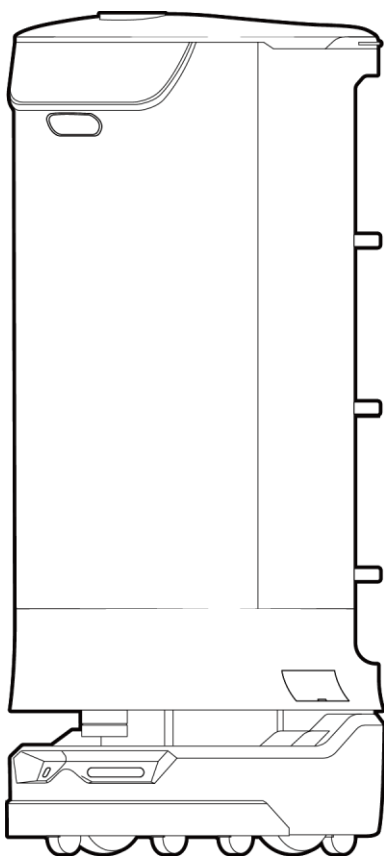




HolaBot User Guide

Document Version: V5.4

Model: Pudu HolaBot — HLFR01/HL100

Shenzhen Pudu Technology Co., Ltd.

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Foreword

Purpose

This user guide introduces the features and technical specifications of HolaBot, to make it easier for users to understand and use HolaBot.

Target Audience

This user guide is intended for:

- Customers
- Sales engineers
- Installation and commissioning engineers
- Technical support engineers

Revision

Date	Revision
March 21, 2022	Initial release
July 28, 2022	Added introduction to software features
2023/11/17	Revision of After-sales Policy

Symbol Conventions

This user guide may contain the following symbols, whose meanings are explained below.

Symbol	Description
 Danger	Indicates fatal dangers, which, if not avoided, will result in death or serious injury.
 Warning	Indicates moderate or mild hazards, which, if not avoided, may result in minor personal injury or damage to the robot.
 Caution	Indicates potential risks, which, if ignored, may result in damage to the robot, loss of data or other unforeseen consequences.
 Note	Indicates additional information to the main text, which is a supplement to and reiteration of the main text.

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1. Safety Instructions

Electrical requirements:

- It is strictly prohibited to use chargers other than the original charger to charge the robot. If the charger is found to be faulty, please replace it as soon as possible.
- Be sure to charge the robot as soon as it has less than 20% power remaining. Working at low battery levels for long periods will shorten the battery's service life.
- Make sure that the power supply voltage complies with the voltage range on the charger, otherwise the charger may be damaged.
- Disconnect the power supply as soon as charging is complete. Do not charge the robot for extended periods of time when the battery is full.
- If the robot is not used for long periods, be sure to turn the key switch to "OFF."
- Dispose of batteries according to local regulations. Do not dispose of batteries as domestic waste. Improper handling of the battery may lead to explosions.
- Do not drop the battery or allow any objects to collide with the battery or charger, to avoid damaging the battery or charger.
- Do not use damaged batteries.
- Assign a dedicated person to attend to the robot while charging. Do not leave the robot unattended while it is being charged.
- When charging with a charger, be sure to snap the clip of the charging port to avoid burns or damage to the device caused by high temperature at the charging port.
- Do not move the charging pile while in use. Please use the charging pile in its dedicated space.

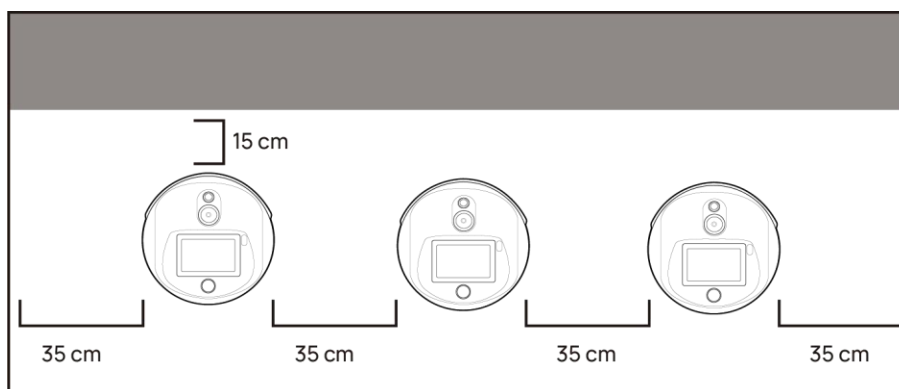
Use requirements:

- While the robot is moving, do not block the camera on the top of the robot, to prevent the robot from walking abnormally. If this happens, please pause the current task and push the robot back to the correct route before letting it proceed.
- Cleaning or maintenance work is prohibited while the robot is powered on.
- Do not place cookers with naked flames or flammable or explosive items on the robot's trays.
- Do not pick up or place any items while the robot is moving, to avoid dish losses or personal injury caused by accidental collisions.
- Make sure that there are no loose wires or sharp objects (such as decoration waste, glass, screws) on the ground, as they may damage the robot when it is moving.
- Do not play in front of the robot while it is moving, to avoid unnecessary injuries.
- Do not push or carry the robot while it is moving, to prevent it from walking abnormally.

- The robot must not be disassembled or repaired by anyone other than trained professionals. In case of any fault with the robot, please contact a technical support engineer from Shenzhen Pudu Technology Co., Ltd. immediately.
- When moving the robot, please observe the requirements on the maximum allowed weight for a single person stipulated by local laws or regulations. While the robot is being moved, please be sure to always keep it in an upright position. It is prohibited to lift the robot by the trays or the compartment.
- In case of an emergency while the robot is moving, press the emergency stop switch on the top of the robot to stop the robot.
- If the collision sensor is hit while the robot is moving, the robot will stop moving and pause the task. At this time, you can resume the task according to the interface guidelines.
- Do not let any liquid into the robot, to avoid damage to the robot.
- The robot is capable of avoiding obstacles automatically. It is prohibited to obstruct the robot while it is moving at high speeds, as this may cause accidents.
- Do not subject the robot to violent impact or vibrations, to avoid damage to the robot.
- Do not use strong chemicals, cleaning agents or strong detergents to clean the robot. Wipe the robot with a clean, dry cloth.

Environmental requirements:

- Do not use or charge the robot in dangerous environments with high temperature, high pressure, or risks of flames or explosions, so as to avoid personal injury or damage to the product.
- Only use the robot in flat, indoor environments (smooth floor with a slope of less than 5°, without raised areas of 0.7cm(0.28in) or higher).
- Do not use the robot in a humid environment or in the presence of liquid or viscous substances on the ground, so as to avoid damage to the robot.
- Do not use the robot in locations where wireless devices are explicitly prohibited, as this may interfere with other electronic devices or cause other hazards.
- While walking, a single robot needs a minimum passing width of 0.7m(2.30ft). When two robots are walking toward each other, the recommended minimum passing width is 2m(6.56ft).
- When two robots are put at the standby location in parallel, the robots must be at least 35cm(13.78in) away from each other, 15cm(5.91in) from the rear wall, and 35cm(13.78in) from the side walls.



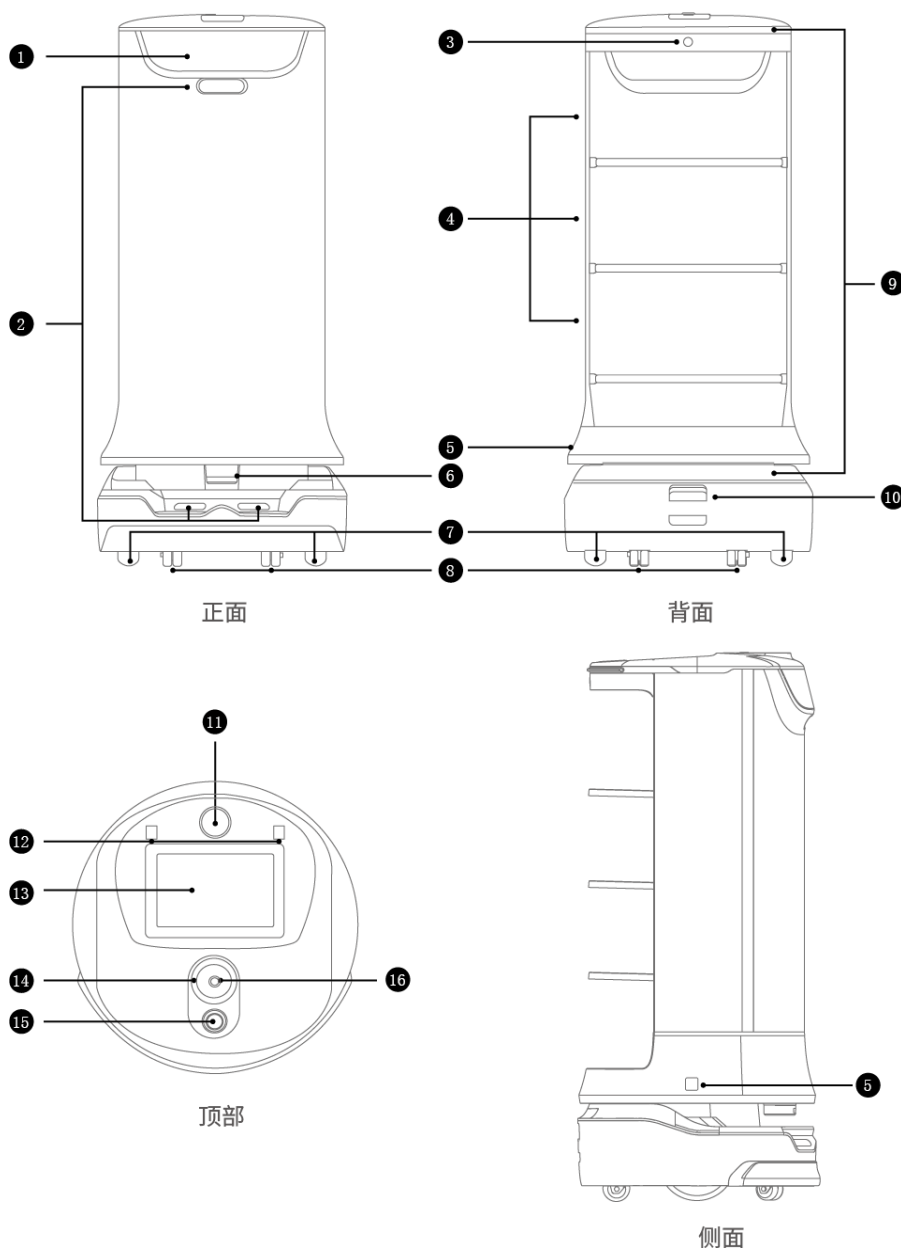
- If there are pure black objects (such as base boards), mirrors or transparent objects (such as French windows) at a height of 16.5–22cm(6.50–8.66in), these may interfere with the robot's radar reflection and the robot may walk abnormally. You may need to make necessary modifications (for example, applying stickers). Please contact Pudu technical support for more details on modification.
- The robot's maximum climbing angle is 5°. Do not pause the robot while it is on a slope. This is to avoid skidding, which may result in dish losses and other risks.
- Do not dispose of the robot and its accessories as ordinary domestic waste. Please comply with local regulations on the disposal of the robot and its accessories and support recycling.

2. Product Components

2.1 Overview

HolaBot is a delivery robot that features calling notifications and comes equipped with LiDAR and visual integrated location and navigation solutions. Characterized by high loading capacity, voice control and remote control, it is capable of calling, notifying and spontaneous walking, making it suitable to work efficiently, conveniently and flexibly in various scenarios. To cater to different business scenarios, HolaBot offers a variety of modes for users to choose from, such as delivery mode, collection mode, etc.

2.2 Appearance and Components



No.	Description
1	Dot matrix screen
2	Depth vision sensors
3	Power switch
4	Trays
5	Charging jack
6	LiDAR
7	Drive wheels
8	Auxiliary wheels
9	Light strip
10	Battery compartment
11	Lightning button
12	Infrared gesture sensor
13	LCD screen
14	6-mic circular array kit
15	Emergency stop switch
16	Vision sensor

Button description:

Button	Description
Power switch	Press and hold for 1 second to power on the robot. Press and hold for 3 seconds and follow the on-screen prompts to power off the robot.
Emergency stop switch	In case of an emergency while the robot is moving, press the emergency stop switch to stop the robot. Turn the emergency stop switch clockwise and follow the on-screen prompts to restore operation.
Key switch	The key switch controls the power supply to the robot. Before charging or powering on the robot, make sure that power supply is turned on.
Collision Sensor	In order to avoid accidental injury, if the collision sensor is hit while the robot is moving, the robot will stop moving and pause the task. In this case, you can resume the task according to the interface operating guidelines.

2.3 Technical Specifications

Product Feature	Description
Operating voltage	DC 23–29.4 V
Power input	AC 100–240 V, 50/60 Hz
Power output	29.4 V, 8 A
Battery capacity	25.6 Ah
Charging time	4.5 h
Battery life	12 h (None load)
Cruise speed	0.5–1.2 m/s (1.64–3.93 ft/s)
Navigation method	Laser and visual integrated SLAM positioning
Minimum passing width	70 cm (27.56 in)
Maximum surmountable height	7 mm (0.28 in)
Maximum climbing angle	5°
Tray size	390 mm × 360 mm (15.35×14.17 in), in a 120 L ultra-large compartment
Number of trays	4
Height between tray levels	From top to bottom: 216 mm/184 mm/184 mm/184 mm (8.5 in/7.24 in/7.24 in/7.24 in)
Tray supporting capacity	Walking on flat surfaces: 15 kg (33.07 lbs) /level Crossing height of 5 mm (0.19 in) : 10 kg (22.46 lbs) /level
Overall material	ABS/aviation grade aluminum alloy
Overall weight	55 kg (121.35 lbs)
Overall dimensions	542 mm × 534 mm × 1228 mm (21.34×21.02×48.35 in)
Screen specifications	10.1" LCD display
Operating system	Android
Microphone	6-mic circular array kit
Speaker power	10 W ×2 stereo speaker
Working environment	Temperature: 0°C to 40°C (32° to 104° F) Humidity: ≤ 85% RH
Storage environment	Temperature: -40°C to 65°C (-40° to 149° F) Humidity: ≤ 85% RH

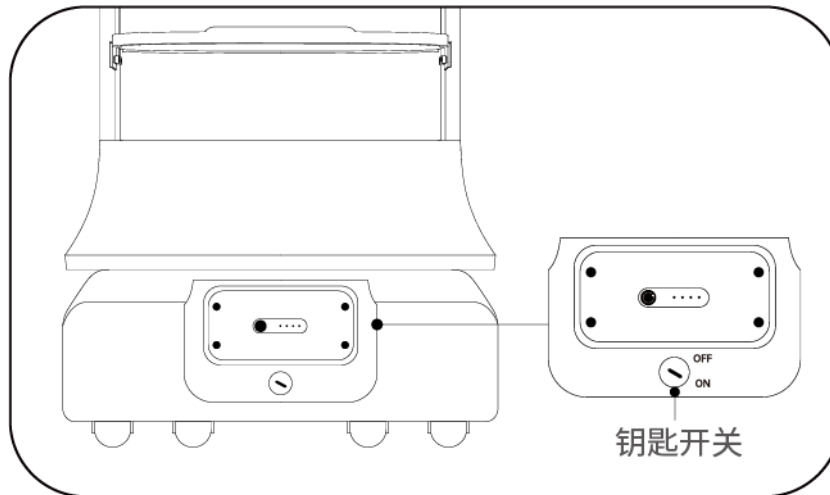
Operating altitude	<2000 m (< 6561.68 ft)
Road surface requirements	Indoor environment with flat, smooth surfaces
IP rating	Overall body: IP20 Tray compartment: IPX5

3. Product Instructions

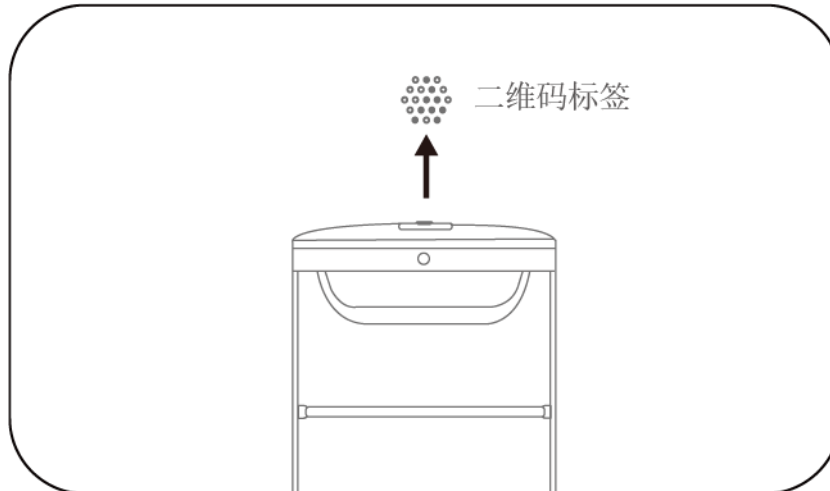
3.1 Quickstart guide

3.1.1 Powering on

Step 1. Open the battery compartment and check that the key switch has been turned to "ON." Then close the battery compartment.

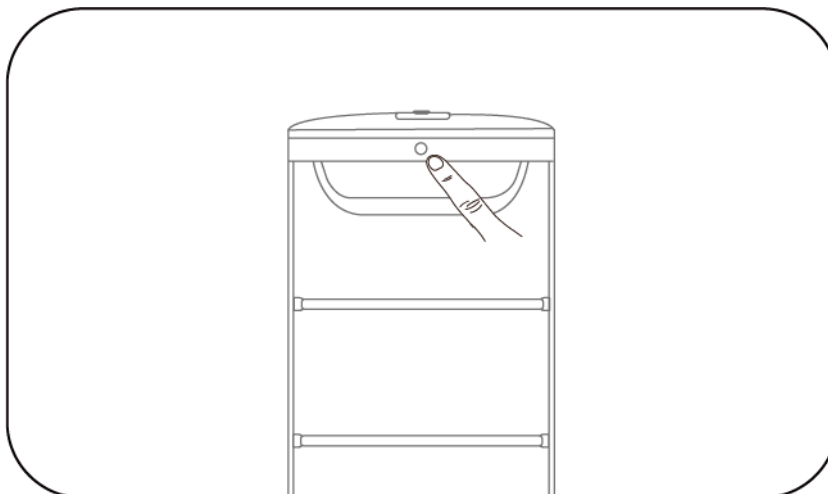


Step 2. Move the robot to the startup location.



Step 3. Press and hold the power switch for 1 second.

The light strip blinks and the screen displays the startup logo and animation and the Android desktop, indicating that the robot has been successfully powered on.



Note

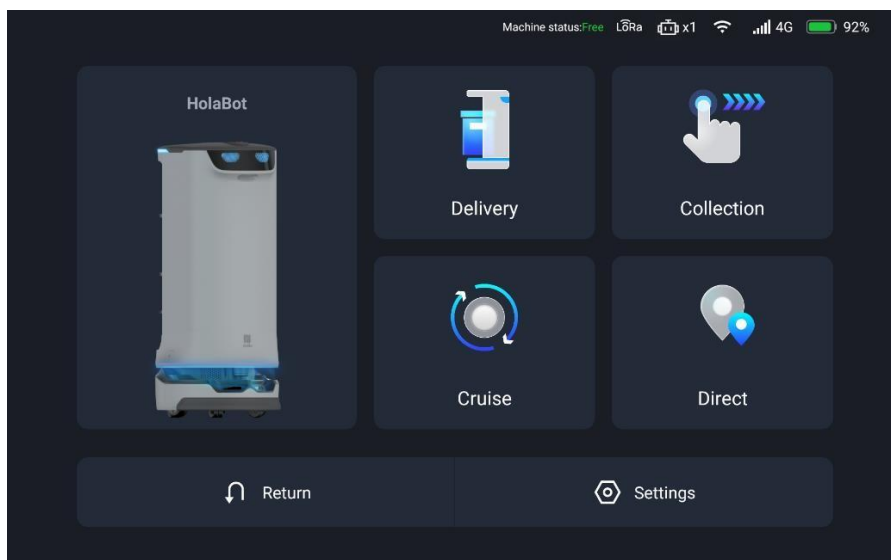
By default, the system will automatically launch the Pudu app after the robot is powered on. If it is not launched, please tap the Pudu app on the system desktop to launch it.

Step 4. The robot is now powered on. Try it out!

3.2 Task Scenarios

3.2.1 Function description

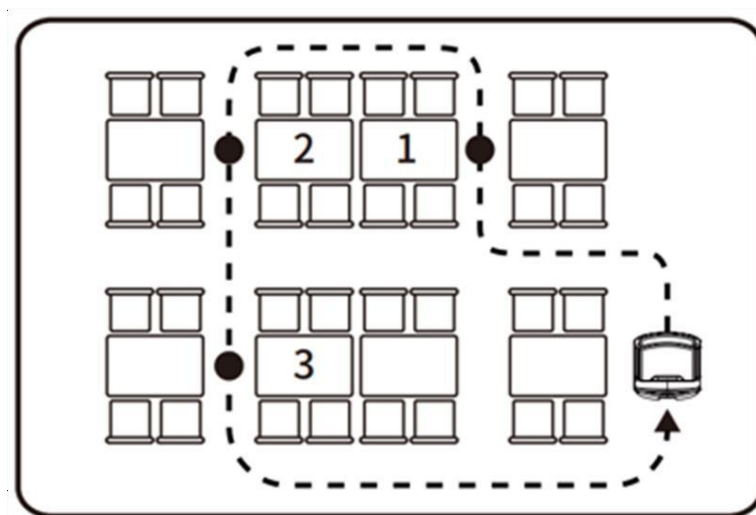
To cater to different business scenarios, the robot offers delivery mode, collection mode, cruise mode and direct mode. Once the robot is powered on, it will enter the main interface and the user can make a choice according to the different usage scenarios.



Mode	Description
Delivery mode	The robot can deliver to multiple destinations at once. Put items with different destinations on different trays and enter the respective destinations. The robot can automatically plan the best route and deliver the items. After delivery, the robot will automatically return to the docking location.
Collection mode	The robot can collect items from multiple destinations at once. Once the respective destinations are entered, the robot will plan the best route for collecting the items. After collecting the items from all the destinations, it will deliver them all to the collection location. After collection, the robot will automatically return to the docking location.
Cruise mode	The robot cruises along a predetermined route. You can also set up stopping points and voice reminders along the route to ensure there is enough time for items to be placed.
Direct mode	The robot will go straight to the destination and not return after completing the task.

3.2.2 Delivery mode

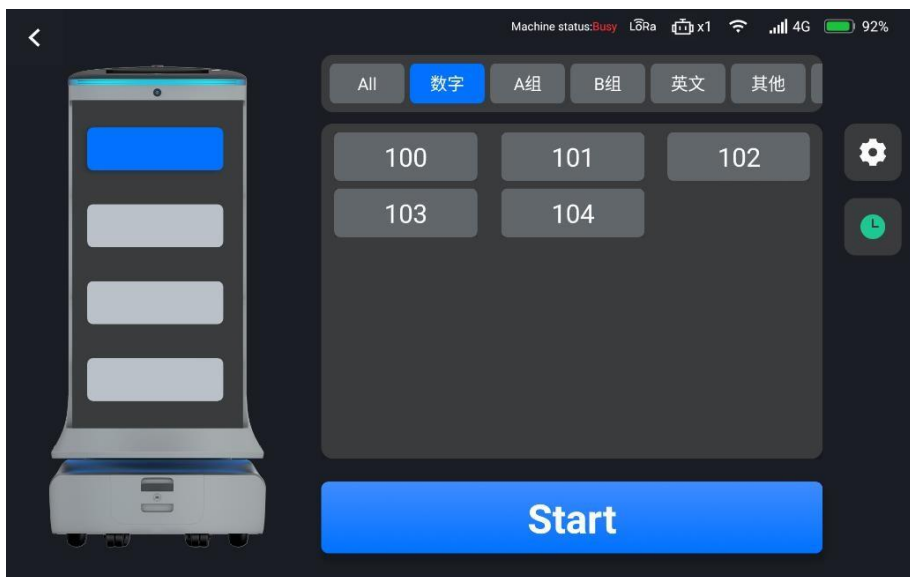
In delivery mode, the robot will deliver items to specified locations. The robot can deliver to multiple destinations on a single task. Put items with different destinations on different trays and enter the respective destinations. It can automatically plan the best route and deliver the items. After delivery, the robot will automatically return to the docking location.



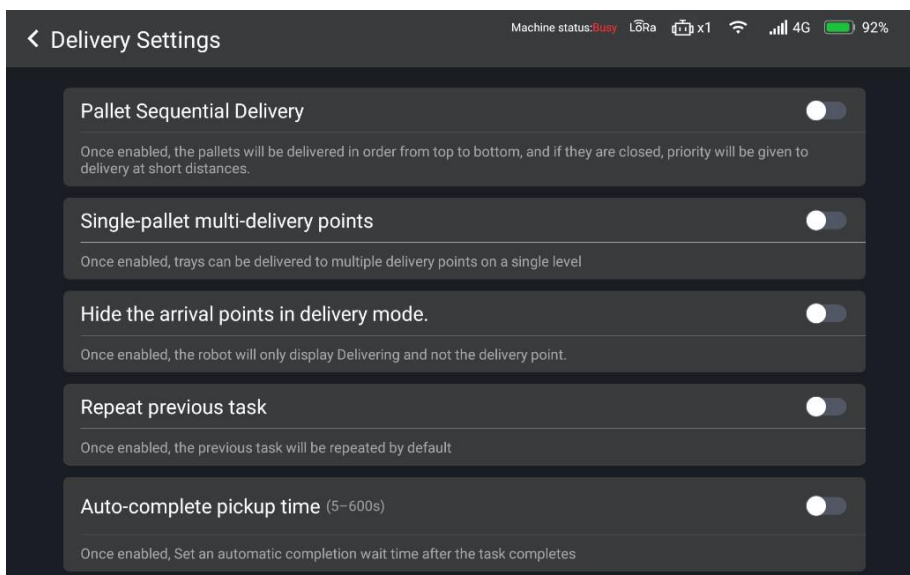
The example below is for a food delivery task.

Step 1. Tap "Delivery" at the food pick-up location.

Below is an image of the "Delivery mode" screen.



You can see an image of the "Delivery settings" screen and find detailed descriptions in the following table.



Delivery Settings	Description
Delivery in the order of trays	This enables or disables delivery in the order of trays. When enabled, the trays will be delivered in order from top to bottom. When disabled, priority will be given to delivery at short distances.
Single-pallet multi-delivery locations	This enables or disables single-pallet multi-delivery locations. When enabled, trays on a single pallet can be delivered to multiple delivery locations. You can set up to 20 delivery locations for trays on a single pallet.

Delivery Settings	Description
Hide the arrival locations in delivery mode.	This allows you to hide or show the arrival locations in delivery mode. When enabled, arrival locations will be hidden during delivery. When disabled, arrival locations will be shown during delivery.
Repeat previous task	This allows you to repeat the previous task. When enabled, the system will repeat the previous task once the current task is complete.
Auto-complete pick-up time	This allows you to turn on and set up a wait time before automatic completion of delivery tasks. When enabled, if the "Complete" button is not tapped within the specified period after the robot arrives at the destination, the robot will automatically complete the current task and begin the next task. Time range: 5–600 s. Default value: 30 s
Arrival voice	This allows you to turn on/off the arrival voice. When enabled, you can customize the arrival voice.
Play music when delivering.	This allows you to play music during delivery. When enabled, the robot will play music during delivery.
Play music during return	This allows you to play music during return. When enabled, the robot will play music during return.
Delivery speed	This allows you to set the delivery speed.

Step 2. Put the dishes on the corresponding trays.

Step 3. Tap the tray and select the destination table.

The destination table number will be shown on the corresponding tray.

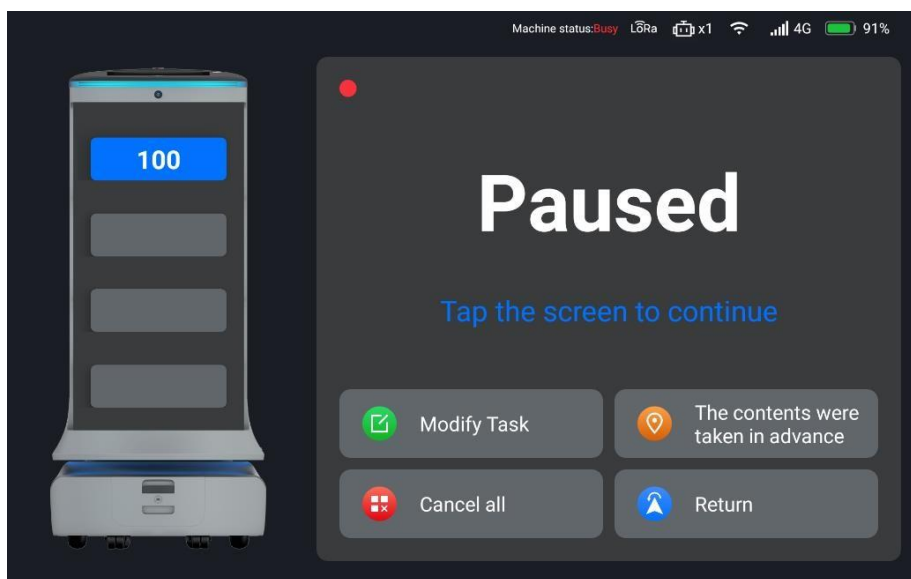
Step 4. After entering the table number, tap "Go."

The robot will go to the specified table along the predetermined route.

Step 5. Upon arriving at the destination table, the robot will give a voice prompt. The server can then follow the on-screen prompts and pick up the dishes.

Step 6. After the server picks up the dishes and taps "Complete" or the lightning button, the robot will begin the next task.

If you need to modify a task during the delivery process, pick up items earlier, cancel all tasks or return the robot, you can do so after tapping the screen or the lightning button and pausing the robot. If the robot is paused but no further action follows, the robot will proceed with the current task.



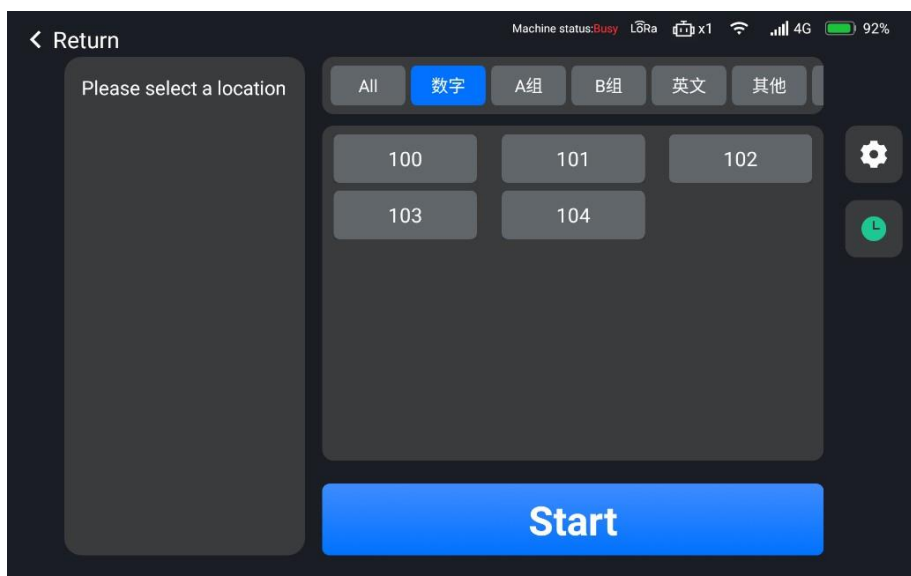
Button	Description
Modify Task	Tap this button to change the destination of a delivery task.
Next Task	Tap this button to pick up items earlier and skip to the next task.
Cancel All	Tap this button to cancel all delivery tasks. The robot will not return to the docking location.
Return	Tap this button to return the robot to the docking location.

3.2.3 Collection mode

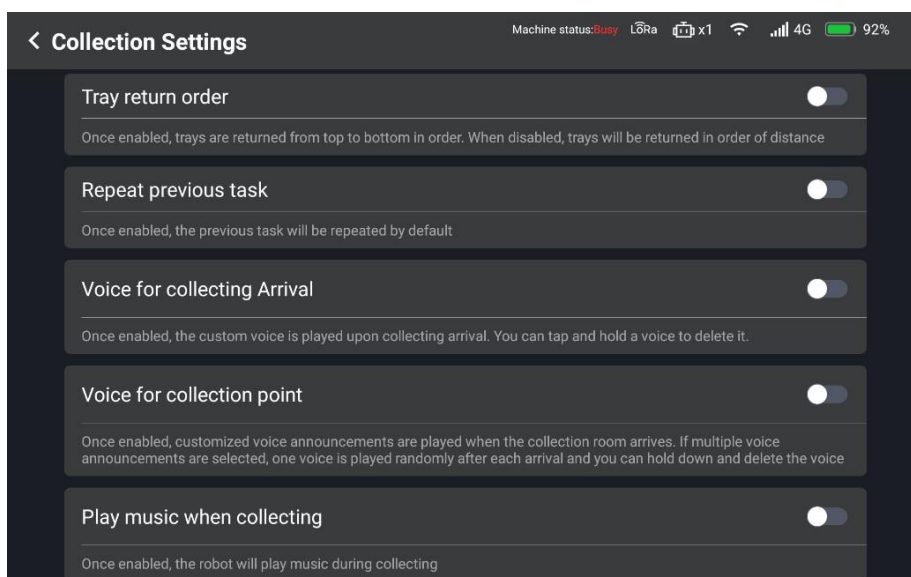
In collection mode, the robot can collect items from multiple destinations on a single task. Once the respective destinations are entered, the robot will plan the best route to collect the items.

Step 1. Tap "Collection" on the main screen.

Below is an image of the "Collection mode" screen.



You can see an image of the "Collection settings" screen and find detailed descriptions in the following table.



Collection Settings	Description
Collection in the order of trays	This enables or disables collection in the order of trays. When enabled, the trays will be collected in order from top to bottom. When disabled, priority will be given to collection at short distances.
Repeat previous task	This allows you to repeat the previous task. When enabled, the previous task will remain in the "Collection mode" screen.

Collection Settings	Description
Voice for arrival when collecting	This allows you to play a voice message when the robot arrives at the arrival locations. When enabled, you can customize the voice message when the robot arrives at the arrival locations.
Voice for collection location	This allows you to play a voice message when the robot arrives at the collection location. When enabled, you can customize the voice message when the robot arrives at the collection location.
Play music when collecting	This allows you to play music when the robot is collecting. When enabled, the robot will play music during collection.
Play music when going to collection locations	This allows you to play music when the robot is going to the collection locations. When enabled, the robot will play music when going to the collection locations after collection.
Collection speed	This allows you to set the collection speed.

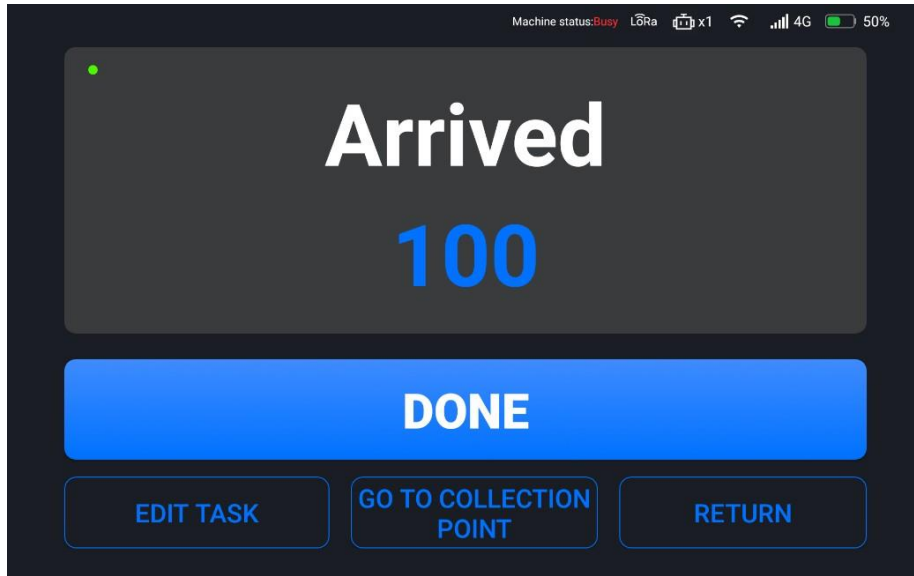
Step 3. Select the collection destinations and tap "Go."

The robot will go to the specified destination along the predetermined route.

Step 4. Upon arriving at the destination, the robot will give a voice prompt. The server can then follow the on-screen prompts and collect the items.

Step 5. Put the items in the robot and tap "Complete" or the lightning button, and the robot will begin the next task.

During collection, if the trays are full, you can tap the screen and select "Go to collection location" to return the robot to the collection location. After the robot arrives at the collection location, you can follow the on-screen prompts and voice messages to pick up the items. Tap "Complete" or the lightning button, and the robot will go back to the docking location. If you want the robot to continue with the unfinished collection task, you need to select the destination again.

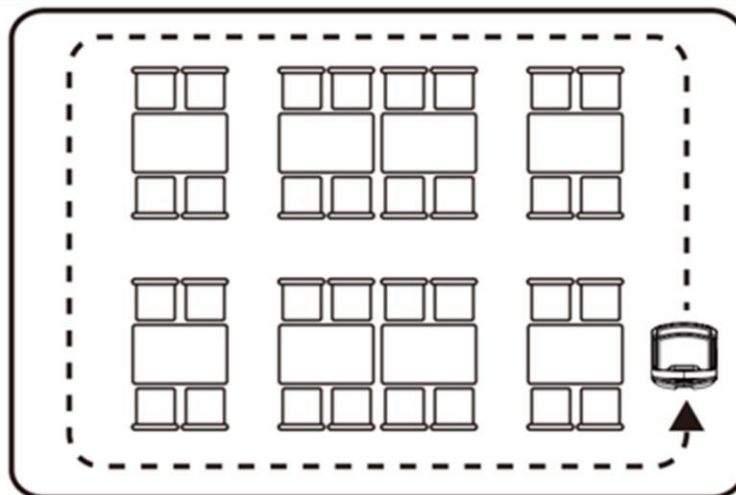


If you need to modify a task or return the robot to the collection location or docking location, you can do so after tapping the screen or the lightning button and pausing the robot. If the robot is paused but no further action follows, the robot will proceed with the current task.

Button	Description
Modify Task	Tap this button to modify the destination and proceed with the task.
Go to collection location	Tap this button to return the robot to the collection location.
Return	Tap this button to return the robot to the docking location.

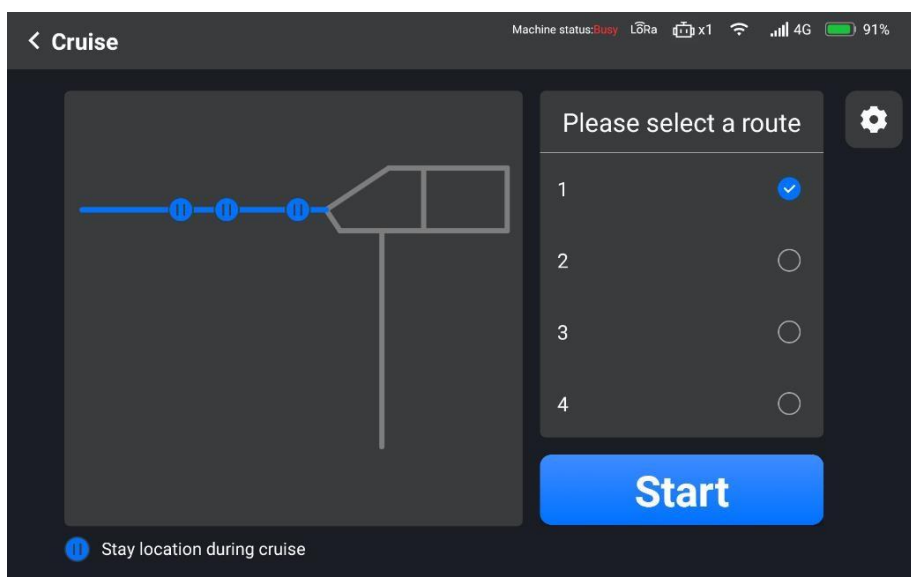
3.2.4 Cruise mode

In cruise mode, the robot cruises along a predetermined route. You can also set up stopping points and voice reminders along the route to ensure there is enough time for items to be picked up or placed.

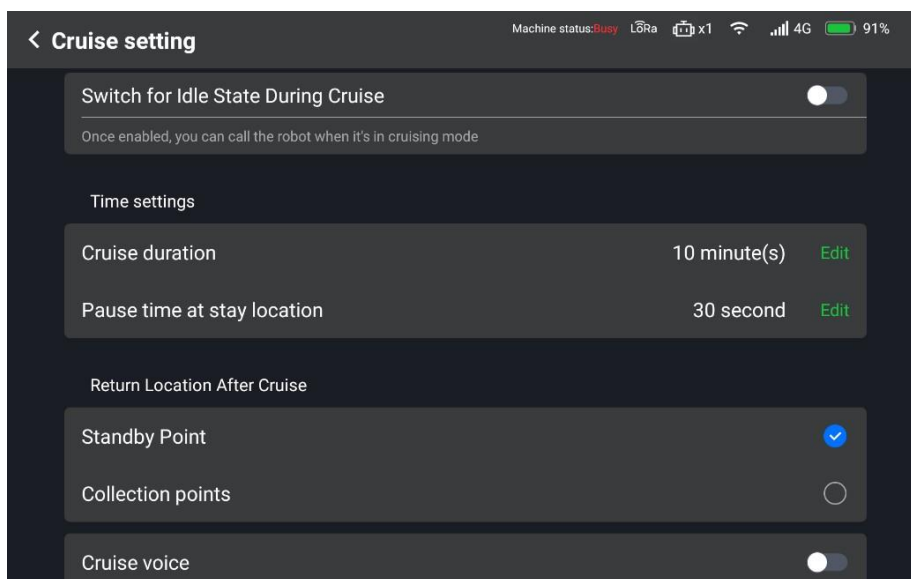


Step 1. Tap "Cruise" on the main screen.

Below is an image of the "Cruise mode" screen.



You can see an image of the "Cruise settings" screen and find detailed descriptions in the following table.



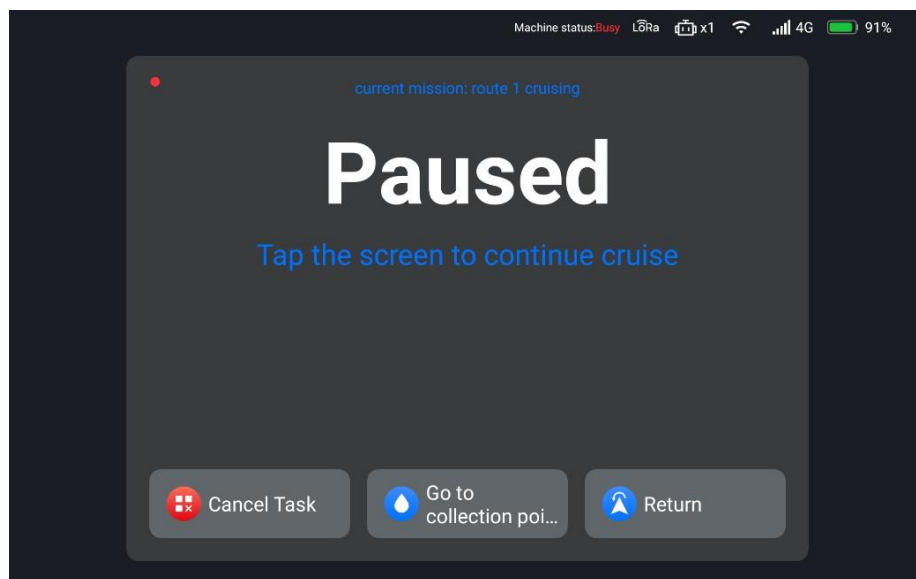
Cruise Settings	Description
Accept calls while cruising	This allows the robot to be called while it is cruising. When enabled, the robot can be called while cruising.
Stopping point call	This allows the robot to be called at stopping points. When enabled, the robot can be called when it stops at the stopping points while cruising.
Time Settings	This allows you to set the cruise duration and stopping time at the stopping point.
Return location after cruise	This allows you to set the location the robot will return to after cruising.
Cruise voice	This turns the cruise voice on or off. When enabled, you can customize the voice messages during cruise and the intervals between voice messages. You can select multiple customized voice messages, and they will be played at random during the cruise.
Voice for arrival at stopping point	This allows you to play voice messages when the robot arrives at stopping points. When enabled, you can customize the voice messages, which will be played when the robot arrives at the stopping points during the cruise.
Play music when cruising	This allows you to play music when the robot is cruising. When enabled, the robot will play music during cruising.
Play music during return	This allows you to play music during return. When enabled, the robot will play music during return.

Cruise Settings	Description
Cruise speed	This allows you to set the collection speed.

Step 2. Select the cruise route and tap "Go."

The robot will cruise at the specified cruise speed and for the specified duration, stopping at the stopping points.

If you need to send the robot to the collection location or docking location during the cruise, you can do so after tapping the screen or the lightning button and pausing the robot. If the robot is paused but no further action follows, the robot will proceed with the current task.



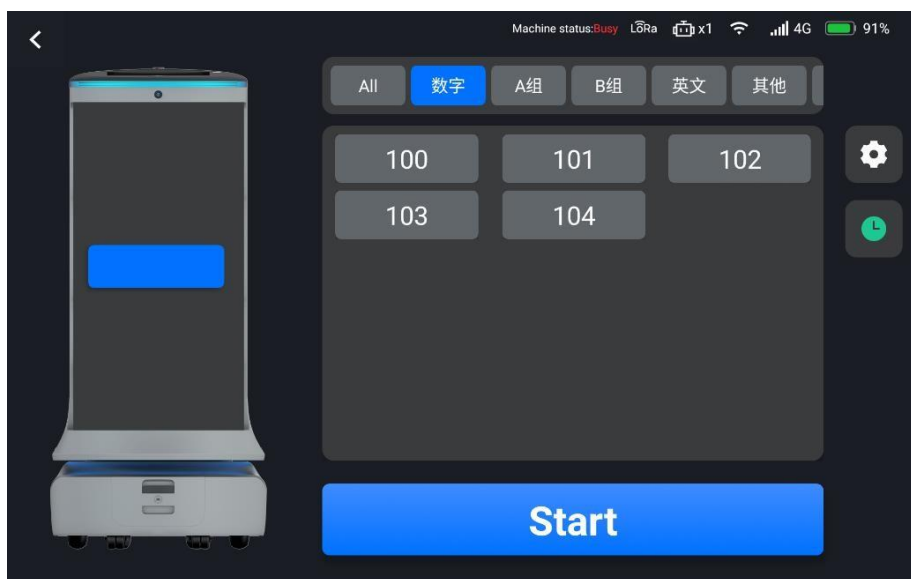
Button	Description
Cancel Task	Tap this button to cancel the cruise task.
Go to collection location	Tap this button to return the robot to the collection location.
Return	Tap this button to return the robot to the docking location.

3.2.5 Direct mode

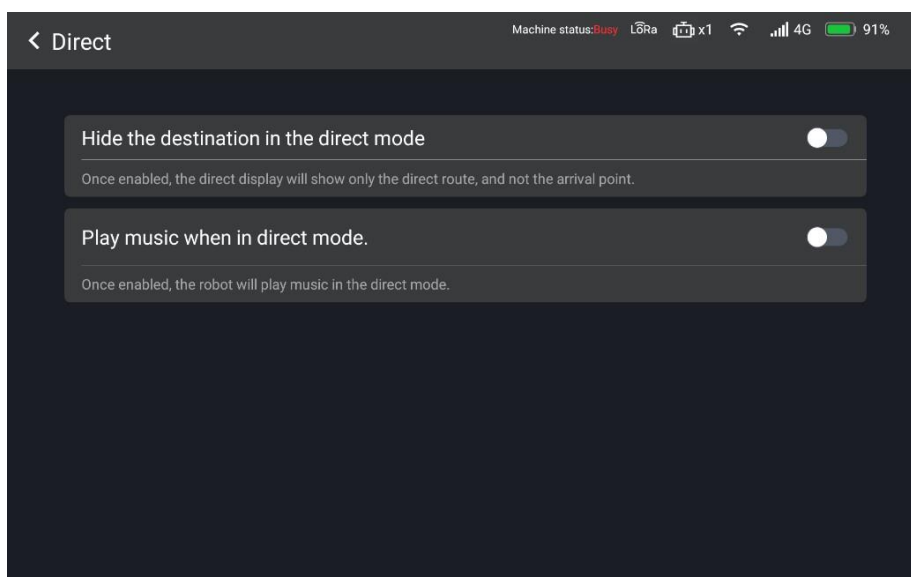
In direct mode, the robot will execute a single delivery task and exit upon completion. The example below is for a food delivery task.

Step 1. Tap "Direct" at the food pick-up location.

Below is an image of the "Direct mode" screen.



You can see an image of the "Direct settings" screen and find detailed descriptions in the following table.



Delivery Settings	Description
Hide the destination when in direct mode	This allows you to hide or show the destination when in direct mode. When enabled, the destination will be hidden in direct mode. When disabled, the destination will be shown in direct mode.
Play music when in direct mode	This allows you to play music during delivery. When enabled, the robot will play music during delivery.

Step 2. Put the dishes on the tray and select the destination table.

The destination table number will be shown on the tray.

Note

You can select only one destination in direct mode.

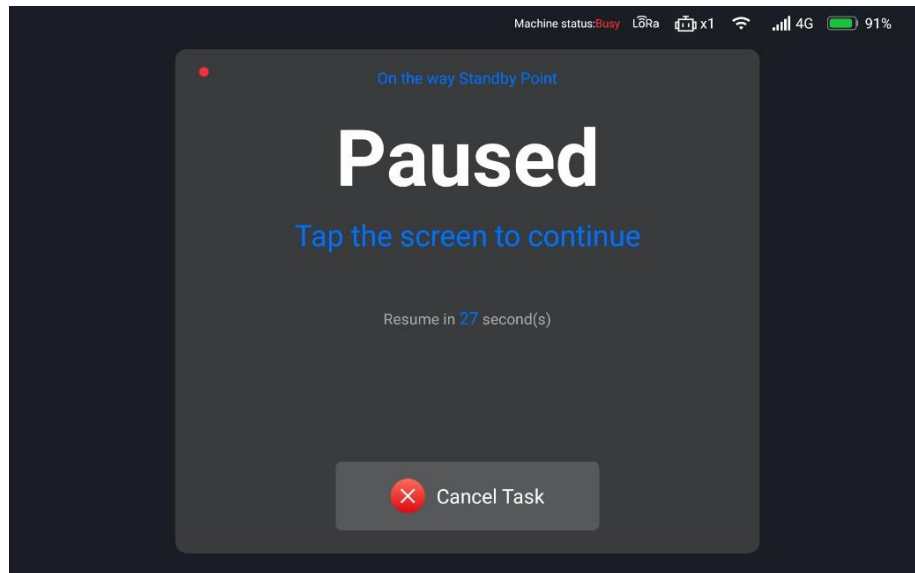
Step 3. Tap "Go."

The robot will go to the destination table along the predetermined route.

Step 4. After the task is completed, tap the menu bar and select "Return" or continue with the next task.

The robot will execute the task along the predetermined route.

If you need to cancel all tasks or return the robot, you can do so after tapping the screen or the lightning button and pausing the robot. If the robot is paused but no further action follows, the robot will proceed with the current task.



Button	Description
Cancel All	Tap this button to cancel all tasks. The robot will not return to the docking location.
Return	Tap this button to return the robot to the docking location.

Note

You can find and adjust the "Pause time settings" in "Basic Settings."

3.3 Settings

Settings	Description
Basic Settings	Set screen brightness, switch languages, etc.
Network Settings	Set Wi-Fi and cellular mobile network.
Map Settings	Switch maps, select docking locations and collection locations.
Volume Settings	Adjust volumes for music, voice messages and screen touch sound.
Voice Settings	Enable or disable voice wakeup, update voice message packages and select voices.
Speed Settings	Turn on/off steady mode and safe mode. Set the robot's speed in different modes. Set the robot's speed in delivery, collection and cruise modes as well as when traveling or returning, in the range of 0.5–0.9 m/s (1.64–2.95ft/s).
Password Settings	Enable or disable password protection for each mode. When enabled, a password is required when the robot enters or exits a mode.
Gesture Settings	Enable or disable the docking location sensor switch, collection location sensor switch, calling location sensor switch and detection switch when paused.
Music Library	Scan code to import music. You can select the imported music on the Settings screen of different modes, so that the robot plays music in different scenarios. (Currently you can only use Android phones to scan codes and import music.) Enable or disable breakpoint playback. When enabled, the robot will continue playing unfinished songs next time it performs a task.
Call Settings	Enable or disable calls. When enabled, the robot can work with Pudu beeper and third-party systems. The settings include console settings, channel settings, beeper settings, task partition settings and calling card settings.
Version Upgrade	View the current version and check whether it is the latest version. If it is not the latest version, you can download and upgrade to the latest version. Before upgrading, make sure that the robot has a minimum battery level of 20%, otherwise the upgrade may fail.
About	Information about the company and services, such as official website and robot operation guide, etc.

Settings	Description
Debug	Adjust the robot's parameters. This is intended for use by technical support engineers only. Our company shall not bear any responsibility for accidents caused by unauthorized operation.
Advanced Settings	Advanced settings of the robot. This is intended for use by technical support engineers only. A password is required.

4. Troubleshooting

4.1 Faults when the robot is working

Fault

The robot reports the following errors while moving:

- Abnormal motor parameters
- Abnormal sensor parameters
- Abnormal sensor connection
- Abnormal motor rotation

Solution

Step 1. Follow the on-screen prompts and tap "Confirm" or "Retry" to see if the robot can continue to operate.

Step 2. If not, please restart the robot and re-enter the task.

Step 3. If the fault persists after restarting, please contact the technical support engineer.

4.2 Positioning failure

Fault

The screen displays "I'm lost. Please push me to the positioning mark" or "Positioning failed, tap to retry."

Possible causes

- The robot failed to recognize the marker.
- The map selected by the robot doesn't match the actual map.

Solution

Step 1. If the robot's current map doesn't match the actual environment, please go to "Map Settings" and select the correct map.

Step 2. Check whether the robot is located right below the marker. If the robot is far away from the marker, please put it right below the marker. If positioning still fails, please restart the robot.

Step 3. Check whether the robot's depth vision sensor is blocked by foreign objects or oil stains. You can use the lens cleaning kit to clean the sensor.

Step 4. Check whether the depth vision sensor's auxiliary light is red. If not, please contact the technical support engineer as soon as possible.

4.3 Unable to charge the robot

Fault

The robot is unable to charge.

Solution

- Check whether the key switch has been turned to "ON."

- Check whether the charger indicator is on. If not, it is possible that the charger is damaged. Please contact the technical support engineer.

4.4 The robot cannot be powered on.

Fault

The robot cannot be powered on.

Solution

- If the robot has a low battery level, please charge the robot.
- If the battery level is normal, check whether the key switch is turned to "ON."
- If the robot still cannot be powered on, please contact the technical support engineer.

4.5 The robot staggers while walking.

Fault

The robot staggers or pauses while walking.

Solution

- Check whether there is anything blocking the robot in front.
- Check whether the depth vision sensor is covered by oil or soup stains.
- Check whether the width of the route meets the robot's minimum passing width.
- Check whether there are mirrors, reflective metal surfaces or anything else on both sides of the robot's route that may affect its operation. If yes, please attach matt stickers at the height of 16.5–22 cm (6.50–8.66 in).

5. Maintenance and Servicing

5.1 Component maintenance

5.1.1 Maintaining robot parts

Part to maintain	Robot status	Checking frequency	Maintenance method
Drive wheels and auxiliary wheels	Powered off	1 week	Please wipe the surface with a clean cloth.
Trays	Powered off	1 week	Please wipe the surface with a clean cloth. If there are oil stains on the silicone pad, use clean water to wash and wipe it immediately.
Vision sensor, depth vision sensor, LiDAR and infrared gesture sensor	Powered off	1 week	Please use a clean cloth or lens cleaning tools to clean. In case of sudden contamination, be sure to handle immediately to avoid blocked sensors, which may lead to abnormal operation of the robot.
Robot body	Powered off	1 month	Please wipe the surface with a clean cloth.

5.1.2 Cleaning the robot



Warning

Do not use water or other liquids to clean the robot. Be sure to keep the robot dry.

Step 1. Press and hold the power switch for 3 seconds and make sure that the robot is powered off.

Step 2. Turn the key switch to "OFF" and make sure that power supply is disconnected.

Step 3. Wipe the surface with a clean cloth.

Step 4. Wipe the trays, drive wheels and auxiliary wheels with a clean cloth.

 Note

- ★ If the drive wheels or auxiliary wheels are entangled by loose items, please stand the robot sideways and clean it. While the robot is standing on its side, make sure that the floor is clean and smooth (by using mats) to avoid scratches on the housing.
- ★ If there are oil stains on the tray mats, you can take out and clean the mats and put them back when they dry.

Step 5. Use a clean cloth or dedicated cleaning agents to clean the vision sensor, infrared gesture sensor, depth vision sensor and laser radar.

 Note

In case of sudden contamination, be sure to handle immediately to avoid blocked sensors, which may lead to abnormal operation of the robot.

6. After-sales Service Policies

Shenzhen Pudu Technology Co., Ltd. promises to meet the following conditions, within the effective warranty period of the product (the warranty period of different parts of the product may be different). We will provide the spares parts for free, Customers do not need to pay it again, Circumstances beyond the warranty period or not covered by the free product warranty service. We will charge a normal price.

In Warranty

Distributors are responsible for the maintenance for end-users, Pudu Robotics provides free maintenance spare parts and technical support;

- Pudu Robotics provides warranty within following conditions:
 - a. The products are within the specified warranty period;
 - b. The products are normally used, without man-made quality problems;
 - c. No unauthorized disassembly, maintenance, no water, foreign matters, no collision, fall situation happened etc.;
 - d. Product serial number, factory label and other marks are not torn or altered.
 - e. Valid proof of purchase, receipt and tracking number should be provided.
 - f. Damaged spare parts replaced in the warranty shall be owned by Pudu Robotics.

Out of Warranty

The distributors shall pay for the maintenance spare parts and are responsible for the maintenance of end-user, PUDU provides free technical support;

- Pudu Robotics will not provide warranty in any of the following conditions:
 - a. The product has exceeded the warranty period;
 - b. Product serial number, factory label and other marks are torn or altered and cannot be identified;
 - c. Collision, burning and quality problems caused by foreign matter (water, oil, sand, etc.) and not the quality problems of the product itself;
 - d. Damage caused by unauthorized modification, dismantling, shell opening and maintenance under unofficial guidance;
 - e. Damage caused by improper installation, use, charging or storage without following the instructions;
 - f. Delivery robot: Damage caused by use in excess of safe weight;
 - g. Faults of accessories or parts other than major warranty parts
 - h. Faults and damages caused by force majeure (such as earthquake, fire, war, etc.).

Contact information

- Please contact the local regional technical support first to solve your after-sales problems, or contact Pudu Robotics headquarters.

- PUDU Service Email: techservice@pudutech.com.
- PUDU Hotline: +86 755-86952935.

7. Maintenance and Servicing

Part to maintain	Robot status	Checking frequency	Maintenance method
Drive wheels and auxiliary wheels	Powered off	1 week	Please wipe the surface with a clean cloth.
Trays	Powered off	1 week	Please wipe the surface with a clean cloth. If there are oil stains on the silicone pad, use clean water to wash and wipe it immediately.
Vision sensor, depth vision sensor, LiDAR and infrared gesture sensor	Powered off	1 week	Please use a clean cloth or lens cleaning tools to clean. In case of sudden contamination, be sure to handle immediately to avoid blocked sensors, which may lead to abnormal operation of the robot.
Robot body	Powered off	1 month	Please wipe the surface with a clean cloth.

8. Compliance Information

8.1 Federal Communications Commission Compliance Statement

The following information applies to Pudu robotic.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two

conditions:

- This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

8.2 Industry Canada Compliance Statement

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.

8.3 Disposal and Recycling Information



The Waste Electrical and Electronic Equipment (WEEE) Directive aims to minimize the impact of electrical and electronic goods on the environment, by increasing re-use and recycling and by reducing the amount of WEEE going to landfill. The symbol on this product or its packaging signifies that this product must be disposed separately from ordinary household wastes at its end of life. Be aware that this is your responsibility to dispose of electronic equipment at recycling centers in order to conserve natural resources. Each country should have its collection centers for electrical and electronic equipment recycling. For information about your recycling drop off area, please contact your related electrical and electronic equipment waste management authority, your local city office, or your house hold waste disposal service.



Before placing electrical and electronic equipment (EEE) in the waste collection stream or in waste collection facilities, the end user of equipment containing batteries and/or accumulators must remove those batteries and accumulators for separate collection.