

GENERAL DESCRIPTION:

The ADVANCED SPIRAL FREEZER is designed to be the most versatile freezer compared to other designs. It is designed to freeze or chill delicate products such as meat patties, fish sticks, chicken parts, shrimp, prepared foods, etc., which could easily experience product damage problems.

The ADVANCED SPIRAL FREEZER is a continuous in-line-belt freezer designed to assure quality, gentle handling during the freezing process, and minimum weight loss of the product.

ADVANCED's freezer is equipped with all stainless steel, heavy duty, spiral telescopic belting. The belt can be extended to change the pitch of the links. As the extended belt approaches the rotating drum, one side of the belt telescopes inwards and causes it to turn around the rotating drum. The belt then travels upwards (or downwards) in a spiral.

Products are fed directly from the production line onto the loading freezer belt. The belt quickly transports the product into the low temperature freezing zone; carrying it in a spiral along a rotating drum. When it reaches the top of the drum, the belt runs out of the freezer discharge port and gently discharges the product.

Due to the large available belt surface, the product can be frozen in single layers or individually for *I.Q.F.* (Individually Quick Frozen) quality. The product can thus maintain its original load in position throughout the freezing process. This allows simultaneous freezing of different products and simplifies product sorting after freezing.

SPIRAL BELTING

The spiral belt is made of all stainless steel 304 material.

BELT SUPPORTS AND SPIRAL FRAME

The belt is supported by galvanized rails and is protected by a U.H.M.W. polyethylene wear strip for many years of smooth, maintenance free operation.

BELT TAKE UP

The spiral belt system is equipped with an automatic belt tensioner to assure smooth belt operation in various ranges of temperature, wear, and loading.

DRIVE SYSTEM

The freezer drive system is driven by an electric motor coupled to a reduction gearbox. The belt take up tension is driven by a second electric motor. These two motors are directly linked together and are designed to operate at an overdrive speed ratio. When the belt speed is changed, both motors change speed proportionally to compensate for the overdrive ratio.

BELT SPEED CONTROL

Belt speed is controlled by a variable frequency drive. The retention time of different products can be controlled by varying the belt speed.

SAFETY FEATURE

Each motor is protected by a thermal overload relay. When a product or belt jamming occurs on any section of the freezer, the motors will draw more current. If the motor current of any motor exceeds the rating of the overload relay heaters, the frequency drive becomes disabled and the belt will stop.

For protection against over tension of the belt, a hold down rod is located at the top tier of the freezer. For protection against oversize products, a limit switch is provided at the product loading end of the conveyor.

EVAPORATOR COIL

The evaporator coil is made up of aluminum fins and tubing for ammonia recirculation systems, or aluminum fins and copper tubing for freon expansion systems. The fin spacing, which varies with the depth of the coil, is wide at the air inlet side and narrow at the discharge side. This design ensures an even frost build up on the coil without restricting the air flow, thus maintaining the maximum performance of the freezer operation time. The coil is furnished with liquid, suction, hot gas and water connections for easy hook up.

AIR FLOW SYSTEM

The air flow is provided by aluminum high performance propeller fans directly driven by high efficiency motors.

ELECTRICAL CONTROL PANEL

The electrical control panel is stainless steel constructed and may be mounted on the outside wall of the enclosure. It is all externally pre-wired for easy installation. The control panel is equipped with switches and motor starters which are all fused to protect each motor. The electronic retention time meter and the digital temperature read out are provided as standard equipment.

ENCLOSURE CONSTRUCTION

The insulated enclosure walls and ceiling are 6" thick and of self supporting construction. The enclosure uses panels of expanded polystyrene bonded to galvanized steel skins, with white baked enamel paint. Two heated doors and two vapor proof lights are also provided.

The floor system is built up on the customer's sloped concrete pad. The floor panels are insulated with 8" of expanded polystyrene and covered with stainless steel. The floor panels are seal welded together on site. Floor drains are provided.