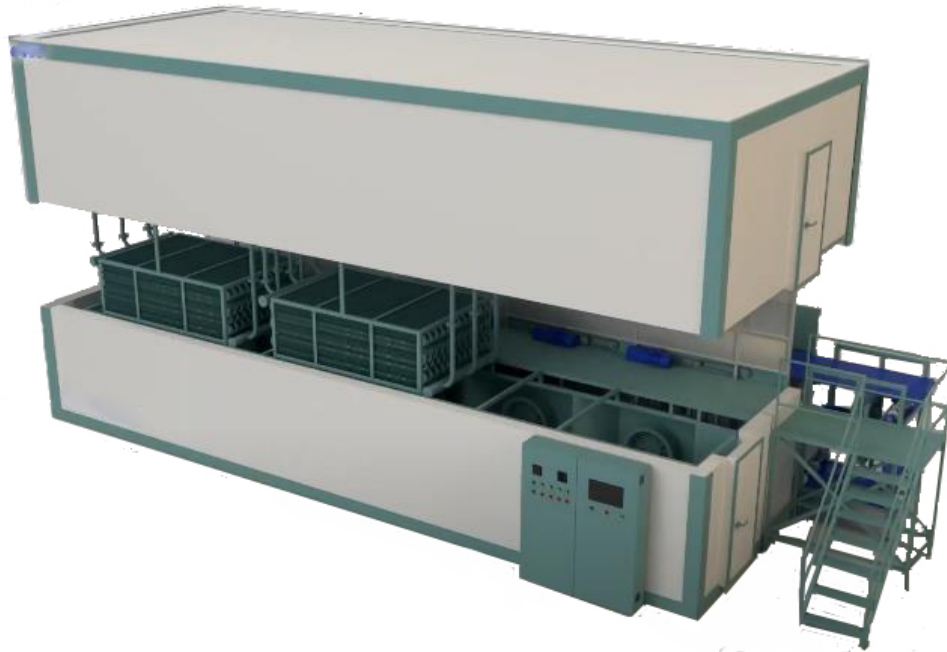


# FLUIDIZATION QUICK IQF FREEZER



Quick freezing of food pieces individually or I.Q.F. Freezing in mechanical freezers, of items such as cut broccoli and cauliflower, peas, diced vegetables, berries, etc. presents a variety of problems. The variety of products to be frozen requires selection of the proper freezing system for each category of products. The selection must be based upon the specific heat of the product, the size and shape, the water content and free water, as well as the entering temperature, and the pounds per hour the customer wants to freeze. In order to attain some degree of efficiency in mechanical freezers, a combination of three major processes is necessary to effect instant crust-freezing of the product, so that the articles will not stick together or stick to their conveyance. These processes are:

Controlled low temperature

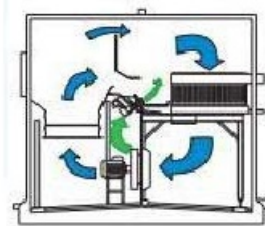
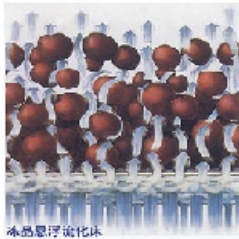
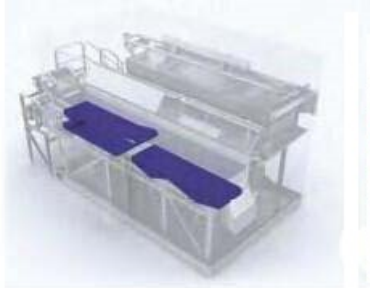
An efficient air-blast pattern through the articles

A means of rotating or tumbling the product in the initial stage of freezing

These three processes are augmented and rendered more efficient by use of proper variable speed conveyance in even distribution across the in-feed conveyer, with shakers or other means, and de-watering devices to control free water content.

The purpose of these processes is to instantly crust-free the product as it enters in the initial

freezing phase in a single layer. As this is accomplished (so that the articles do not stick), they are then conveyed to the second phase where they may be several inches thick, while still in a low temperature air-blast. The product is then in a state known a "deep fluidization." This final phase freezes the product totally, where it may be packaged, stick-free like "marbles in a sack."



## IQF Vegetables and Fruits

Vegetables: sword bean, green bean, young soya bean, asparagus, bamboo, mushroom, lotus root, common calla, taro, Chinese yam, Dutch bean, cauliflower, maize, garlic bolt, edible fungus, potato, pumpkin, onion, etc..

Fruits: strawberry, orange, plum, apple (pieces), peach, cherry, etc.



## Features

I It makes quick freezing by two ends and form crystal temperature on surface and guarantees frozen products non-agglomerating into deep freezing stage in ideal fluidized status under high-pressure cold wind and high-frequency chain pulse.

II With most advanced high pressure special for fluidized freezing, large blast centrifugal technology can make frozen products in suspension status and shortened freezing time by 30%

III Most advanced conversion infinite speed variation technology makes conveying speed to

the standard of precision control procession to meet needs of advanced freezing.

IV Rational design of aluminum evaporator combining with high pressure centrifugal technology guarantees 12-hour efficient running of equipment under non-frost condition.

V The frame of freezing machine is made by stainless steel and each air blower is separated to ensure its normal running.

VI Insulating storehouse is made by double-surface stainless steel plate with polyamine core, which is quick in installation, good in insulating effect and nice and clean.

VII Conveying belt and all contact parts with the belt are made by stainless steel and guarantees healthy standard of food.

VII It is equipped with most advanced belt auto frost-reducing, cleaning and drying devices, which is convenient and clean in use.

## Main Parts

**Belts:** Stainless Steel wire mesh belt. All our belts are retractable belts around the rotary Drum. Heavy-Duty Links are standard.

**Fans:** The system has some high-pressure centrifugal fans, the great pressure arising within the scope of the corresponding wind power, Stainless steel Fan Housing with Stainless Steel fan guard.



**Evaporator:** There are 3 sets of evaporator in the freezer, each one transferring area is 900m<sup>2</sup>, total evaporative area is 2700m<sup>2</sup>. Water defrosting.

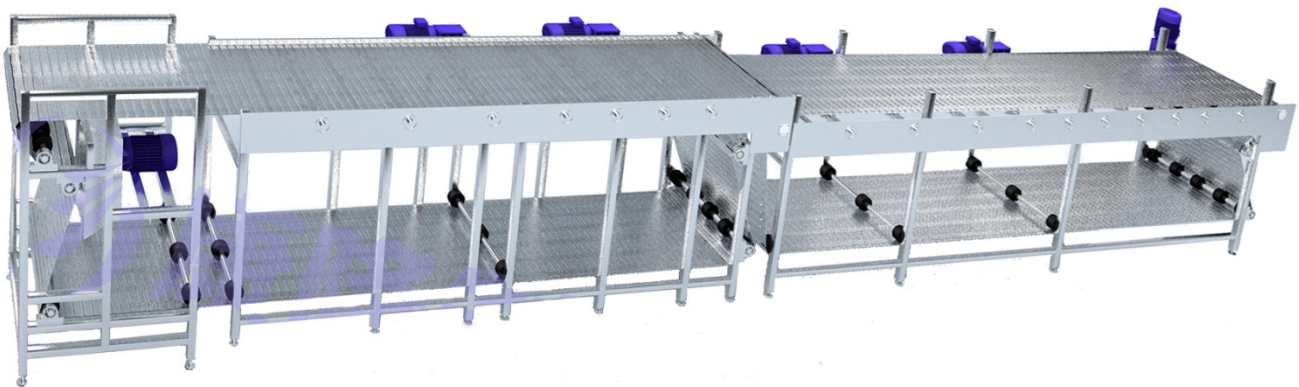
The Evaporator frame is made of stainless steel completely. Each one liquid supply pipe is  $\varnothing 48\text{mm}$ , and gas return pipe is  $\varnothing 89\text{mm}$ . Head plate of evaporator framework is made of  $\delta 1.5\text{mm}$  SUS304 fold side stainless steel plate; connections are made of  $75 \times 45 \times 2\text{ mm}$  and 50



× 50 × 1.5mm high quality stainless steel square tube.

Evaporation tube of evaporator is made of  $\varnothing 25 \times 2.2$  the high-quality aluminum tubes with alloy fins, handling by machinery tube expanding, with different fin distance design.

**Framework:** Framework is made of  $75 \times 45 \times 2.0\text{mm}$  or  $38 \times 38 \times 2.0\text{mm}$  stainless steel square pipe. It equips two stages of driven system, even one stage stops running; the other stage can work in case affect production. The driven speed is available to adjust.



**Insulated Cabinet:** Fully insulated cabinet made of 120mm sandwich panels, insulated with polyurethane and 0.5 mm stainless steel covering.

In and out-feed openings are fully covered by 2 x double-layer silicone strip curtains to minimize air/moisture entering the cabinet, which prevents frosting built-up on the evaporator and prolongs the time in between defrosting periods.

The cabinet is equipped with two standard access doors mounted with electrical door heaters for maintenance and .cleaning.

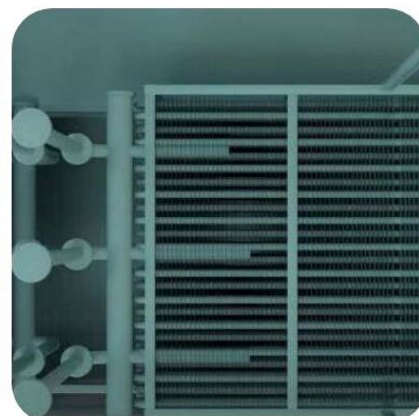
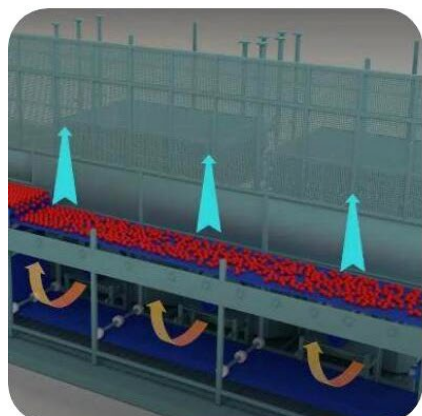
**Air Circulation Freezing System:**The conveying belt in the freezer is divided into two sections, the first section for surface rapid freezing, cooling the surface temperature of food material to freezing point. However, the second section, in an ideal fluidized bed under the deep freezing.

The temperature of freezer inside around  $-36^{\circ}\text{C}$  to achieve rapid freezing, the temperature of food material is expected to  $-18^{\circ}\text{C}$  at this time.

**Electrical Control Box:** Individual control panel to conduct an independent, start-up and control network transmission speed operation. The entire operation of the machine is controlled via operating buttons and dialogue Digital Screen.

There are two temperature measuring points in the freezer, in and out freezing live

temperature is displayed in electrical control panel.



### Freezing Capacity Ratio for Different Frozen Material of Same Model

Product material	Beans	Berries, cabbage	Pea	Potato, carrot	Corn Fruit picec	Broccoli mushroom
freezing capacity ratio	1	0.8	1.1	0.94	0.86	0.9

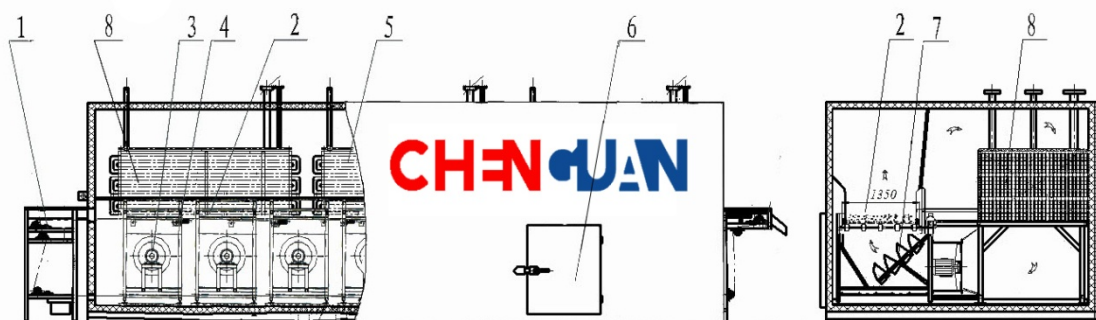
### Specification and Models

Model Item	SLD-10	SLD-15	SLD-20	SLD-30	SLD-40	SLD-50
Freezing capacity (KG/H, based on Green bean)	1000	1500	2000	3000	4000	5000
Freezing Time <u>Min</u>	5-15					
Refrigeration consumption <u>KW</u>	165	250	320	460	580	700
Size of freezing room (LxWxH) <u>M</u>	6×4.2 3.6	8×4.2 ×3.6	9×4.2 ×3.6	13×4.2 ×3.6	16×4.2 ×3.6	18×4.2 ×3.6
Overall dimension <u>M</u>	8×4.2 ×3.6	10×4.2 ×3.6	11×4.2 ×3.6	15×4.2 ×3.6	18×4.2 ×3.6	19.8×4.2 ×3.6
Installed power <u>KW</u>	42	57	68	99	132	165

### Configuration of Fluidization Quick Freezer



- 1 Feed Framework
- 2 Fluidized Bed
- 3 Circulation Axial Fan
- 4 Mesh Belt Vibration Device
- 5 Insulated Cabinet
- 6 Access Door
- 7 Adjustable Air Guiding Plate
- 8 Evaporator



© 2007 - 2024, Chenguan Technologies Ltd, Shaoxing, China

#### Technical Changes

The data and illustrations in this catalogue are not binding and only provide an approximate description. We reserve the right to make changes to the product delivered compared with the data and illustrations in this catalogue, e.g. in respect of technical data, design, fittings, material and external appearance.

#### CHENGUAN MACHINERY & FREEZING TECHNOLOGIES LTD.

Cao'e Economic Zone, Shangyu, Zhejiang, China

Tel: +86-571-56101801 Mobile/whatsapp: +86-13867501690

[ring@syfreezer.com](mailto:ring@syfreezer.com)

[www.syfreezer.com](http://www.syfreezer.com)