and freezing technologies to ensure reliability and efficiency, reduced freezing times and lower energy consumption. Our customers save on energy costs, time, and ultimately cost per pound.

Products		Typical product dimensions [in] L x W x H	Typical product weight [oz]	A-Tec 30" Capacity* [lb/h]	A-Tec 42" Capacity* [lb/h]
<b>Poultry</b> 	Nuggets, battered and breaded, par-fried, frozen	1.5" x 1" x 0.5"	1	1,700-6,600	6,600-18,000
	Tenders, battered and breaded, par-fried, frozen	4" x 1" x 0.5"	1	1,900-6,800	6,100-18,000
	Filets, battered and breaded, par-fried, frozen	5.5" x 3.5" x 0.75"	4	1,600-6,600	5,300-18,000
	Nuggets, battered and breaded, fully cooked, frozen	1.5" x 1" x 0.5"	1	1,500-5,500	4,800-18,000
	Tenders, battered and breaded, fully cooked, frozen	4" x 1" x 0.5"	1	1,600-6,600	5,300-18,000
	Filets, battered and breaded, fully cooked, frozen	5.5" x 3.5" x 0.75"	4	1,400-5,300	4,600-18,000
<b>Meat</b> 	Beef patties, raw, frozen	4"(D) x 3/8"(H)	4	1,500-6,500	4,800-14,000
	Beef patties, fully cooked, frozen	14"(D) x 3/8"(H)	4	1,300-4,600	4,200-12,300
	Meat ball, raw, frozen	Sphere 1"	0.28	1,500-6,500	4,800-14,000
	Meat ball, fully cooked, frozen	Sphere 1"	0.28	1,300-4,600	4,200-12,500
<b>Fish</b> 	Filets, raw, frozen	8" x 3.5" x 0.5"	4	1,400-5,100	4,400-13,400
	Fingers, battered and breaded, par-fried, frozen	4" x 1.25" x 0.6"	1	2,500-9,000	7,900-14,000
	Filets, battered and breaded, par-fried, frozen	5.25" x 4" x 0.7"	6.6	2,500-9,200	8,100-14,000

\*Capacity figures are indications for basic estimation purpose.





# Bakery products

GEA chilling and freezing technologies gently handle your bakery products to preserve shape, texture and color.

## Advanced technologies and specialist support









The bakery sector relies on advanced technologies to ensure flawless product handling at every stage, from cooling to freezing. Whether you are producing waffles, pancakes, baked bread, cakes or pizzas, we understand that your primary objective is to retain optimal quality and preserve product shape, texture, and color. Our application specialists can help you to select energy efficient, sustainable cooling and freezing solutions that will best meet your key product and process requirements.

## GEA technologies offer many advantages:

- Precisely controlled air temperature prevents freezer burn.
- Gentle product handling minimizes belt marking.
- High uptime with up to 14 days continuous operation.
- Efficient, effective frost management system.
- Configurations for high capacity, and up to 8" product height.

Our engineering experts will consult with you to develop technical solutions that will help to ensure maximum reliability and optimal performance. Our superior horizontal airflow technology provides the most efficient heat transfer to the product while minimizing energy consumption.



Products	Typical product dimensions [in] LxWxH	Typical product weight [oz]	GEA A-Tec solution	Product treatment	Capacity range* [lb/h]
<b>Waffle</b> 	4.5"(D) x 0.75"(H)	1.34	Double drum A-Tec DDS spiral freezer	Freezing from +190°F to -10°F	2,000-6,500
<b>Subway roll</b> 	11.0" x 1.25" x 1.25"	6.5	Single drum A-Tec DDS spiral freezer	Freezing from +70°F to 0°F	2,200-14,000
<b>French toast</b> 	4.25" x 4.25" x 0.75"	2.5	Single drum A-Tec DDS spiral freezer	Freezing from +140°F to 0°F	2,000-6,000
<b>Baked bread</b> 	10" x 3.5" x 2.7"	16	A-Tec spiral ambient cooler. Single drum or twin drum  Single drum A-Tec spiral freezer with sequential defrost for 6 days in operation	Cooling from +195°F to +110°F  Freezing from +110°F to -10°F	2,200-6,600
<b>Croissants</b> 	6" x 1.6" x 1.4"	2.6	Double drum A-Tec spiral	Adjustable temperature from: +75°F to +105°F Adjustable air humidity: 70 to 90%	2,200-14,000
<b>Cookie dough</b> 	2.5"(D) x 1.5"(H)	1.7	Single drum DDS spiral freezer	Freezing from +70°F to 0°F	2,000-20,000
<b>Pancakes</b> 	5"(D) x 0.46"(H)	1.83	Single drum lo-tension spiral freezer	Freezing from +140°F to 0°F	2,000-6,000
<b>Pizza with topping</b> 	12"(D) x 2"(H)	33	Double drum A-Tec DDS spiral freezer	Freezing from +40°F to 0°F	3,000-30,000

\*Capacity figures are indications for basic estimation purpose.

# Ready meals

GEA can configure A-Tec freezing and chilling solutions for any type of ready meal, from in-flight dinners and prepacked sandwiches, to soup and pasta.

## Perfect solutions for prepared meal

Ready meals became popular in the 1950s when families would gather round the television and eat ready-prepared 'TV dinners' on trays with peel-off lids. Things have come a long way since then, and the ready meals market is now focused on using fresh, healthy ingredients and recipes, with fewer preservatives, additives, salt and fat.

GEA is offering a wide range of equipment for ready meal preparation lines including forming, slicing, cooking prior to chilling or freezing. GEA can configure the ideal A-Tec freezing and chilling solution for every type of ready meal product, from in-flight meals and sandwiches, to soups and pasta.

Our technologies ensure that your products keep their quality, taste and appearance, whether packaged in containers with or without lids, in bags, trays, boxes or pouches.

## Energy saving solution

GEA chilling technology precisely controls and monitors the ambient temperature to prevent surface freezing. The horizontal airflow is more effective than vertical airflow for large trays, as all surfaces of the product container are evenly surrounded by air at the correct temperature.

GEA freezers and chillers also offer optimum energy efficiency, so that our customers can be assured of cost savings, while improving environmental sustainability.

Products	Typical product dimensions L x W x H [in]	Typical product weight [oz]	GEA A-Tec solution	Product treatment	Capacity range* [lb/h]
<b>Meal tray</b> 	7.5" x 5.75" x 1.5"	10	Double drum A-Tec DDS spiral freezer	Chicken and Sauce at +45°F, Rice at +90°F to 0°F	2,000-10,000
<b>Corn dog</b> 	2" Dia. x 4" includes 2/3/8" stick	2.67	Single drum A-Tec DDS spiral freezer	Freezing from +150°F to 0°F	2,000-12,000
<b>Soup in pots</b> 	4" Dia. x 5.5"	21	Single drum A-Tec DDS spiral freezer	Freezing from +150°F to 0°F	2,000-12,000

\*Capacity figures are indications for basic estimation purpose.





# Dairy applications

A-Tec freezer and chiller technologies ensure that every milk, cream and cheese-based food is processed at the optimum temperature to retain flavor and increase shelf-life.




## Precise temperature control for safe, tasty product

GEA supplies both small manufacturers and industrial-scale producers with high tech equipment for homogenizing, separating, metering, filling, chilling and freezing all types of raw milk and milk-based dairy goods. Backed by decades of experience working with dairy processing industry, we design, engineer, equip and install complete plants. Processing safe, fresh-tasting frozen and chilled dairy products depends on hygienic equipment and reliable processes.

Consumers expect a wide choice of ice creams, cheese and yogurts for every day, and for those special treats. GEA chillers and freezers are designed to provide the exact temperature to milk-based products during every stage of processing, to preserve their texture and appearance. Our freezing technologies ensure that ice cream is frozen quickly and uniformly to form small ice crystals for perfect consistency. The temperature in our chillers is finely controlled and monitored to ensure that dairy products such as cheese retain their perfect form and texture.

## Improve shelf-life and reduce waste

GEA's chilling and freezing systems ensure top product quality, which improves product shelf-life and reduces waste, while our energy efficient technology reduces energy use and costs. And of course, GEA's spiral freezer and chiller solutions meet the most stringent hygiene requirements. We construct our equipment with fully welded floors, enclosures and conveyors, together with full zone recirculating cleaning system. The option of fully welded enclosures means that the equipment can withstand 160°F heat treatment for pasteurization.

Products	Typical product dimensions L x W x H [in]	Typical product weight [oz]	GEA A-Tec solution	Product treatment	Capacity range* [lb/h]
<b>Ice cream</b> 	14" x 10" x 4"	145	Double drum A-Tec DDS spiral freezer	Freezing from +25°F to 0°F	3,000-15,000
<b>Milk curds</b> 	15" x 18" x 4"	335	Single drum A-Tec spiral chiller	Chilling from +95°F to +40°F	3,000-10,000
<b>Pizza cheese</b> 	13" x 12" x 4"	353	Double drum A-Tec spiral chiller	Chilling from +95°F to +50°F	3,000-10,000

\*Capacity figures are indications for basic estimation purpose.

# Modular configuration

Benefits for customers include fast installation on site, flexibility to adapt to space constraints, efficient, resource-saving cleaning and reduced maintenance.

## Customized to specifications

GEA A-Tec spiral freezer solutions have been developed around a proven modular concept, and can be configured to fit in with any existing plant layout, capacity, and upstream and downstream processes. Available in standard belt widths to match typical food applications, A-Tec freezers can be supplied with the optimum turn radius, number of tiers and pitch to meet any process requirement, and are constructed to offer optimum hygiene and cleaning system options.

## High hygienic design and ease of maintenance

GEA A-Tec spiral freezers are supplied with modular, fully welded flooring that doesn't require floor heating, and helps to ensure that there are no dirt traps that might compromise hygiene. The option for fully welded stainless steel enclosure panels removes the need for silicone joints, which aids compliance with the most stringent hygiene requirements, eases maintenance and makes thorough cleaning easier and faster. Installing fully welded enclosures also makes it possible to apply heat treatment up to 160°F.

### Belt options



Lo-tension stainless steel



Lo-tension plastic



Direct Drive System plastic

### Cleaning system options



FIP (foam-in-place)



Full recirculating cleaning system

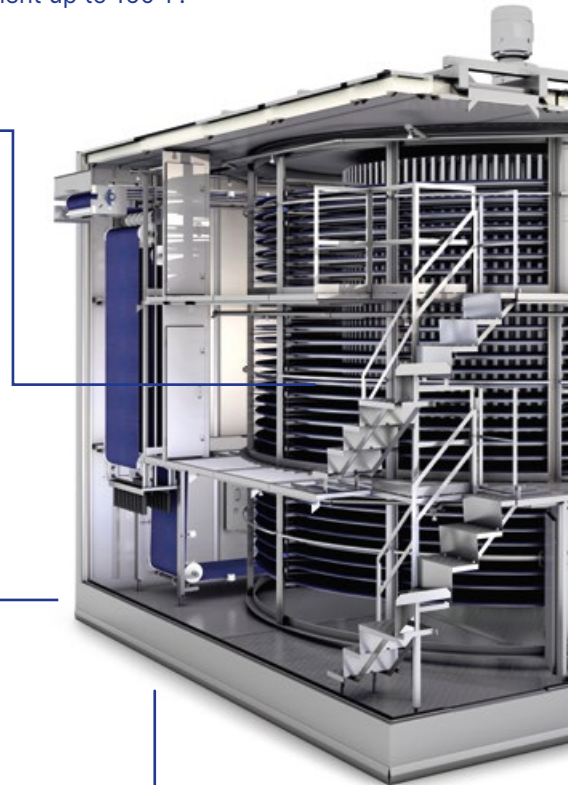
### Spiral drive options



Top drive



Bottom chain drive



A-Tec spiral freezer technology features proven external drive configuration, and the option for external fan motors. External motors reduce the number of component surfaces within the unit, which also helps to maximize hygiene, and makes cleaning and maintenance much easier, particularly if the inside of the freezer is running at -25°F.

A-Tec freezers can be configured to match height requirements or restrictions, and can be equipped with a top spiral drive or bottom chain drive.

**Fan motor option**



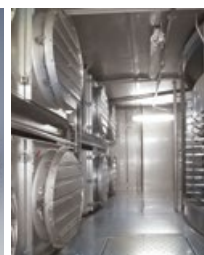
External fan motors



**Frost management options**



Shift defrost



Sequential defrost



Static Pressure Control System (SPCS) as standard

**Enclosures options**

**a) GEA panels**



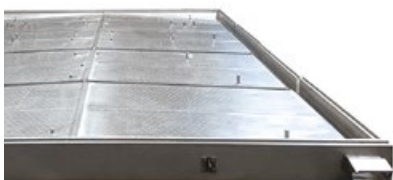
Fully welded inside and outside

**b) Regular purchased panels**



White inside / White outside

**Floor options**



Fully welded modular as standard



Stainless Steel inside / White outside



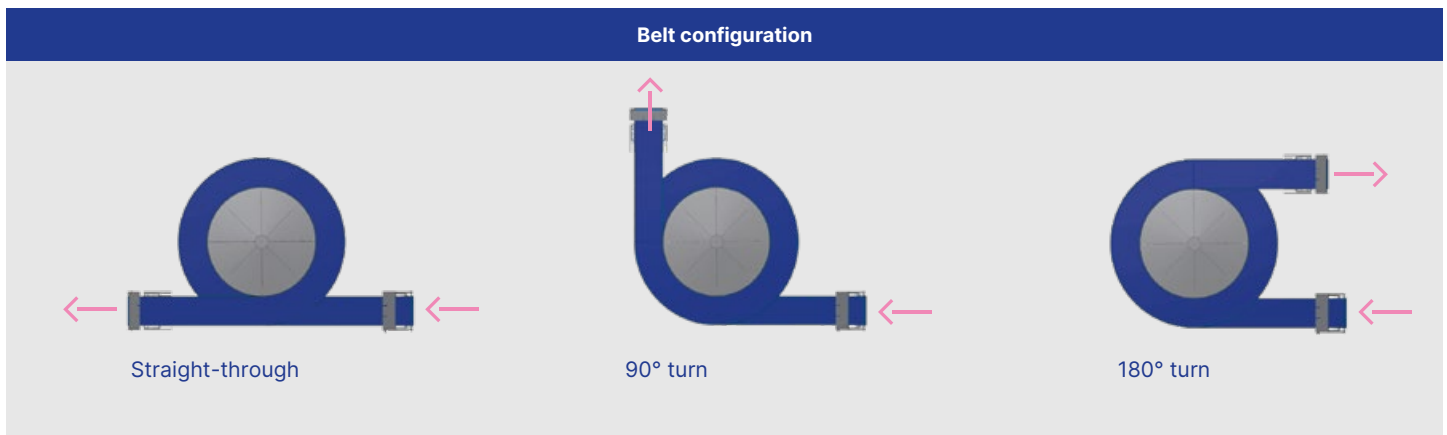
Stainless Steel inside / Stainless Steel outside

# Process flow design

## Comprehensive spiral configuration options for perfect integration in your processing line.

Every GEA A-Tec spiral freezer is designed to fit in with upstream and downstream processes and in accordance with plant layout and available space.

Freezer infeed/outfeed orientation, and spiral orientation can be configured to make your process lines seamless and efficient, and to ensure fast installation with less down time and with minimal disruption to the rest of the line.



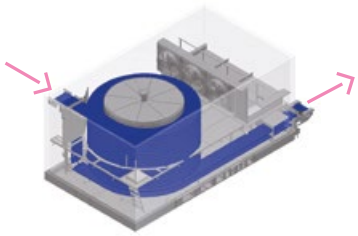


**A-Tec freezers reduce total cost of ownership**

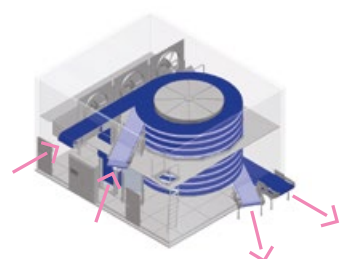
All GEA equipment is designed for robust, maintenance-friendly operation. Industry-leading evaporator technology reduces energy consumption, and our configurable cleaning system options reduce water usage. Our spiral freezer technology is also constructed using non-proprietary parts that guarantee minimal maintenance over a 10 year period, which further increases cost-effectiveness. GEA customers can have complete confidence in the reliability of all our systems right from day one, and for the whole lifespan of the equipment.

**Drum configuration**

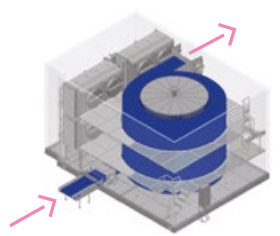
**Single Drum**  
Down-go



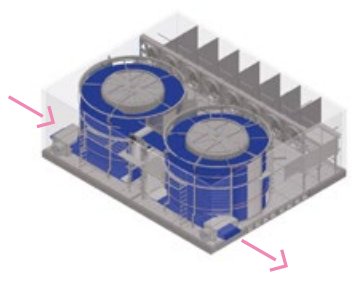
**Single Drum**  
Twin-belt with two separate infeed lines



**Single Drum**  
Up-go



**Double Drum**  
Infeed and outfeed at the same level



# Customer satisfaction is our main objective



At the GEA Technology Center, training programs are conducted by GEA experts.

## Technology Center

### **Experienced product application team at your service**

Our application experts can test your products using our in-house freezing test facility before you invest. Our Technology Centers located in Richmond BC, Canada, Frisco Texas and Bakel in The Netherlands, offer a wide range of freezer and chiller equipment, and configurable air temperature and airflow conditions to match your processing needs.

We offer comprehensive hands on training and product test programs to support your operational requirements. Data collected during testing can be analyzed by our technology experts to help you to select the right process conditions for your product. We can even ship testing units to your site for product trials under the correct production conditions.

# GEA Service – For your continued success

Working with GEA Service means partnering with a dedicated team of service experts.

Our focus is to build, maintain, and improve customer performance throughout the entire life cycle of the plant and its equipment.

#### **Beginning of Life Services**

Getting you started with seamless support for instant productivity and performance.

#### **Lifetime Services**

Keeping it running with the cost-efficient way of ensuring safety and reliability.

#### **Extended Life Services**

Constantly improving by sharing our knowledge to safeguard your investment.

#### **Consulting & Enhanced Operations**

Together with you by enduring commitment to you and your business.



Made to the minute. Every hour,  
every day, with GEA Service.

