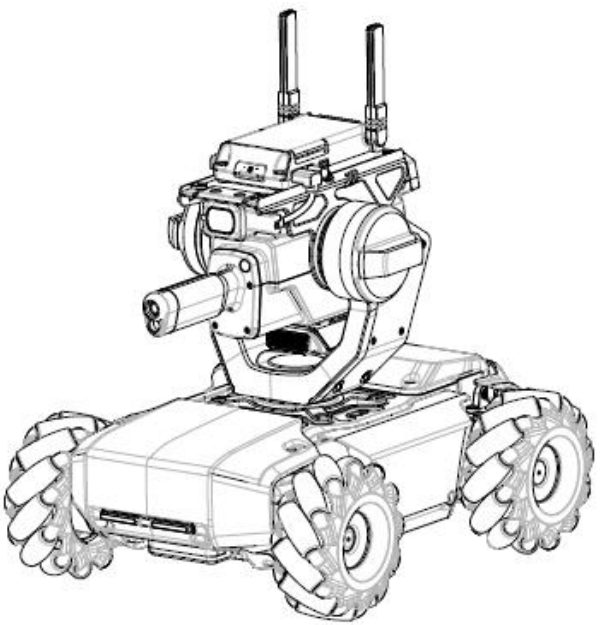
ROBOMASTER S1

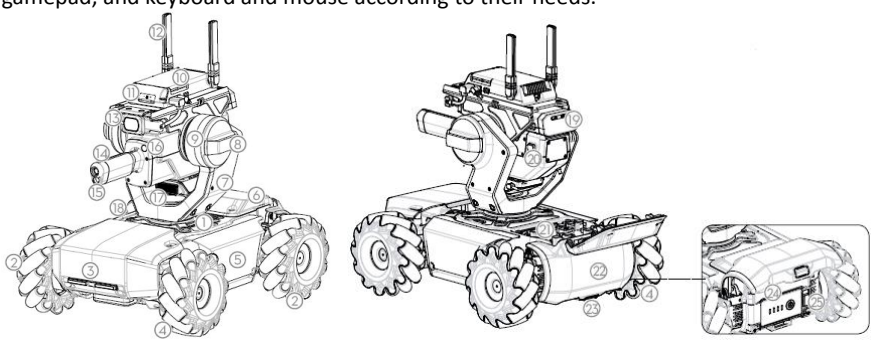
Quick Start Guide

v1.0



RoboMaster S1

The RoboMaster S1 is an educational robot designed for students, families, and science and technology enthusiasts. The robot has an omnidirectional chassis with Mecanum wheels of agile movement, a gimbal of flexible rotation, a stable image transmission system of low latency and FPV (First Person View) display, providing excellent movement performance and immersive control experience. In Multi-player Battle mode, it is available to have a competition via a local area network to enjoy the fun with friends. The powerful computer vision recognition and speech recognition, together with the programmable DIY method, provides various artificial intelligence play. Course resources such as programming learning platform, interactive courses, and video courses constitute a comprehensive robot education solution centered on the RoboMaster S1. To control the robot, users can choose from RoboMaster app, gamepad, and keyboard and mouse according to their needs.



1. Chassis Body
2. Right-Threaded Mecanum Wheels
3. Chassis Front Armor (Hit Detector built-in)
4. Right-Threaded Mecanum Wheels
5. Chassis Left Armor (Hit Detector built-in)
6. Chassis Rear Cover
7. Gimbal
8. Wide Infrared Unit (Hit Detector built-in)
9. Gimbal Pitch Motor (LED built-in)
10. Intelligent Controller
11. microSD Card Slot
12. Intelligent Controller Antennas
13. Camera
14. Gel Bead Launcher
15. Launch Trajectory Light
16. Narrow Infrared Unit
17. Speaker
18. Chassis Right Armor (Hit Detector built-in)
19. Gel Bead Container
20. Container Eject Button
21. Motion Controller
22. Chassis Rear Armor (Hit Detector built-in)
23. Rear Armor Open Button
24. Intelligent Battery
25. Battery Eject Button

Using RoboMaster S1

1. Downloading the RoboMaster App

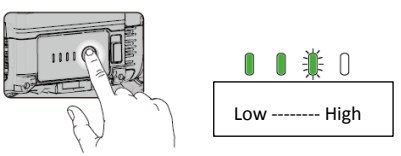
Search for RoboMaster in App Store or Google Play to download the app onto your control device.

⚠	RoboMaster App supports iOS 10.2.2 or later or Android 5.0 or later. Users can also download the DJI RoboMaster software from the official DJI website using a computer to control the robot with a keyboard and mouse.

2. Watching Video Tutorials

Watch video tutorials on the official DJI website to learn how to assemble and use the robot.

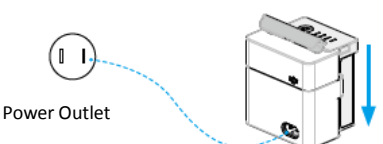
3. Checking the Battery Level



Press once to check the battery level.

Press and hold for 1 second to power it on. Press and hold for 2 seconds to power it off.

4. Charging the Battery



Power Outlet

100~240 V

(50Hz/60Hz)

Charging Time:

1 hour and 20 min

⚠	It is required to charge the battery to bring it out of hibernation for the first use. Make sure the battery is fully charged before using.

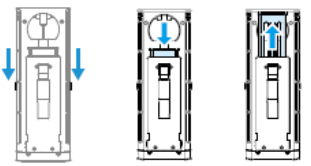
5. Preparing the Gel Beads

Soak the gel beads to the size with a diameter of 5.9 - 6.8 mm. It is recommended to use pure water, and it will take around 4 hours to finish soaking.

The average load of the gel bead container is around 430 beads. Soak the appropriate number of gel beads according to actual usage.

A. Fill the gel bead container with the soaked gel beads.

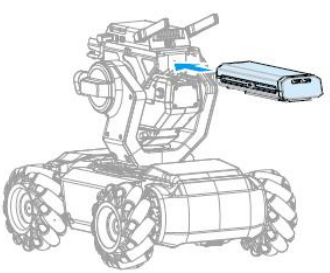
B. Make sure to clean the remaining water in the container.



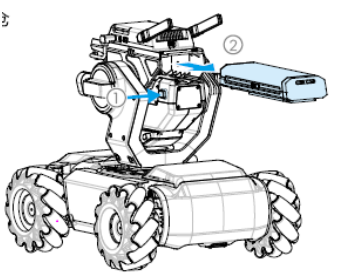
⚠	The size of the soaked gel beads may vary when using different types of water. Make sure to soak the gel beads to the specific size to avoid block the launcher.

6. Preparing the Robot

Installing the Gel Bead Container

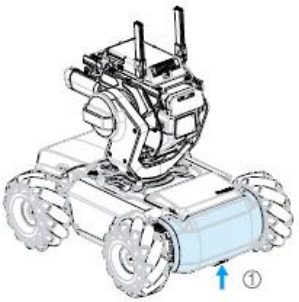


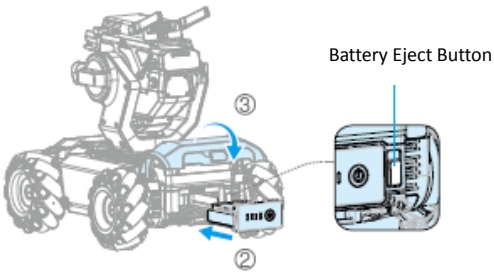
Removing the Gel Bead Container



Installing and Powering On the Intelligent Battery

Insert the Intelligent Battery, and then press and hold the power button to power it on.





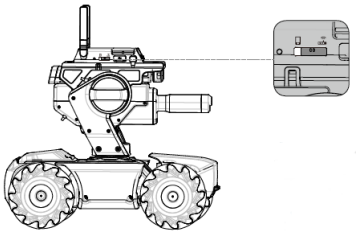
Checklist

Before each use, check the robot and make sure that:

- All the cables are securely and firmly connected to the motion controller, and the chassis rear cover is securely mounted.
- Cables of the intelligent controller, launcher, camera and speaker are securely and firmly connected.
- The microSD card is inserted into the intelligent controller.
- The intelligent controller antennas are adjusted to the vertical angle or oriented to the signal source.
- The Intelligent Battery is fully changed and mounted in position.

7. Connecting the App

The robot can connect the app via Wi-Fi or router to enter Single Drive or Multi-player Battle mode. The available modes vary depending on the connection method.



Connection via Wi-Fi

Single Drive is available using this connection method.

A. Toggle the mode switch on the intelligent controller to the position .

B. Tap Connection on the upper right corner in the app, and then tap Connection via Wi-Fi. Select the corresponding Wi-Fi and input the password (check on the robot body).

C. Go back to the app and wait for connection completion.

Connection via Router

Single Drive and Multi-player Battle are available using this connection method.

A. Toggle the mode switch on the intelligent controller to the position .

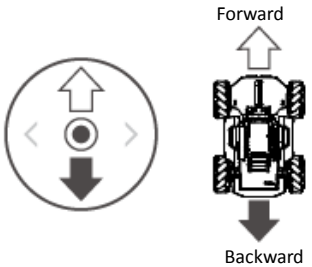
B. Tap Connection on the upper right corner in the app, and then tap Connection via Router. Access to the corresponding local area network and input the password in the app to generate a QR code.

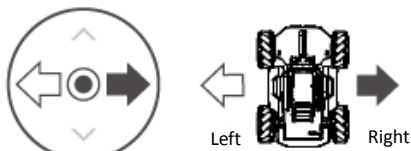
C. Scan the QR code using the camera on the robot and wait for connection completion.

Internet	First-time activation requires your DJI account and an internet connection.

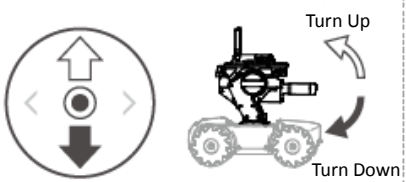
8. Controlling the Robot

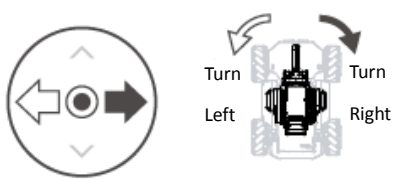
The button on the left of the screen controls the robot's forward, backward, and lateral movements.





Tap and hold the blank area on the right part of the screen and move up, down, left and right to control the gimbal pitch and yaw.





Control the robot position and gimbal angle to target the objective. Then tap the Launch button in the app to launch gel beads.

⚠	DO NOT launch to people, animals or other property.

Specifications

Structure	
Dimensions (L×W×H)	320×240×270 mm
Weight	2.8 kg
Performance	
Max Chassis Movement Speed	3.5 m/s (Forward); 2.5 m/s (Backward)
Max Chassis Rotating Speed	600°/s
Max Motor Rotating Speed	1000 rpm
Operating Temperature	14° to 104° F (-10° to 40° C)
Gimbal	
Controllable Range	-20° to +35° (Pitch); ±250° (Yaw)
Mechanical Range	-24° to +41° (Pitch); ±270° (Yaw)
Max Rotating Speed	540°/s
Operating Temperature	14° to 104° F (-10° to 40° C)
Gel Bead Launcher	
Controllable Launching Frequency	1-8 beads/s
Max Launching Frequency	11 beads/s
Launching Initial Velocity of Gel Beads	Approx. 26 m/s
Average Bead Load	Approx. 430 beads
Intelligent Controller	
Image Transmission Resolution	720p 30fps
Transmission Standard	IEEE802.11a/b/g/n
Operating Frequency	2.4 GHz, 5.2 GHz (limited to indoor use), 5.8 GHz
Camera	

Sensor	1/4” CMOS; Effective Pixels: 5 million
FOV	120°
Operating Temperature	-4° to 140° F (-20° to 60° C)
Intelligent Battery	
Capacity	2400 mAh
Charging Voltage	12.6 V
Battery Type	LiPo 3S
Energy	25.92Wh
Net Weight	Approx. 169 g
Operating Temperature	-4° to 140° F (-20° to 60° C)
Charging Temperature	32° to 104° F (0° to 40° C)
Max Charging Power	29 W
Charger	
Voltage	12.6 V
Rated Power	28 W

Compliance Information

FCC Compliance Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

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.

RF Exposure Information

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm during normal operation.