

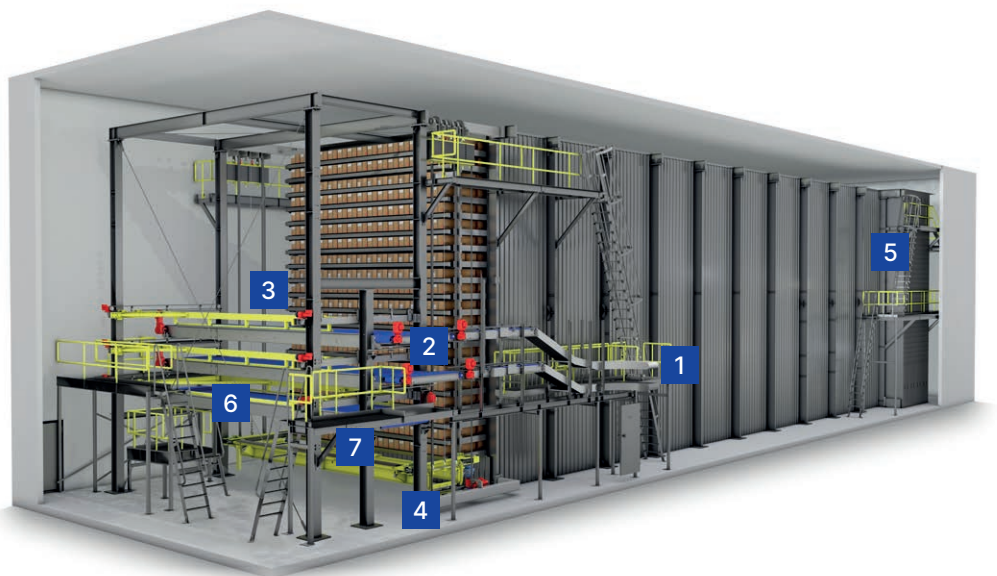
# GEA I-VRT CARTON FREEZERS & CHILLERS

# Optimal flexibility with the Variable Retention

GEA I-VRT can handle simultaneously all your products coming in various sizes and types with different chilling and freezing profiles.

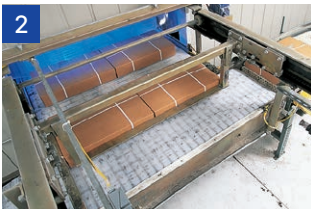
GEA provides automated system for product handling from the production room to the freezer/chiller and on to the palletizing area. Either Food packed in cartons, plastic totes or plastic shrink wrapped, we fully integrate your in-line proces with great benefits:

- Chilling or freezing retention time adapted to each product.
- Optimum product quality through accurate temperature control.
- Full inventory control.
- Minimum labor.
- Cost effective chilling and freezing solution.



## The VRT Process

- 1** Batches accumulate by product specification or retention time on our fully integrated material handling conveyors.
- 2** Load transfers to the VRT infeed conveyor and package tracking is initiated, allowing total inventory control and data capture.
- 3** After product is spaced for optimal airflow, a custom designed sweep arm gently transfers product to and empty shelf.
- 4** The shelf is positioned on the cradle, elevated to the designated level and inserted into the freezer rack without the product being touched.
- 5** Packages pass through the VRT rack system while powerful fans provide the required velocity and end-flow air distribution to ensure efficient heat transfer.
- 6** When the product reaches the retention time required to achieve its pre-set exit temperature profile, the finished shelf discharges as a new shelf is loaded.
- 7** Product transfers onto the outfeed conveyor. The freezing/chilling cycle is complete and the product conveys to a fully integrated automatic or manual palletizing system.



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**GEA I-VRT System Typical Application Data**


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Capacities:	4,500 to 41,000 kg per hour
Enclosure footprint:	12.2 to 48.8 m L x 8.53 to 15.25 m W x 6 to 24.3 m H
Standard shelf sizes:	5.05 m W x 1.27 m L, 7.24 m W x 1.27 m L, 9 m W x 1.27 m L, 9 m W x 1.9 m L + custom
Packages processed:	Cartons, Totes, Nestors, Shrink wrapped packages
Products:	Poultry, Pork, Beef, Ice Cream, Cheese, Yogurt, Ready-meals, Soups, Bakery
Feed rates:	Up to 55 units per minute
Hours of operation:	Up to 24 hours per day / up to 7 days per week
Shelves:	Production specific – from 60 to 700 shelves within a VRT system
Shelf construction:	Galvanized steel frame, corrugated galvanized steel decking and polyethylene wear strips. Shelves are designed for a minimal deflection.
Standard shelf sizes:	Production specific – from 60 to 700 shelves within a VRT system
Storage capacity:	From 3,000 to 34,000 cartons at any one time within a VRT system = 1,000 to 10,200 square meters of storage capacity.
Air flow:	Horizontal airflow - 6m/second over the top of all units. Airflow is baffled and controlled so that it insures even air flow and temperature to all products throughout the rack structure of the VRT system. Counter end air-flow.
Evaporators:	Galvanized or stainless steel / aluminum. Coil banks are stacked, 3 to 7 high.
Fans:	Fans are blow through design, 3 to 4 per bank. Fan sizes are production specific ranging from 9 to 28 fans, each from 3.75 kW up to 8.65 kW.
Refrigeration:	Pumped ammonia, freon or CO2 cascade system.
Suction temperature:	-1.1° C to -45.5° C, depending upon freezer or chiller requirements.
Defrost system:	Typically one defrost cycle per week, predominantly with hot gas, and some with electric or water defrost.
VRT infeed system:	Production mix and capacity specific – 1 to 6 per VRT.
VRT discharge systems:	Production mix and capacity specific – 1 to 3 per VRT at the same end or opposite ends of the VRT system. This is customer specific for the optimum product flow for their application and facility.
Platforms and ladders:	Platforms and ladders are supplied within the VRT enclosure to access the in-feed and out-feed conveyors, as well as the upper elevators assemblies and other high level components.
Construction:	Galvanized Steel – bolt together assembly.
Safety:	All moving parts within the VRT are painted yellow. Access into the VRT freezer enclosure is restricted such that the VRT must be isolated prior to personnel entry. Drives external to the VRT are guarded and a controlled shut-down of the VRT occurs whenever an access door is opened.
Electrical and control equipment:	Each VRT system has its own dedicated Allen Bradley Processor. Major operator controls will be accessed via SCADA screens. The operator interface monitor is a personal computer running an Wonderware SCADA package.
Drives & servos:	SEW Eurodrive
Camera system:	Cameras & monitoring system are included within each VRT control system.
Installation:	Mechanical and electrical installation typically included in GEA Refrigeration Technologies scope.

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