



# dji ROBOMASTER EP Core User Guide

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## ROBOMASTER EP Core User Guide DISCLAIMER AND SAFETY GUIDELINES



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## Glossary

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product.

**NOTICE** Procedures, which if not properly followed, create a possibility of physical property damage AND the possibility of injury.

**WARNING** Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of serious injury.



The DJI™ ROBOMASTER™ EP Core robot is a sophisticated product. It must be operated with caution and common sense and requires some basic mechanical knowledge. Read the entire user manual to become familiar with the features of this product before operating. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children under the age of 14 without direct adult supervision.

**DO NOT** use incompatible components or alter this product in any way outside of the documents provided by SZ DJI TECHNOLOGY CO., LTD. (abbreviated as DJI). It is essential to read and follow all of the instructions and warnings in the user manual, prior to assembly, setup or use, in order to operate the product correctly and avoid damage or serious injury.

## Disclaimer and Warning

Congratulations on purchasing your new DJI product. The information in this document affects your safety and your legal rights and responsibilities. This document and all other collateral documents are subject to change at the sole discretion of DJI. For the latest product information, please go to <http://www.dji.com> and visit the official page for this product.

By using this product, you hereby signify that you have read this disclaimer and warning carefully and that you understand and agree to abide by all terms and conditions of this document and all relevant documents of this product. You agree to use this product only for purposes that are proper. You agree that you are solely responsible for your own conduct while using this product, and for any consequences thereof. You agree to use this product only for purposes that are proper and in accordance with all applicable laws, rules, and regulations, and all terms, precautions, practices, policies, and guidelines DJI has made and may make available.

EXCEPT AS EXPRESSLY PROVIDED IN DJI LIMITED WARRANTY (POLICY AVAILABLE AT [HTTP://WWW.DJI.COM/SERVICE/POLICY](http://www.dji.com/service/policy)), THE PRODUCT AND ALL MATERIALS, AND CONTENT AVAILABLE THROUGH THE PRODUCT ARE PROVIDED “AS IS” AND ON AN “AS AVAILABLE” BASIS, WITHOUT WARRANTY OR CONDITION OF ANY KIND, EITHER EXPRESS OR IMPLIED.

## Before Use

The following documents have been produced to help you safely operate and make full use of your robot:

Disclaimer and Safety Guidelines

Quick Start Guide

## User Manual

Check all of the included parts listed in the In the Box section in the quick start guide, and read the disclaimer and safety guidelines. Complete the assembly with the help of the quick start guide and the video tutorial on DJI's official website (<http://www.dji.com>). Refer to the user manual on DJI's official website for more comprehensive information. Make sure you fully understand all safety guidelines, government regulations, and the functionality of each individual part. If you have any questions or problems during the assembly, maintenance, or use of the product, contact DJI or a DJI authorized dealer.

## Individual Parts

### Regarding Genuine and Functional Parts



#### WARNING

To avoid component malfunction, serious injury, and property damage, observe the following rules:

1. Use only genuine DJI parts or parts certified by DJI. Unauthorized parts or parts from non-DJI certified manufacturers may cause system malfunctions and compromise safety.
2. Make sure there are no foreign objects inside of the product or its components, such as oil, sand, or water.
3. Make sure the robot and its components are all in good working order, damage-free, and functioning properly. Components include, but are not limited to, the intelligent controller, chassis, and Intelligent Battery.
4. DO NOT disassemble the parts that have been installed before delivery. Unauthorized disassembly may cause malfunctions and affect the functionality and safety of the product.
5. Follow the assembly instructions for cable connection and wiring to avoid cable damage.  
DO NOT forcibly pull the cables when plugging and unplugging them. Otherwise, the cable connectors may be damaged.

### Chassis and Mecanum Wheels



#### WARNING

To avoid component malfunction, serious injury, and property damage, observe the following rules:

1. If the Mecanum wheels or chassis are moving at a high speed, they could potentially cause injury or property damage. Make sure to pay attention when the robot is moving at a high speed.
2. Select a wide space when controlling the robot to move at a high speed. Avoid crashing into any hard objects or walls at a high speed.
3. DO NOT use excessive force when tightening the screws during assembly and disassembly.  
The thread-locking fluid on the screws is intended for one-time use. For repeated assembly and disassembly, thread-locking fluid is required.
4. It is recommended to use the robot on flat surfaces such as wooden floors, cement, or carpets.  
Uneven surfaces such as sand may damage the Mecanum wheels or motors. DO NOT use the robot on wet ground or outdoors in rainy or snowy environments.

**NOTICE**

1. Make sure the motion controller is properly installed before use and the screws on the chassis rear cover are tightened. Otherwise, the motion controller may become loose, which may affect the movement of the robot.

## Servo

**NOTICE**

1. When in use, DO NOT touch the servo to avoid injury.
2. DO NOT hit the servo or the connected parts. Otherwise, it may reduce the service life of the servo or even lead to permanent damage.
3. When the servo overload warning prompts appear in the app multiple times, stop the operation immediately and check the operation and the structure of the robotic arm or servo.

## Robotic Arm

**⚠ WARNING**

1. DO NOT touch the Robotic Arm while it is in use. Otherwise, users may injure their fingers. DO NOT use the Robotic Arm to lift or move the robot.
2. DO NOT hit or suddenly pull the Robotic Arm. Otherwise, the Robotic Arm will impact and damage the servo.
3. Clean foreign objects like droplets in a timely manner. Otherwise, the surface of the structure may corrode.

## Intelligent Battery

**⚠ WARNING**

To avoid fire, serious injury, and property damage, observe the following safety guidelines when using, charging, or disposing of a battery.

### Battery Use

1. DO NOT allow the batteries to come into contact with any kind of liquid. DO NOT leave the batteries out in the rain or near a source of moisture. DO NOT drop the battery into the water. If the inside of the battery comes into contact with water, chemical decomposition may occur, potentially resulting in the battery catching on fire, and may even lead to an explosion.
2. If the battery falls into water, put it in a safe and open area or explosion-proof container immediately. Make sure to keep it away from flammable materials. Maintain a safe distance from the battery until it is completely dry. DO NOT use the battery again, and dispose of the battery properly as described in the related section below.
3. Put out battery fires using water, sand, fire blankets, or dry powder fire extinguishers.
4. DO NOT use non-DJI batteries. Go to [www.dji.com](http://www.dji.com) to purchase new batteries. DJI takes no responsibility for any damage caused by non-DJI batteries.
5. DO NOT use or charge, leaky, or damaged batteries. If your batteries are abnormal, for example by emitting an odor, having a temperature exceeding 75° C (167° F), or appearing misshapen or discolored, contact DJI or a DJI authorized dealer for further assistance.
6. The battery should be used in temperatures from -10° to 40° C (14° to 104° F). The use of the battery in environments above 50° C (122° F) can lead to a fire or explosion. The use of the battery below -10° C (14° F) can lead to permanent damage.
7. DO NOT use the battery in strong electrostatic or electromagnetic environments. Otherwise, the battery's protective board will malfunction.
8. DO NOT disassemble or pierce the battery in any way. Otherwise, electrolyte leakage can lead to a fire or

explosion.

9. DO NOT drop or strike the batteries. DO NOT place heavy objects on the batteries or charger. DO NOT use the battery if it is dropped or receives a heavy impact.
10. Electrolytes in the battery are highly corrosive. If any electrolytes make contact with your skin or eyes, immediately wash the affected area with fresh running water for at least 15 minutes, and then see a doctor immediately.
11. DO NOT heat the battery.
12. DO NOT put the loose cells in a pocket, bag, or drawer where they may short-circuit against other items or where the battery terminals could be pressed against each other. DO NOT manually shortcircuit the battery.
13. Clean battery terminals with a clean, dry cloth. Dirty terminals may cause poor contact, leading to energy loss or charging failure.

## **Battery Charging**

1. Only use a DJI-approved charger. DJI takes no responsibility if the battery is charged using a non-DJI charger.
2. DO NOT leave the battery unattended during charging. DO NOT charge the battery near flammable materials or on flammable surfaces such as carpet or wood.
3. DO NOT charge the battery immediately after use. Wait until it cools down to near room temperature. Charging the battery outside of the temperature range of 5° to 40° C (41° to 104° F) may lead to leakage, overheating, or battery damage.
4. Disconnect the charger when not in use. Examine the charger regularly for damage to the cord, plug, enclosure, or other parts. DO NOT clean the charger with denatured alcohol or other flammable solvents. DO NOT use a damaged charger.

## **Battery Storage, Transportation, and Disposal**

1. Dispose of the battery in specific recycling boxes only after a complete discharge. DO NOT place the battery in regular trash containers. Strictly follow your local regulations regarding the disposal and recycling of batteries.

### **NOTICE**

#### **Use**

1. Charge the battery to bring it out of hibernation before using it for the first time.
2. Make sure the batteries are fully charged before using.

#### **Charging**

1. Make sure to turn off the battery before charging to avoid power port damage. Make sure the battery level is 95% or lower before charging. If the battery level is higher than 95%, discharge the battery until the battery level is 95% or lower. Otherwise, the battery will not charge.
2. The battery is designed to stop charging when it is fully charged. However, it is good practice to monitor the charging progress and disconnect the battery when fully charged.

#### **Disposal**

1. If the battery is disabled and the battery cannot be fully discharged, contact professional battery disposal or recycling agent for further assistance.
2. If the battery cannot be powered on after over-discharging, dispose of the battery.

## **Motors**

To avoid component malfunction, serious injury, and property damage, observe the following rules:

1. Make sure that the motors are securely mounted and rotating smoothly before powering on.
2. DO NOT attempt to modify the structure of the motors.
3. DO NOT touch or let your hands come into contact with the motors, motor mounting plates, or inside of the Mecanum wheel immediately after powering off the robot.

**NOTICE**

1. Make sure there are no foreign objects inside of the motors.
2. Make sure the connections between all the motors and the motion controller are stable.
3. If the motor cannot rotate freely, immediately power it off and check.

## **Armor**

**NOTICE**

1. Make sure that all the armor is securely mounted, all cables are firmly connected to the motion controller, and that they are functioning properly.

## **Camera**

**NOTICE**

1. DO NOT expose the camera to liquids or immerse in water.
2. DO NOT store the camera in a humid place.
3. DO NOT touch the lens.
4. Clean the lens regularly to avoid blurring or halos. Use a special lens cleaner to make sure that there is no foreign matter on the lens after cleaning and that it does not damage the lens.

## **Intelligent Controller**

**NOTICE**

1. Make sure that all the cables are connected and all connected parts work properly before use.
2. Make sure that the antennas on the intelligent controller are unfolded and adjusted to the proper position for optimal communication.
3. If the intelligent controller antenna is damaged, the performance of the robot will be affected. Contact DJI if the antenna is damaged.
4. DO NOT pull the antenna.

## **RoboMaster App**

**NOTICE**

1. It is recommended to use the latest version of the app.
2. Make sure that the device is fully charged before launching the app.
3. Before using the app with cellular mobile data, contact your mobile device data provider for the latest data information.
4. Read all safety tip prompts, warning messages, and disclaimers carefully. Familiarize yourself with the related regulations in your area. You are solely responsible for being aware of all relevant regulations and operating in a way that is compliant.
5. Your use of the app is subject to the RoboMaster app Terms of Use and DJI Privacy Policy. Read them carefully in the app.

## **Product Care**

**⚠ WARNING**

### **Storage and Transportation**

To avoid component malfunction, serious injury, and property damage, observe the following rules:

1. Keep batteries, cables, and small parts out of the reach of children and animals.
2. DO NOT leave the battery near heat sources such as a furnace or heater. DO NOT leave the batteries inside of a vehicle on hot days. Never store the battery in environments with a temperature higher than 60° C (140° F). The ideal storage temperature is 22° to 28° C (72° to 82° F).
3. Keep the battery dry.
4. Keep the battery away from objects with metal components such as glasses, watches, jewelry, and hairpins.
5. Never transport a damaged battery.

6. Before carrying the Intelligent Battery on an airplane, it must first be discharged until the battery level is lower than 30%. Only discharge the battery in a fireproof location. Store Intelligent Batteries in a ventilated location.

#### **NOTICE**

1. Secure the Mecanum wheels before transportation.
2. When stored for an extended period, make sure to attach the chassis rear cover firmly to prevent the ports on the motion controller from being exposed. Otherwise, it may become moist and corroded, which affects the service life.
3. Make sure to remove the battery from the robot and store it when the device is not in use for an extended period. Refer to the Intelligent Battery section for more information on how to store the battery.
4. Discharge the battery to 40-60% if it will not be used for 10 days or more. This can significantly extend the battery life. The battery automatically discharges to below 60% when it is idle for more than 10 days. It takes approximately one day to discharge the battery to 60%. It is normal to feel moderate heat emitting from the battery during the discharge process.
5. DO NOT store the battery for an extended period with its powerfully discharged. Otherwise, it may lead to irreversible damage.
6. The battery will enter hibernation mode if it is depleted and stored for an extended period. Recharge the battery to bring it out of hibernation. During hibernation, the battery cannot be turned on and the battery level cannot be checked.

### **Maintenance**

To avoid component malfunction, serious injury, and property damage,

#### **WARNING**

observe the following rule:

1. DO NOT use the battery when the temperature is too high or too low.

#### **NOTICE**

1. DO NOT over-charge or over-discharge, as this may lead to battery cell damage.
2. If the battery is not used for an extended period, the service life may be reduced.
3. Discharge and charge the battery completely once every three months to keep it in optimal condition.
4. After being used for an extended period, the grease between the Mecanum wheel rollers and the hubs will start to run out, which will lead to the wheels making a screeching sound during use. Regularly check if more grease is required. Otherwise, the wheels may be damaged.
5. After the robot has been stored for an extended period or the motion controller has been reinstalled, calibrate the robot in the RoboMaster app before use. Otherwise, the movement of the robot may be affected.
6. Check every part of the robot after any crash or impact. If you have any problems or questions, contact a DJI authorized dealer.

### **Compliance with Regulations & Operation Limits**

#### **WARNING**

1. Make sure you understand and comply with the local laws and regulations and, if required, have obtained corresponding approval and clearance from the related government agencies before use.
2. Respect the privacy of others when using the image capture, sound recording, and video recording functions. DO NOT conduct surveillance operations such as image capture, sound recording, or video recording on any person, entity, event, performance, exhibition, or property without authorization or where there is an expectation of privacy, even if the image or video captured or the sound recording was for personal use.

### **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**

The 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. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## **ISED Compliance Notice**

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.

## **EU Compliance Statement:**

SZ DJI TECHNOLOGY CO., LTD. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of the Directive 2014/53/EU. A copy of the EU Declaration of Conformity is available online at [www.dji.com/euro-compliance](http://www.dji.com/euro-compliance) EU contact address: DJI GmbH, Industriestrasse 12, 97618, Niederlauer, Germany.

### **Environmentally-friendly disposal**



Old electrical appliances must not be disposed of together with the residual waste, but have to be disposed of separately. The disposal at the communal collecting point via private persons is for free.

The owner of old appliances is responsible to bring the appliances to these collecting points or to similar collection points. With this little personal effort, you contribute to recycling valuable raw materials and the treatment of toxic substances.

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<https://www.dji.com/robomaster-ep-core/downloads>

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**Documents / Resources**

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