

Coffee Robot Product Manual

-- V1.15



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1. Product Introduction

The coffee robot is an innovative, efficient, flexible, and cost-effective new beverage scene solution, focusing on themes such as "saving labor", "saving costs", and "service quality", effectively solving multiple pain points encountered in the operation of traditional beverage retail ends, such as staff training, service issues, store management issues, and quality control issues.

After the customer places an order, from cup taking and making to capping and serving, this fully automatic production process not only effectively manages the quality of the served beverages but also solves the problem in the traditional scenario where service staff, due to fatigue from repetitive and tedious production processes, neglect customer service, leading to a decline in the customer's impression of the brand and store, causing a negative impact.

The nature of the retail industry determines the high mobility of store service staff. In traditional scenarios, the training of new employees and staff transfers have always been the main issues faced by stores, bringing a series of store management issues that greatly consume the energy of managers, making it impossible to focus on improving store services, daily operations, and further enhancing store competitiveness and attractiveness.

The coffee robot only requires about 3 square meters of space, similar to traditional appliances, it can start working after connecting to a 220V power supply line; it can also start business without the need for water inlet and outlet renovation. Suitable for store supporting services, or business scenes such as libraries, office buildings, and can also be placed in high-traffic scenes such as shopping malls and stations.

■ 1.1 Product Composition and Functions

■ 1.1.1 Product Composition

The system composition of this equipment is shown in the figure, mainly including the workbench, collaborative robot, coffee machine, ice maker, supporting equipment, control system, ordering and payment system, and data management platform, etc.



■ 1.1.2 Product Functions

The product mainly consists of a hardware system, control system, communication system, software interaction system, and data management platform, each with the following basic functions:

Hardware System: Comprises the physical frame of the product and is responsible for functional implementation.

Control System: Achieves the entire functional process, mainly completing the scheduling and control during the production process.

Communication System: Mainly through the local area network formed by sensors for internal and external communication and prompting functions.

Software Interaction System: Mainly includes ordering and payment and online debugging systems, achieving ordering payment and debugging through convenient human-computer interaction.

Data Management System: The data management system mainly realizes operation and maintenance and data management.



■ 1.2 Specifications

Type	Name	Specifications
Basic Parameters	Dimensions	W1400*D1600*H2200 mm
	Occupied Area	2.24 m ²
	Overall Weight	500kg
	Power Specification	AC 220V 50Hz/16A Plug
	Operating Power	4kW
	Power Supply Requirements	4kW (4-way wiring) and 1 16A socket
LM3 Six-axis Collaborative Robot Arm	Robotic Arm's degree of freedom	6 degrees
	Payload	≤3kg
	Working Radius	638mm
	Protection Grade	IP54
Coffee Machine	Coffee Flavors	12-24 types
	Coffee bean storage capacity	1kg
	Capacity of coffee waste bin	About 500 pieces of coffee waste residue (10g/piece)
	Coffee concentration	Can be adjusted
	Cup Size	Standard 320ml

Type	Name	Specifications
Ice Maker	Daily ice making capacity	60-70kg
	Ice storage capacity	3kg
	Ice Quantity	Can be adjusted
Supporting module	Number of Syrups	3 Types
	Syrup Storage	700ml per type
	Sugar Level	Can be adjusted
	Number of concentrated fruit juices	4 Types
	Concentrated fruit juice storage	5L per type
	Milk Storage	8L
Equipment functions	Operation Time	24 hours operation
	Advertising Screen Size	32-inch * 2
	Ordering Screen	10-inch * 2
	Milk storage temperature	2-10°C
	Concentrated fruit juice storage temperature	3-10°C
	Daily Capacity	With one refill, can make 40 cups of milk-based drinks; other categories can make 66 cups
	Payment Methods	WeChat / Alipay
	Management System	Cloud Platform Management
	Recipe Adjustable	Can be adjusted
	Smart Reminders	Low Stock Alert; Fault Alert
Product Settings	By Cloud Platform Product Settings	

■ 1.3 The maintenance parts list

Name	Quantity	Name	Quantity
M12 milk frother	1	Universal spring clip	1
2-way accumulator valve -3Bar	1	M12 steam nozzle	5
2-way accumulator valve -5Bar	1	Sealing ring for water outlet pipe	2
120 two-way connector	4	Copper sleeve sealing ring	2
Three way PTFE connector	4	Flow meter at 0 degrees	1
Three way adapter	4	Flow meter 270 degrees	1
Water inlet adapter pipe	5	M12 internal milk tube group	2
M12 Milk Straw Set	2	Finger clip/silicone sleeve	2
3 * 6 silicone tubing	2	Various types of screws	*
3.5 * 6 silicone tubing	2	Woolen strips	1

2. Equipment Installation

■ 2.2 Precautions Before Equipment Installation



Please read this manual before installation.

Check the accessories in the packaging box when unpacking and keep them.

The power supply for the equipment must meet the national standard grounding requirements.

This equipment is a metal electrical control device, and it must be checked whether the power supply for the equipment meets the national standard grounding protection before power on. Otherwise, there may be a risk of electric shock to the human body due to lack of grounding protection. Various safety measures must be taken when installing the equipment, and power-on testing can only be carried out to ensure there is no power short circuit.

** If there are any abnormalities during the installation process, please contact your supplier in time for resolution.*

** This machine and all auxiliary equipment are suitable for use under the following working conditions.*

** Operated by trained personnel.*

** Self-service operation under supervision (standby mode).*

** Use of sturdy water interfaces.*

** Ensure the safety of water quality.*

** The position is fixed and placed in a dry, enclosed room. This machine and all auxiliary equipment shall not be used in high air humidity (e.g., cloud steaming areas) or outdoor areas, on transportation vehicles, or in movable spaces (please consult the manufacturer).*

■ 2.2.2 Preparations Before Installation

1. It is recommended that the site space should not be less than 2.5 meters (length) * 2 meters (width) * 2.4 meters (height).

2. Power: AC220V

3. Network port (preferably wired network configuration)

4. Indoor or semi-outdoor scenes, need to avoid direct sunlight and rain, and ensure that the equipment operating environment temperature is below 30 degrees Celsius.

5. Poor-quality raw materials and poor water quality may damage the robot.

6. Water must be clean, and the chlorine content in each liter of water should not exceed 100 mg; do not add corrosive water to the coffee machine.

7. The carbonate hardness should not exceed 5-6°dKH (German carbonate hardness) or 8.9-10.7°fKH (French carbonate hardness), and the total hardness value must always be higher than the carbonate hardness.

8. The minimum carbonate hardness is 5°dKH or 8.9°fKH. The pH value must be between 6.5-7: Be sure to use the new hose kit (clean water/waste water hose) provided with the machine. It must be connected to the water source according to the current regulations and the regulations of the country where it is located. If the machine is connected to newly installed water pipes, the water pipes and inlet hoses must be thoroughly flushed to prevent stains from entering the machine.

3. Control Unit Component Description

3.3 Ordering and Payment

Customers select the corresponding coffee, order quantity, and specific taste (if any) according to their needs, click "Go to Settle" or "Place Order" to complete the order and show the payment code to pay, then automatically enter the queue, the interface is as follows (supports WeChat and Alipay).



Order interface

<



冰美式 Iced Americano
冰美式
¥3.00

— 1 +

加冰 Makeice
标准冰 Standard 少冰 Little

糖浆 Sugar
荔枝风味 Lychee 圣基亚风味 Saint Lucia

糖分 Sugar level
不加糖 None 少糖 Little 标准糖 Standard
多糖 Much

水果风味 concentrate
橙汁风味 芒果风味 柠檬风味

首页 合计: ¥3.00 立即下单 加入购物车

Confirm taste

< 购物车 Cart 清空



冰美式 Iced Americano
标准冰 Standard/圣基亚风味 Saint Lucia/少糖 Little/橙汁风味/无浓缩液 None
¥3.00

— 1 +



美式咖啡 Americano
荔枝风味 Lychee/无糖 None/橙汁风味/无浓缩液 None
¥3.00

— 2 +

首页 合计: ¥9.00 立即下单 继续购物

View shopping cart

选择支付方式
Scan code to pay



支付宝
ALIPAY



微信支付
WeChat Pay

2:53

点我联系客服 Contact us

取消支付 Cancel

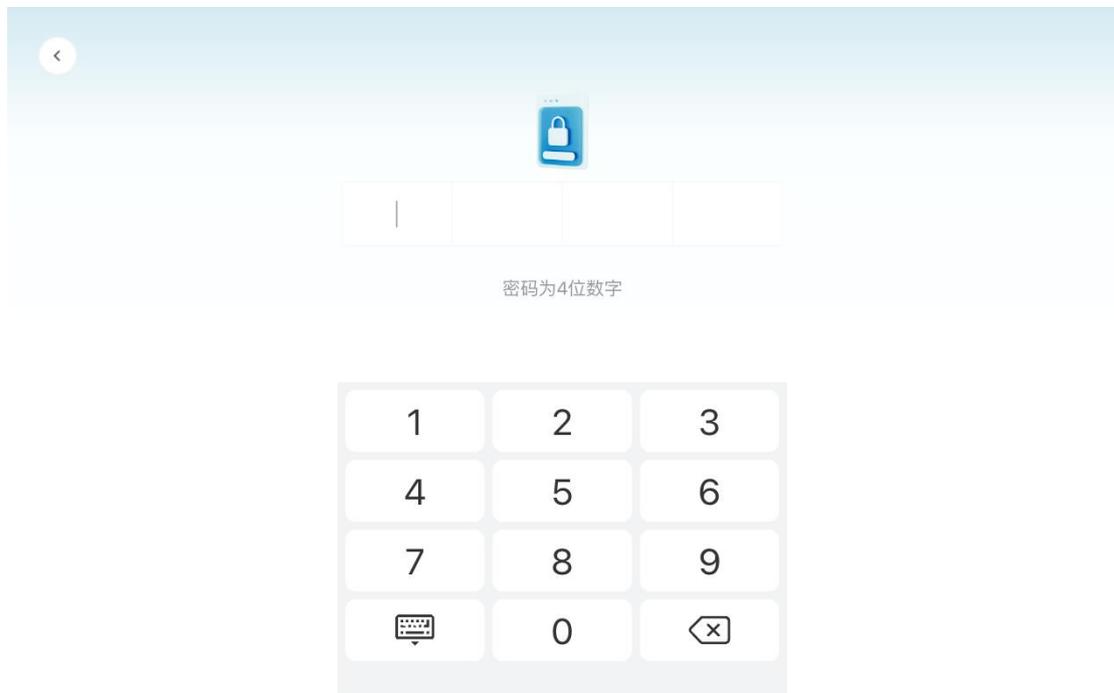
付款码对准扫码
仪支付

Check the payment method

■ 3.4 System Debugging

This equipment supports operators to debug the equipment status (only for personnel familiar with the daily maintenance of the product), the debugging interface is divided into several parts, as follows:

★ If you need to enter the maintenance debugging interface, click three times in the top right corner of the home page to enter the password page, enter the set 4-digit password, and then enter the backend debugging page.



Debugging needs to be carried out by personnel who have received relevant training or under the guidance of technical personnel.

■ 3.5 Data Management

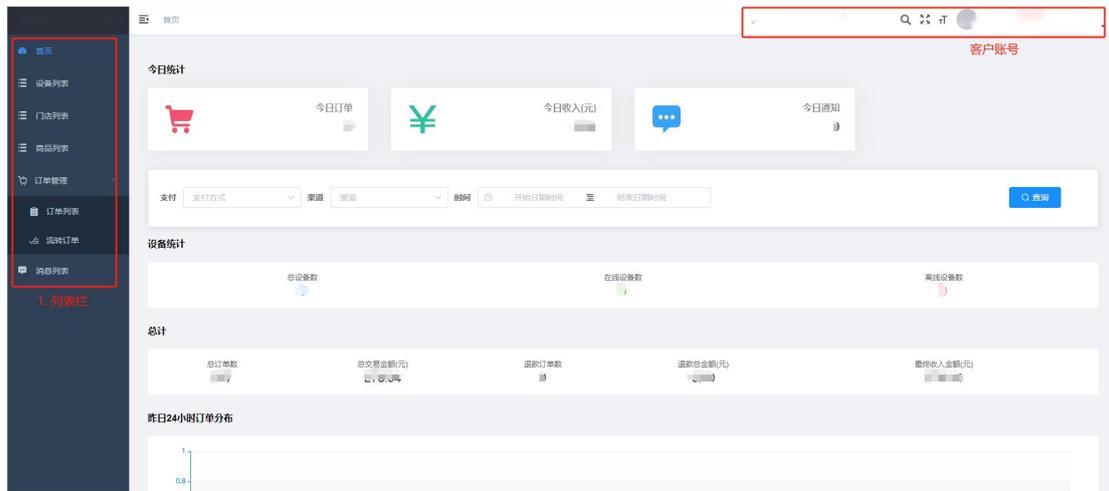
(Lebai Cloud Service Management Platform)

Lebai Cloud Service Management Platform website:

<https://shop.lebai.ltd/>

The account is provided by Lebai Robot Company.

The cloud platform can perform operational data analysis, payment account settings, product definition & price settings, customer refund operations, and warning information (material shortage information, robot and ice cream machine failure information) push functions, facilitating operational maintenance. Users can apply for an open management account, as shown in the figure, with various scenarios for use and settings in the sub-menu. (Warning information can be queried through the cloud platform or joined in the DingTalk group to receive real-time push, convenient for remote management)



1. Home page: Dashboard page

2. Equipment list: Real-time confirmation of equipment information, confirmation of equipment status

3. Store list: Display and change store settings

4. Product list: Confirm and modify store-related product information, pictures, etc.

5. Order list: Display store order information, which can be analyzed and exported according to different payment methods and channels

6. Message list: Equipment feedback, fault information alarm

4. Maintenance

A device's ability to operate normally and durably over time is largely dependent on maintenance. Maintenance work includes cleaning and routine functional checks to ensure the equipment operates without faults and to prevent premature wear. Especially since this equipment is operated with attendants, the operational safety and food hygiene require on-site personnel to be responsible for management.



Safety Tips: Before opening the equipment for maintenance, ensure that all power to the equipment is

■ 4.1 Equipment Maintenance

■ Coffee Machine

Cleaning Schedule: Operations must be performed by trained personnel.

Maintenance	Item	Daily	Weekly	Monthly	Mandatory
Automatic rinse & clean	Brewer rinse	✓			
	Milk rinse	✓			
	Brewer system deep clean		✓		✓
	Milk system deep clean	✓			✓
	Descaling			✓	✓
Manual clean	Milk pipe	✓			
	Milk frother unit	✓			
	Water tank	✓			
	Drip tray	✓			
Machine maintenance	Grinding adjustment & Calibration			✓	✓
Interpretation:					
Daily	Clean the item with "✓" at least once per day, possibly more often if needed;				
Weekly	Clean the item with "✓" at least once per week, possibly more often if needed;				
Monthly	Clean the item with "✓" at least once per month, possibly more often if needed;				
Mandatory	After the machine showing the prompts for cleaning, it must be done strictly following the instructions to avoid irreversible damage to machine.				

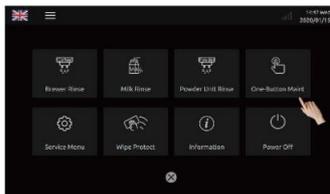
1. Daily Cleaning

One-button maintenance

Step 1: Click the shortcut icon on the screen to enter the shortcut menu page.



Step 2: Click "One-Button Maint" and follow the steps on the screen to complete the maintenance of the coffee machine.

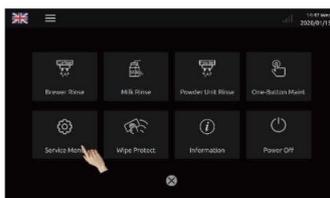


Water draining

Step 1: Click the shortcut icon on the screen to enter the shortcut menu page.



Step 2: Click "Service Menu" input password; (Default: 1709)



Step 3: Click "Maintenance", click "Water Draining", then follow up the instructions.



2. Ground setting

Step 1: Raise the cover of hopper, there is a knob can adjust the grounds (the number larger means rough, number smaller means fine).



■ Ice Maker

Cleaning and maintenance

Attention: Before cleaning and maintenance, please unplug the power cord first. Do not use alcohol to clean the ice machine to avoid cracking of plastic parts.

1) The de icing machine needs to be used for a long time, and the condenser needs to be cleaned once a year to maintain good ventilation and heat dissipation of the de-icing machine and ensure its normal operation.

2) The inlet filter head should be disassembled and cleaned every 3-6 months according to the water quality. If the "abnormal" light on the panel lights up, please check if the inlet filter head is blocked.



3) After using the ice removal machine, it is necessary to press the cleaning button to clean the water system once, empty the internal pipeline storage water of the machine, keep the internal water supply pipeline relatively dry, and avoid bacterial growth.

4) Regularly clean the wastewater box, remove the cup placement mesh plate, use a soft wiping cloth dipped in an appropriate amount of neutral detergent to wipe the inner wall of the wastewater box, rinse with clean water after wiping, and then reinstall the cup placement mesh plate.

5) When cleaning the body, please use clean water and neutral detergent to clean the outer surface of the product. After cleaning, wipe it with a dry cloth to remove any residual moisture on the surface.

■ 4.2 Raw Material Replenishment (Coffee Beans + Paper Cups + Water)

★Before and after the raw material replenishment process, it is necessary to wipe the equipment table, check the paper cup and bean bin, and perform basic cleaning to prevent contamination of the raw material storage area.

Coffee Beans

Simply pour an adequate amount of coffee beans into the bean hopper above the coffee machine.

Paper Cups

Before replenishing cups, check the appearance to ensure the quality of the paper cups to prevent the mixing of deformed or damaged cups into the cup bin, which could affect the robot's coffee making.

Water

Depending on the situation, place a water bucket inside the counter, put the water inlet hoses of the coffee machine and ice maker into the water bucket, and ensure that the water intake end of the hose is at the bottom of the water bucket.

5. Fault Analysis and Troubleshooting

This product comes with a user manual, video guidance, and random coffee machine and ice maker paper instructions. Please read them carefully.

If the equipment malfunctions, first self-check according to the following tips, and if ineffective, contact our professional technical support personnel.

■ Ice Maker

Common fault diagnosis and troubleshooting

1) Abnormal alarm prompt: When the product malfunctions, the system will perform self inspection analysis, and the panel abnormal light will light up. At this time, it is necessary to check whether the water inlet system is normal, whether there is a water outage or shortage, whether the water inlet pipe is bent, whether the water inlet head is blocked, and whether the water inlet pipe head is below the liquid level.

2) The causes of the malfunction and troubleshooting are detailed in the table below:

Fault phenomenon	Inspection items	Possible reasons	Terms of settlement
The ice dispenser is not working	power cord	The power cord is not properly plugged in	Check and plug it in properly
	Fuse	Fused or damaged	Check and replace fuses (operated by professionals)

	Inlet port	Stop water supply, blockage of incoming water or low water pressure	Raise the water pressure or replace the filter or filter cover
	Power supply	Power outage or low voltage	Contact the power supply department
Low or no refrigeration efficiency	Air inlet	The air inlet is blocked and obstructed	Check the safety distance around the product (see installation instructions)
	Condenser	Excessive accumulation of dust on the surface and high temperature	Clean the condenser
	Refrigeration system	Refrigeration system leakage	Contact after-sales service
	Compressor	Loose wiring or open circuit in the wire body	Contact after-sales service
	Power supply	Power outage or low voltage	Contact the power supply department
Abnormal light on	Abnormal water inflow	Stop water supply, blockage of incoming water or low water pressure	Check the inlet pipeline or contact the water supply department
	The temperature is too high	Air inlet and outlet are blocked or covered	Check the safety distance around the product (see installation instructions)
Abnormal ice falling	Ice removal baffle	Ice stuck at the ice outlet	Push the ice removal baffle and immediately release it
Dripping water from the ice outlet	Wastewater box	The drainage outlet inside the wastewater tray is blocked	Clear the drainage outlet and clean the wastewater tank
Ice making time is too long	water temperature	The water temperature is too high	Reduce water temperature
	Ambient temperature	The ambient temperature is too high or too low	Use at suitable ambient temperature
	Cryogen	Refrigerant leakage	Contact after-sales service

■ Coffee machine

- ◆ No any water in the beans hopper and powder hopper.
- ◆ Don't open the door, take out ground container, drip tray, water tank and any other spare parts, when machine working.
- ◆ Water tank only for cold and pure water, hot water and ice water is not permitted;
- ◆ The half roasted beans and beans with less oil for suggesting. The oily beans and burned beans are not for suggesting.
- ◆ Attention with burns. Don't touch the outlet, when the drink in process.
- ◆ The brush and cleaning agent are not permitted. In case of machine damaging, please clean machine with soft cloth.
- ◆ Water and the powder must be lower than the MAX line. If there is no MAX line, please pour water and powder about 8 full.
- ◆ Don't power off, when the machine is drink making, self-testing, cleaning automatically.
- ◆ Adjust the outlet height with the cups.
- ◆ Power off with correct steps: Please click the "Power off", machine rinse automatically. Rinse is completed, the display light off. Push the power button. Please unplug it.
- ◆ Please clean the ground container and waste water barrel.
- ◆ To make sure the good quality, we suggest clean water tank and change water daily.
- ◆ Don't use machine, when the tap water is stopped. (If the machine supplied with tap water)

■ Equipment Failure Analysis

Fault phenomenon	Possible reasons	Handling method
Unable to place an order	Lack of water and beans	Tonifying beans and water
	The coffee machine needs to be clear	Clean according to the coffee machine instructions
	The coffee machine is not idle	Check if the coffee machine screen is the main interface (where you can access the product list)
Unable to place an order for iced coffee	Is the ice maker turned on	Check if the power indicator light on the ice maker panel is on
	Ice making in progress	Wait for 15 minutes after turning on the device
	Ice maker water shortage alarm	Check if the inlet pipe joint is below the water surface
Unable to place an order for milk coffee	Lack of milk	Supplement milk
Unable to retrieve cup	Claw not self checking	Clear the gripper, the emergency stop robot is restarting the robot
	Finger deformation	Replace with a new clamp finger
	The cup is not installed properly	Install the cup correctly
Network loading failed	The robot is not turned on	Turn on the robot
	The router is not powered on and turned on	Turn on the router
Excessive brewing pressure	Lack of water	Check for water ingress and replenish it
	Deep cleaning is required	Perform daily maintenance operations
Unable to remove cover	The lid is not installed properly	Install the lid correctly
	Claw not self checking	Clear the gripper, the emergency stop robot is restarting the robot