

Wave Freezer.

Cryogenic multi-purpose freezer.



The Messer Wave Freezer is a multi-purpose freezer which can efficiently freeze individually quick-frozen (IQF) as well as trayed products. The flexible and versatile technology, which employs cryogenic medium, combines a standard tunnel with a mechanical system that agitates the product as it is conveyed through the freezer. Thus, the freezer has the ability to crust freeze products individually, irrespective of shape, form and orientation, and without affecting the integrity of the product.

The simplicity of the design enables the customer to maximize productivity by reducing sanitation and maintenance downtime. Messer Wave Freezers are designed for hygiene and ease of cleaning, starting with the freezers sloping floors and center trough drainage. All internal components are stainless steel or polyethylene construction. Modules are fully welded, ground and finished. The freezer top lifts vertically via an electric screw jack, providing full access into the tunnel for

cleaning. A control panel allows data storage of operating parameters for quality assurance tracking and traceability.

The freezer can handle a vast array of different IQF and trayed products, including diced poultry, meatballs, pizza toppings, diced fruits, vegetables as well as raw and cooked shrimp. The freezer's ability to adapt from one type of product to another allows customers to consolidate their freezing lines. This makes the Messer Wave Freezer a very cost-effective freezing solution as it saves floor space and operating expenditure while it achieves high production rates.

Benefits

- Quick crust freezing to lock in moisture preserving flavor and texture
- Maintenance of product integrity
- Maximization of product yield
- Superior IQF quality, with minimal product clumping

- Ability to stack products in several layers resulting in high production capacity
- Rapid and uniform heat transfer
- Efficient use of cryogenic medium
- Instant switch from vibratory mode (IQF products) to non-vibratory mode (trayed products)
- Minimal product packaging losses due to minimal snow carryover
- Quick installation and startup
- Easy operation with menu-driven control system
- Reduced cleaning and maintenance downtime

Operation: vibratory mode

The Messer Wave Freezer employs a mechanism that imparts a vibratory motion to the conveyor belt, creating a wave-like motion along the length of the conveyor. The agitation created dislodges the product from the surface of the belt, while it is sprayed with the cryogenic medium.

The combination of agitation and simultaneous injection of cryogenic medium ensures rapid cooling of the product to form an outer crust that locks in the moisture, maintaining product yield and quality. This is extremely critical for value-added, IQF seafood and poultry products. The section subsequent to the front zone acts as a standard tunnel freezer and completes the freezing process after the initial crust freeze.

Operation: non-vibratory mode

For trayed products, such as chicken tenders or formed patties, the mechanism that imparts the vibratory motion to the belt or conveyor is inactive. The system operates like a standard tunnel freezer, with the product being transported on the belt and simultaneously injected with the cryogenic medium.

Control system

The Messer Wave Freezer is controlled via a touch screen. The main menu displays the current product, motor speeds, safety status, machine messages, selected operational mode, and the freezer temperature. In the event of a fault, the operator is given specific information about the cause of the fault in the message display area. The main menu also provides access to other screens and menus via the function keys. Recipes can be simply loaded into the tunnel by accessing the recipe screen found on the user interface. The recipe screen allows the storage and recall of the operational parameters of all product types.

The ability of the freezer to switch between IQF and trayed products is achieved by one of the settings found in the menu selection enabling the user to select between the vibratory mode (“wave”) and the nonvibratory mode (“tunnel”). In the vibratory mode, the user can control the degree of agitation by adjusting the amplitude and frequency of the vibratory motion imparted to the belt.



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