



proton
EUROPE

www.proton-europe.com

CONGELADOR PROTON PF-15 A

Maintain food freshness and quality

The latest model of proton freezing machine

PF-15A

Powerful freezing ability even in small size!!

<Freezing ability: 15kg/h>



Smaller food, treasure stock

proton
+ PF-15A

Ecology
×
Technology



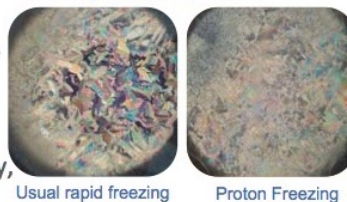
Latest frozen technology of uniform magnetic flux density, electromagnetic waves and cool wind

Make ice crystals much smaller

Nuclei size of ice crystals formed by Proton Freezer is much smaller than that by the usual freezer

Pictures taken by Dr. Tadahiko Mizuno Hokkaido University, Laboratory of Nuclear & Environmental Materials

■ Ice crystal comparison



■ Drip comparative amount



Usual rapid freezing(-35°C)
(Drip 7% outflow)

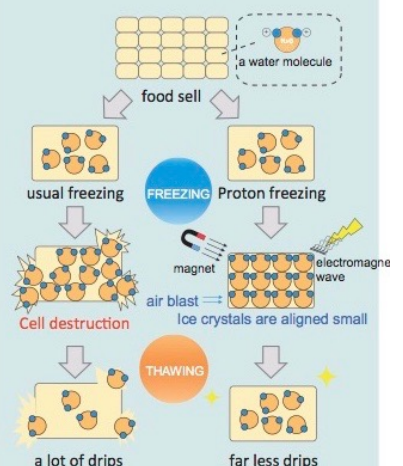
Proton freezing(-40°C)
(Drip 2% outflow)

Prevent destruction of food cells

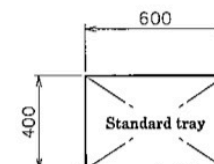
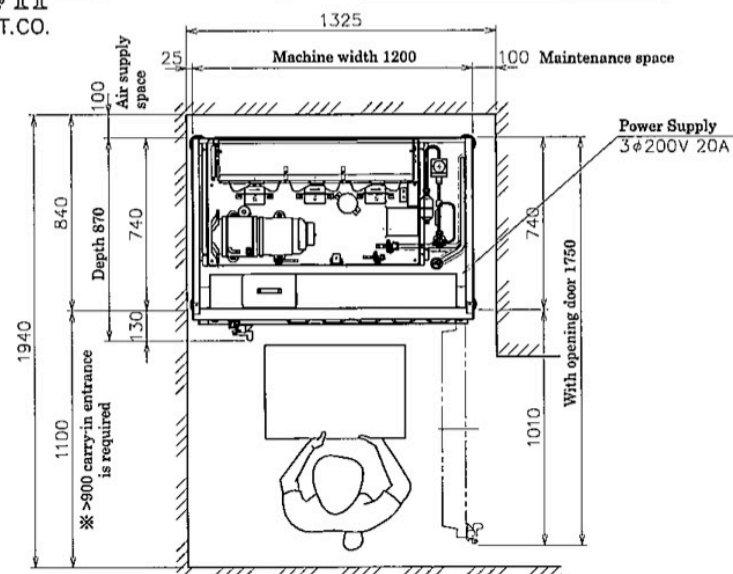
Reduce the amount of drip during extraction

Comparing drip amount of bluefin tuna
Improved drip amount 71%!

Mechanism of Proton Freezing







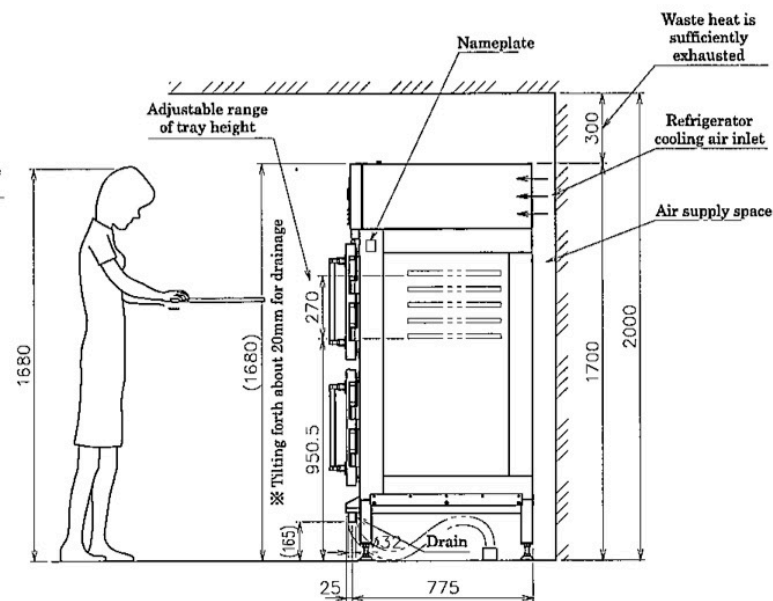
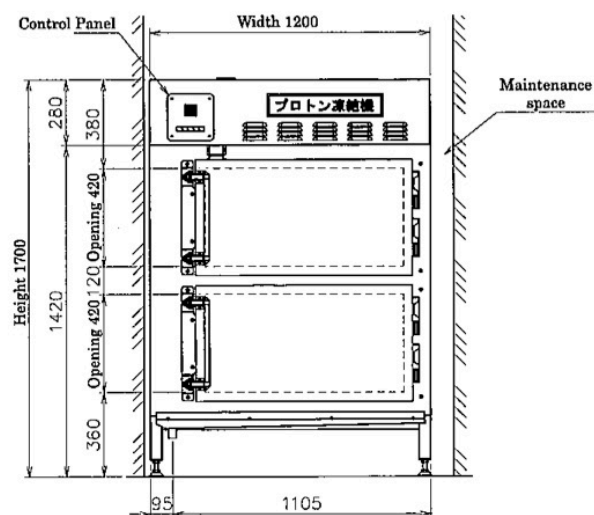
Weight : 400kg

Utilities

Power supply : 3-phase 200V

Power cable 3m w/ water-resistant cap
(Ground 3P / 250V / 20A)

In / Out
 ※ Tray# : 11-floor, 5-tray
 limited # of trays is to secure
 air flow



CLIENT NAME	DRAWING NAME	SCALE	DATE	DRAWING NO.
	Proton Freezer : PF-15A External dimension	1/20	2014/03/15	

PF-15A Specification	
Items	Specification
Application	Quick Freezing Equipment for Foodstuff
Inside Temperature of Freezer	Air Blast Method -35 to -38 degreeC
Temperature of Foodstuff to be loaded	Approx 20 degreeC (freezing down to -18 degreeC as criteria)
Capacity	Nominal 15hg/hour (at 60Hz operation)
	Capable of freezing amount of 15kg foodstuff per hour
	Figured out by our load calculation, provided 50% water is included in foodstuff.
Freezing time	Varied according to demension, load condition, characteristics.
	It is recommended to confirm how long it takes to freeze thoroughly.
Available number of tray	600mm x 400mm x 5 trays
	Maximum height 350mm/ magnet unit
Demension	refer to the drawing
Tray size	600W x 400D x 20H (Custom tray available as option)
Magnetron	Oscillation amplifier x 1, Antenna x 2
Freeze unit size	Nominal "600W x 400D x 350H" 1 units
Structure of machine	Main material SUS304 for both interior and exterior
	Thermal insulation by urethane panel
Refrigerator	3HP, R404A, Air cooling rotary condensing unit
Cooling FAN	Fan made by SUS
Cooler	Copper tube aluminum fin
Continuous working time	8 hours * depending on installation environment and door open/close frequency.
Defrost system	At heat exchanger front, manual cleaning with hose every day
Weight	Approx 450kg
Power Supply	AC200V 3-phase, 50/60Hz
Power Consumption	3.4kW (50Hz) / 3.9kW (60Hz)
Current Rating	16.2A (50Hz) / 16.15A (60Hz)
Breaker capacity	20A
Outlet shape	Hook-type with 20A male cable 3m