



NANJING PROSKY FOOD MACHINERY MANUFACTURING CO., LTD

OPERATION MANUAL

BATCH FREEZER

(KNOB SWITCH)



VITA 8 20 VITA 10 30 • VITA 15 45 • VITA 20 60 • VITA 60 120

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1. Foreword, guide, and characteristics

Thank you for purchasing the BATCH FREEZER from Prosky.

We produce the good quality machines and provide satisfied after-sales service for you.

1.1 About us

Nanjing Prosky Food Machinery Manufacturing Co., Ltd. is located in Lishui Economic Development Zone which is very close to the LuKou International Airport of Nanjing. Prosky is experienced with Professional production of the Italian gelato full set of machines for more than 10 years. Prosky commits to become the greatest professional manufacturer and facilitator in China.

Prosky owns the sophisticated production and quality control management system and has succeeded in obtaining the CE and SGS authentication. At the same time, the electronic dasher equipment we developed used for the pasteurizing machine has gained the utility model patent in China. Furthermore, Prosky has signed the agreement of the research and development with the Nanjing professional university. Prosky is always innovative to meet the old and new customers' requirements.

Prosky produces all kinds of standard equipments for the gelato shops.

The main products include the pasteurizer, batch freezer, blast freezer, display freezer and the combined machine, etc. And Prosky is active at introducing new products, the extra-large or extra-small, to meet the different requirements of the domestic, European, North American, South American, South-east Asian, Mid-east and African market.

Proskey cooperates with the Hong Kong senior consultant and establishes training course about “How to open the Italian gelato shop” basing on the Italian gelato market research, location-selection, VI design and store-decoration. And Proskey will help to choose the cost-effective equipments for your shop with intimate, help to choose the Italian gelato base and other materials, help to teach and show how to make the various flavor gelatos, hand-made gelato cakes and the different kinds of desserts, training staff and team leader. Proskey provides a series of services to make you satisfied.

1.2 Guide

This manual provides you with installation, maintenance, use technical information of the machine, please read it carefully before operation, thus you could make the machine play maximum of economic efficiency. For electrical safety, please make sure the machine touch ground!

Statement

Any part of this manual mustn't be copied, reproduced, or archived for other uses without prior written consent. The buyer has the right to copy this version for internal use.

Proskey commits to continuous research and development; this version is subject to change without prior notice.

Manual

This manual is made by manufacturer which is one part of the whole machine. The information is valid for both professional and unprofessional staff.

Objective

This manual is designed for the users well informed about the operation of the machine. All parts are carefully analyzed to determine the correct use of the machine and thus to guarantee the high quality of the ice cream.

Technical guidance

Much of this manual refers to the conditions for machine use and the necessary procedures for cleaning and regular and special maintenance.

The manual can not go into details, in case of doubt or lack of information please contact:

Tel: 86-25-56213999

Fax: 86-25-84697144

Additional documentation

Spare parts: a list of components with the machine for routine maintenance

Warning

The machine must be installed by a qualified technician.

- Never put your hand into the machine during production or cleaning.
- Before starting maintenance, make sure that the machine in "STOP" position and the power off.
- Do not wash the machine with a water jet under pressure.
- Be sure to turn off as the side or rear panels are removed.

Warranty

The warranty does not cover parts and labor to repair defects and poor performance due to: the poor / improper use of the machine, the machine abuse, unauthorized maintenance or other external factors.

Parts warranty

Warranty applies to all component parts except for parts that wear out through normal use (such as O-rings, belts, rubber valves, pump gears, etc.) one year from the date of delivery.

1.3 Application

The new design VITA batch freezer (hard ice cream maker) is allocated with original Tecumseh compressor from France, Danfoss expansion valve, and Refrigerant R404A. It is adopted the advanced freezing cylinder design and upgraded dasher system, resulting in genuine excellent Italian gelato ice cream. The machine is widely used in gelateria, ice cream parlor, bakeries star hotel, Candy shop, and supermarket, etc.

2. Technical parameters

| MODEL | VITA 8 20 | VITA 10 30 | VITA 15 45 | VITA 20 60 | VITA 60 120 |
|--------------------------------------|-----------|-------------|-------------|-------------|--------------|
| Cylinder Capacity / L | 5 | 7 | 10 | 15 | 35 |
| Inputs / raw material each batch (L) | 1.5-3 | 1.5-5 | 2.5-7.5 | 3-10.5 | 8-24.5 |
| Batch Time / Min | 8-10 | 8-10 | 8-10 | 9-12 | 10-15 |
| Mix produced / Hourly quantity (L) | 8-20 | 10-30 | 15-45 | 20-60 | 60-120 |
| Electrical Specifications / Volt | 220 | 220/380 | 220/380 | 220/380 | 380 |
| Electrical Specifications / Hz | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Electrical Specifications / Ph | 1 | 1 or 3 | 1 or 3 | 3 | 3 |
| Refrigerant Type | R-404A | R-404A | R-404A | R-404A | R-404A |
| Condenser | Water/Air | Water/Air | Water/Air | Water/Air | Water/Air |
| Nominal power/Kw | 2.5 | 3 | 4.45 | 6 | 7.75 |
| Dimensions/ L x W x H / cm | 56×75×84 | 69.5×85×140 | 69.5×85×140 | 69.5×85×140 | 71×121×141.5 |
| Net weight / Kg | 125 | 225 | 270 | 315 | 450 |

Note: Other voltages and cycles are available.

Air-cooled condenser is also available.

The amount per freeze and the hourly production rate vary according to the mixes used.

The max values refer to the classic Italian gelato.

Production rates refer to an ambient temperature of 25°C and a water temperature of 20°C in the condenser.

3. Safe handling

Off-bearer requirement

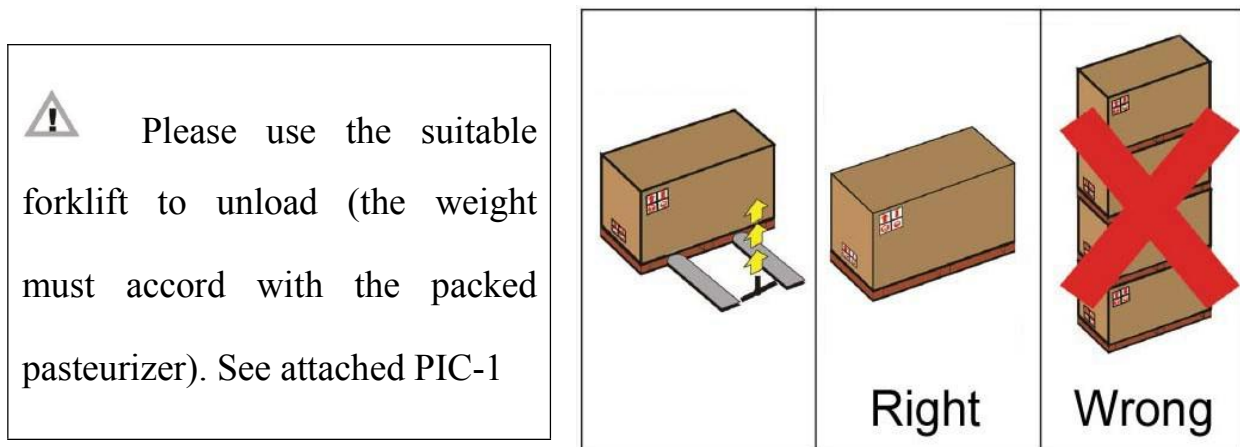
Suggest to ask the professional off-bearer to discharge the machine and do according to the safety standard. The Loading and unloading machine should be the forklift or any other tool that can hold double weight of the packed machine. The off-bearer must keep the certain distance from the machine and prevent from hurting other

people or property when the machine falls by misoperation.

Unloading operation

The packed machine must be put according to the identification on the packaging.

Please do not stack, turn upside-down and traverse.



PIC-1

Inspection of package

When getting the machine, please check if the outer packing is undamaged. If there is obvious damage, the machine is possible to be broken. Under this circumstance, please discharge the outer packaging when the deliveryman is there in order to check if the machine is in good condition. All damage caused by the incorrect operation or putting is irrelevant to the manufacturer.

If the machine is damaged, should:

A) provide the relevant written report

B) contact with the local agent or the manufacturer

Disposal of packaging materials

All the discharged packaging should be recycled and dealt according to the laws of your country. Make sure to take care of and dispose every part that may hurt the environment and the people reasonably.

4. Correct put and installation

Use limitations described below:

Power supply: $\pm 10\%$

- Minimum air temperature ($^{\circ}\text{C}$) 10°C
- Maximum air temperature ($^{\circ}\text{C}$) 43°C
- Minimum water temperature ($^{\circ}\text{C}$) 10°C
- Maximum water temperature ($^{\circ}\text{C}$) 30°C
- Minimum water pressure 0.1MPa (1 bar)
- Maximum water pressure 0.8 MPa (8 bar)
- Maximum raw solid content (%) 40%

Noise

The continuous A-weighted sound pressure level in the workplace refers to both water cooled condenser machine and air cooled condenser machine, below 70 dB (A).

4.1 Put

Correct put can ensure the good cooling effect, energy saving and shock absorption in order to prolong the useful life of the machine. The machine must be stored in a dry place. Wipe the dust with a cotton towel; trap the machine in a bag.

The machine is only suitable for indoor use.

The machine must be placed on level ground and in sufficient space 50cm from all sides for air circulation.

The machine must remain freely accessible so that the operator can act without hindrance and in case of emergency he can leave the workplace immediately.

It is recommended that the machine is placed around an area of at least 150cm to release access to the machine, taking into account of the opening of the various panels.

Note: The best environment temperature is under 25 ° C.



Machines with air cooled condenser shall be 50cm far away from the wall, with sufficient air circulation around the condenser.

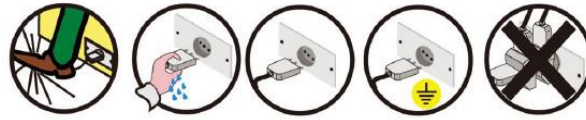
Inadequate air circulation, will influence the functioning and capacity of the machine.

4.2 Installation

4.2.1 Electrical power connection

Before the machine connects to the power you need to check the supply voltage matches the voltage indicated on the license plate image.

Make sure to let the qualified professional worker to install and inspect the machine and operate according to operation manual strictly. If out of the accordance with the rule, the manufacturer will not be responsible for any body injure and property loss.



1. Please do not fix the wires onto the floor instead of putting in the passage.
2. Do not touch the power plug with wet hands directly.
3. Must use sole 1 phase or 3 phase power supply and the earth wire must connect the earth correctly. If not connecting the earth well, it may cause electric shock.
4. Do not use the external line to connect the machine and the principal line.
5. Make sure the principle line accord with the machine voltage requirement. (The most difference is $\pm 10\%$)
6. If there is breaker, the current on the breaker must be bigger than the total current when the machine works.
7. The machine is supplied with power cable with three or five conductors; each cable is labeled before sent out.



The exhaust wind of the air condenser for the air cooled machines must go towards outside. When connect the wires, the terminals with labels on the line contact bank must correspond with the labels on the wires. If the exhaust wind goes inward, need to exchange one of the three power lines.

4.2.2 Water cooled condenser machines

The machine must be connected to the water supply and drainage. The water pressure should be between 0.1 and 0.8 MPa. The supply of water must equal the consumption

per hour. The water supply must be connected to the "Water Inlet" and the drain on the "Water Outlet".

Requirements of the water

1. The water with too high salt content will accelerate corrosion of pipes and influence the life of affected components.
2. The water with too many impurities will block the pipe, in this way it can not provide Freon cooling.
3. The water valve should be installed by a certified technician.
4. Before starting the machine, please make sure the water is connected well.



Warning

Never leave the machine in a room below 0 ° C, when not all the water has drained from the machine.

4.2.3 Filling

1. Lubricant oil is allocated with the compressor inside the machine by itself. Do not need to check, change and fill it. The freezing medium is filled before EX works and it can not be accompanied as the spare use. When need to fill or change the freezing medium, it must be operated by the trained and professional technician who can ensure the reason and the quantity to be filled in immediately.

5. Structure and principle of the machine

5.1 Structure

The main components of Batch Freezer are: Condenser, expansion valve, Tecumseh compressor, freezing cylinder, motor, frequency converter and agitator, etc.

5.2 Principle

Ice cream making process is the highly-efficient heat exchange process, also freeze the ice cream mixture into the final process of semi-solid ice cream form. Pour 4D.C. ice cream mixture into cylinder through the feeding mouth, the agitator in the cylinder mixes the mixture; meanwhile the freezing system cools the mixture through the cylinder. The mixture is continuously frozen, scraped, and mixed with air agitation, eventually becomes expanded, delicate gelato ice cream with the final temperature usually from -5°C . to -9°C .

6. Installation and adjusting

6.1 Open-case inspection

- a) Open the packing wooden case, and check if any damage for the machine
- b) Scan the packing list and check up the spare parts
- c) Open the side stainless steel, and check if any damage for the inside accessories of the machine, or make sure no loosening

6.2 Special examination

- a) Check up the wires, terminals, and electrical fastening screws are tight, and no damage for the electrical device

- b) Check the belts and make sure they are flexible for running
- c) Take out of the agitator and check up no damage for the blades and seal ring
- d) Check each component, and fasten if there is any loosening

6.3 Installation

- a) Make sure the ground wire of the machine is connected
- b) The machine should be installed in the ventilation place; For air cooled machine, the air condenser should be at least 0.5M far away from the wall
- c) Be sure to use air switch; the wire capacity for the power supply should be large enough(cross area of the wire should be no less than 2.5mm^2)
- d) The voltage pulsation shall be in 340~420V (3 phase) or 200~240V (1 phase)
- e) The electric type(voltage, frequency, phase) shall be matched with the machine

Note: 1. the belt should be anti-clockwise running.

2. If the machine is air cooled, please check up the hot air blows out of the air condenser; if not, please check the power cords connection and reconnect.

3. The agitator should be put in by anti-clockwise.

7. Operation guide



1. Press the **EMERGENCY STOP** switch button, then **POWER** indicator light is on. If the machine with a temperature monitor, the monitor **TEMPERATURE** will display the current temperature.

2. Four-speed switches are: **STOP**, **PRODUCE** (ice cream production : cooling and stirring), **SLOW DISCHARGE** (low speed mixing), **FAST DISCHARGE** (high speed mixing).

It is important to be attention that: after turning on the **PRODUCE** switch, the motor runs at low speed, the compressor will startup after a time-delay of 5 seconds. The time-delayed start is to prevent the instantaneous current is too large and lead to start separately. Switch to **FAST DISCHARGE** before discharging, so that can completely squeeze ice cream. Transfer to the **STOP** switch after the whole process complete.

3. **TEMPO Timer** relay settings: Open the panel in the lower part of the Timer, there are six adjustable blocks, two Red blocks are Unit Value, four Black blocks are Numerical Value, as shown:



The above time meaning: after starting **PRODUCE** switch and countdown 11 minutes, the audible and visual alarm sounded, it will continue to sound 11 seconds.

There are two buttons up and down of each Numerical Value, the buttons up and down of red Unit Value do not adjust. The button above black Numerical Value is for reducing the time, the below button is for increasing time, they can be set in free.

The Red Unit Value must not be adjusted, otherwise our company refuse to be responsible for the equipment damage caused by this operation.

3. The settings all been completed before the machine out of the factory, the customer only need to adjust the number of minutes on **TEMPO** according to the different ice cream formula, the behind seconds numbers can remain unchanged. After the whole production is finished, turn to **STOP** switch, next time will repeat the countdown.

Warm Reminder:

Do not suspend the machine during the production process, so as not to cause ice cream to solidify in the cylinder and affect the normal work of the compressor.

8. MAINTENANCES

Please make sure to have cut off the power supply before start any maintenance or the inspection. Prepare enough lifting device when necessary to prevent hurting anybody or the environmental property.

8.1.1 Cleaning for the cylinder

For the sake of gelato customers' health and the machine' working life, you should clean the cylinder at least one time per day:

1. Power off, dismount each part and clean them.
 - a 、 dismount the outlet and relational parts
 - b、 take the agitator out of the cylinder, dismount the seal ring.
 - c、 Dismount all of the parts, if any broken, please replace them
 - d、 After cleaning, install the parts by the anti-process of dismounting

8.1.2 Cleaning for the overall machine

Please keep the machine in the artistic, clean, and hygienic condition. You could wipe the machine by wet towel, please do not wash the machine directly by water, avoiding electric malfunction.

8.1.3 Cleaning for the condenser

You could clean the condenser one time in each three months. Power off before cleaning, be care of the fins. Use banister blush and blower for cleaning.

8.2 Adjusting the Belts

The belts may become loose with the usage of the machine, belt creep may happen accidently. In this case, please power off and adjust the belts.

8.3 The Reason of Gelato Making Fail

The temperature of the excellent ice cream outlet should -7~ -8 degree, which is resulted from the refrigeration system of the machine. Exclusive of the improper rate of the mixture, low of present hardness value, etc, the maker should check up the machine. Firstly, check up the blades on the agitator, if they were worn out, they could not scrape the frozen ice cream, resulting in soft ice cream from the cylinder. Secondly, check if there is enough space for the machine working surrounding if the machine is air cooled. Limited space or thick dust could also influence the working condition of the machine. Moreover, the maker should clean the condenser at regular intervals.

8.4 Cylinder Frozen reason and handling

8.4.1 The reason of the cylinder frozen

1. The water content is too high. Please follow the recipe strictly.
2. The cleaning water is not discharged completely. In this case, the water in the cylinder will be frozen. Please discharge the water fully before producing process.
3. The blades are worn out so that they cannot scrape the ice cream from the wall of the cylinder, resulting in cylinder frozen. Please replace the blades.
4. The motor runs too low to make the blades scrape ice cream lowly. Please adjust the belt, or replace them if needed.

8.4.2 The solution for cylinder frozen

Normally there will be friction noise if cylinder frozen occurs. At this time, please power off of the machine and check if there is ice cream inside of the cylinder, then

stop the machine for 30 minutes to wait for the ice cream being melted.

Please pay attention to the cylinder frozen, for it would cause the failure of producing ice cream, or even broken of the frequency converter and motor.

8.5 The reason of icy texture

1. The water content is too high. Please follow the recipe strictly.
2. The stirring strength of the mixture is not enough; it should take more time to churn.
3. The cleaning water is not discharged completely. In this case, the water in the cylinder will be frozen. Please discharge the water fully before producing process.
4. Lack of mixture static cool down. It is better to let the mixture static cool down for more than 15 minutes (you can stir it several times at this time), the process is called aging. The mixture after aging will become more delicate, which can produce high quality ice cream. (It is better to use a batch pasteurizer accompanied with the batch freezer)
5. Low quality of ice cream base could also cause icy texture and low overrun ice cream.

8.6 Trouble-Shooting

| TROUBLE DESCRIPTION | | POSSIBLE CAUSES | REMEDIES |
|---------------------------------|-----------------------------------|--|--|
| The machine can not start | 1. Indicator light Without alarms | 1. Electric trouble 2. Master switch OFF 3. Incorrect power supply | 1. Check up the lead and make it get through 2. Close the switch 3. Check up phase |
| | 2. Mixing motor doesn't run | 1. Wire connection problem 2. Voltage is not normal, causing protection action 3. Frozen tube load is too large 4. Stirring motor start capacitor burn 5. Stirring motor burnout 6. Magnetic protection switch damaged | 1. Check wiring and re-connected 2. Voltage exceeds the normal range, and you should stop the machine work, find out the reasons 3. Freezing cold too hard ice cream barrel, investigate as next related content pages 4. Replace Motor Start Capacitor 5. Replace stirring motor 6. Replace Magnetic protection switch |
| | 3. Compressor does not start | 1. Wire connection problem 2. Voltage is not normal, causing protection action 3. Over current, compressor thermal protector tripped 4. Compressor capacitor damage 5. The circuit control board failure or damage 6. Compressor damage | 1. Check wiring and re-connected 2. Voltage exceeds the normal range, and you should stop the machine work, find out the reasons 3. To suspend work pending recovery compressor thermal protector 4. To replace the compressor start capacitor 5. Repair or replace the circuit control board 6. Replace the compressor |
| Ice cream is not good as normal | 1. Ice cream is too hard | 1. Aim temp is too low. 2. Lack of milk or sugar content. 3. Blades are worn out. 4. Temp sensor is broken. | 1. Change the aim temp. 2. Adjust the milk or sugar content. 3. Replace the blades. 4. Replace the temp sensor. |
| | 2. Ice cream is too soft | 1. Abnormal volt causes protection for the circuit. 2. Aim temp is too high 3. Excessive milk or sugar content. 4. Lack capacity of heat dissipation | 1. Stop machine and check if the volt is normal. 2. Change the aim temp. 3. Adjust the milk or sugar content. 4. Check if the fan motor works well. 5. check if no frost or little frost, adjust or clean the valve. |

| | | | |
|---|---------------------------------|--|---|
| | | 5. Expansion valve is adjusted improperly or blocked. 6. Leak of refrigerant | 6. Check if there is refrigerant leak from the copper pipe. |
| Electricity on the surface of the machine | 1. Problem of wire touch ground | 1. The machine casing unearthed 2. Connection errors on ground wire 3. Loose of connection 4. The ground wire is broken | 1. Must earth unfailingly 2. Inspect and install the ground wire correctly 3. Fasten the wire connection 4. Make sure the ground resistance is big enough |
| | 2. Other problem | 1. The wires outside are broken 2. The wires inside of the machine is broken | 2. Check the wires regularly. 3. Replace the broken wires |
| Too noisy when the machine works | 1. Problem of belts running | 1. The screws for fastening the belts are loose 2. The belts are not parallel any more | 1. Tighten the screws 2. Adjusting the belts |
| | 2. Other problem | 1. The screws on the surface of the machine is loose. 2. The fan is loose or the motor is broken 3. Can't discharge 4. Transmissive failure on stirring shaft part or stirring parts is broken 5. The working time is unstable | 1. Tighten the screws 2. Tighten the fan or replace the motor 3. Adjust the motor to run counterclockwise 4. Reinstall the stirring shaft transmissive parts or replace some parts 5. Check if the water pressure is stable for water-cooling machine, and if the ventilation environment is up to standard for air-cooling machine |

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