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› LewanSoul 4WD Mecanum Wheel Robot Car Chassis Kit (DPC-MB-JP) Instruction Manual

LewanSoul DPC-MB-JP

LewanSoul 4WD Mecanum Wheel Robot Car Chassis Kit

Model: DPC-MB-JP

Instruction Manual

1. INTRODUCTION

This manual provides detailed instructions for the assembly, operation, and maintenance of your LewanSoul 4WD Mecanum Wheel Robot Car Chassis Kit (Model: DPC-MB-JP). Designed for robotics enthusiasts and makers, this kit offers a versatile platform for various DIY projects, supporting expansion with electronic systems like Raspberry Pi and Arduino.

2. PRODUCT FEATURES

- **Omnidirectional Movement:** The 360° omnidirectional Mecanum wheel chassis car kit utilizes the latest Mecanum wheels for movement. The 4WD 360° omnidirectional wheel car chassis features universal wheels, allowing movement in any direction. It is effective even in confined spaces and rough terrain.
- **High-Performance Motors:** Equipped with four TT motors. The motors have a reduction ratio of 1:120, output voltage of 3-6V, and output 120-240 RPM. Compared to standard cars, it offers stronger torque and increased load capacity.
- **Durable Construction:** The Mecanum wheel chassis car includes an aluminum alloy bracket, with dimensions of 180 * 140 * 89MM, capable of carrying 1500g. The Mecanum wheels are made of high-hardness plastic, ensuring low noise, resistance to damage and deformation, and a long service life.
- **DIY Friendly:** This robot DIY kit is suitable for robotics enthusiasts and makers. Simultaneously, it allows for the expansion of electronic systems such as Raspberry Pi and Arduino to achieve greater creativity.
- **English Documentation:** All related course materials are provided in English.

3. PACKAGE CONTENTS

The kit includes all necessary components for assembly. Please verify all parts against the provided list before beginning assembly.

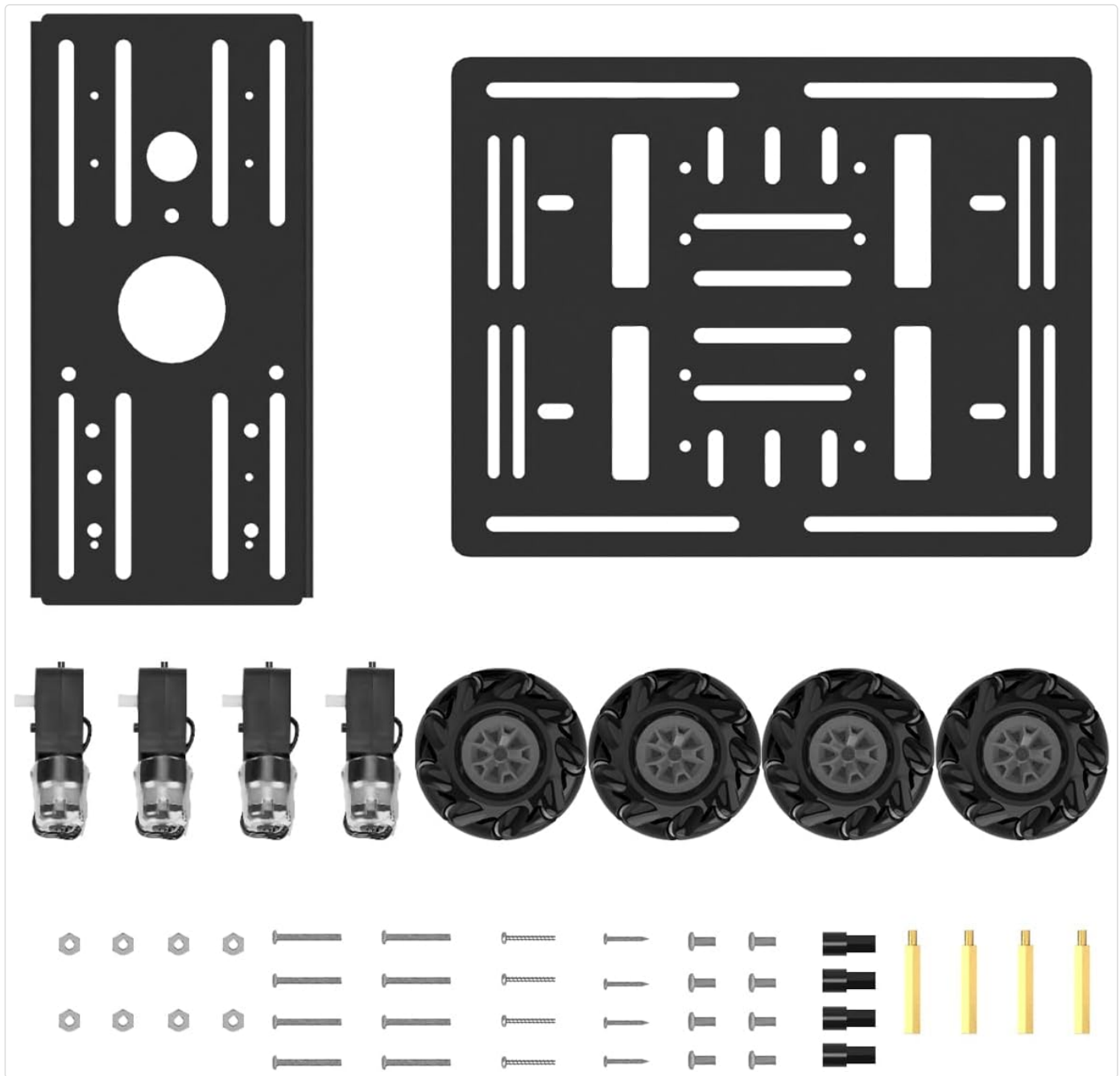


Figure 3.1: Overview of all components included in the kit.

4. ASSEMBLY INSTRUCTIONS

Follow these steps carefully to assemble your robot car chassis. Refer to the diagrams and video for visual guidance.

1. **Attach TT Motors:** Secure the TT motors to the chassis using the provided screws and nuts. Ensure they are firmly attached.

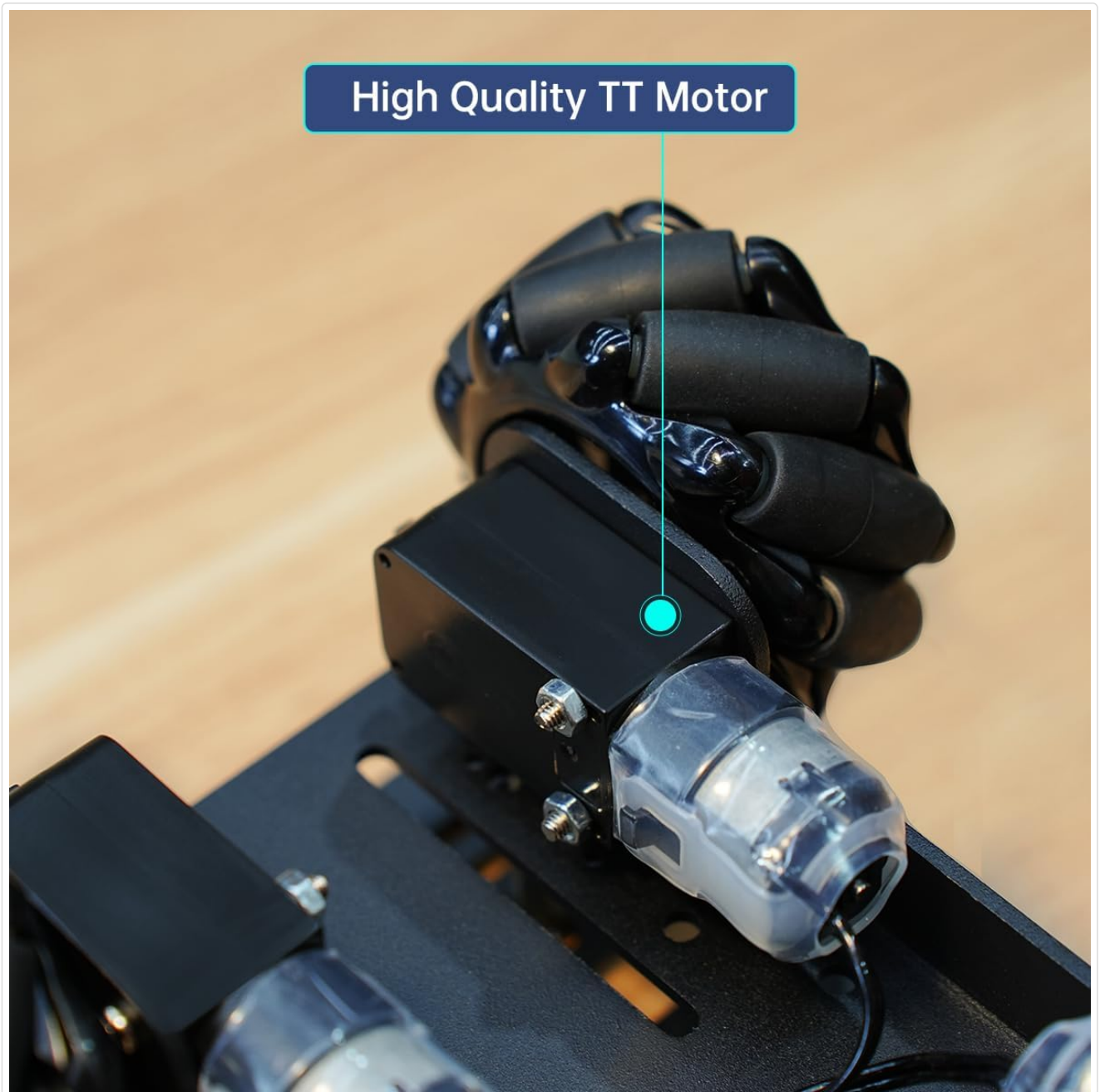


Figure 4.1: Installation of a TT motor onto the chassis.

2. **Mount Mecanum Wheels:** Attach the 66mm Mecanum wheels to the TT motors. Pay attention to the installation direction of each wheel for proper omnidirectional movement.

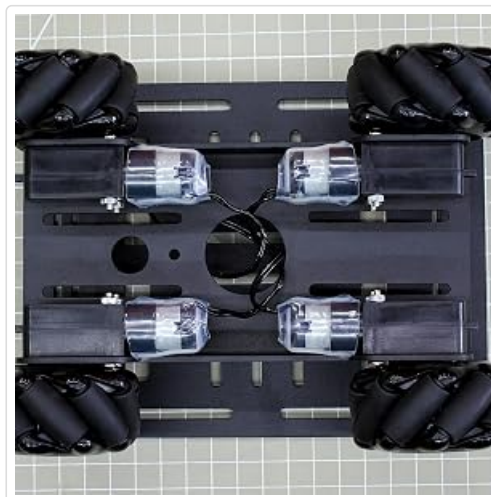


Figure 4.2: Detailed view of a Mecanum wheel.

3. **Assemble Chassis Layers:** Connect the upper and lower chassis plates using the provided standoffs and screws.



Figure 4.3: Fully assembled chassis with wheels.

4. **Wiring:** Connect the motor wires to your control board (e.g., Raspberry Pi or Arduino, not included) according to the wiring diagram in the detailed course materials.
5. **Final Check:** Ensure all connections are secure and all screws are tightened.

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Video 4.1: An animated guide demonstrating the assembly process of the robot car chassis, including motor and wheel attachment.

5. OPERATING INSTRUCTIONS

The LewanSoul Mecanum Wheel Robot Car Chassis is designed for versatile movement. Once assembled and connected to your chosen control system (e.g., Raspberry Pi, Arduino), you can program it to perform various maneuvers.

- **Omnidirectional Movement:** The Mecanum wheels allow the robot to move forward, backward, sideways (strafe), and diagonally, as well as rotate in place. This provides exceptional maneuverability in tight spaces.

- **Programming:** Refer to the provided course materials for programming examples and libraries compatible with Raspberry Pi and Arduino. These materials will guide you through writing code for basic movements and advanced functions.
- **Control:** Depending on your setup, the robot can be controlled via a mobile application, a PC client, or an infrared remote control. Ensure your control system is properly paired and configured.

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Video 5.1: Demonstration of the robot car chassis performing various omnidirectional movements, including forward, backward, sideways, and diagonal maneuvers.

6. MAINTENANCE

To ensure the longevity and optimal performance of your LewanSoul Robot Car Chassis, follow these maintenance guidelines:

- **Regular Cleaning:** Keep the chassis and wheels free from dust, dirt, and debris. Use a soft, dry cloth for cleaning. For stubborn dirt, a slightly damp cloth can be used, ensuring no moisture enters electronic components.
- **Check Connections:** Periodically inspect all screw connections and wiring to ensure they are secure. Loose connections can lead to erratic behavior or component damage.
- **Motor Inspection:** Check the TT motors for any signs of wear or unusual noise. Ensure they rotate freely.
- **Wheel Condition:** Inspect the Mecanum wheels for any damage to the rollers or the wheel structure. Replace damaged wheels if necessary.
- **Storage:** When not in use, store the robot in a dry, cool place away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

If you encounter any issues with your robot car chassis, refer to the following common troubleshooting tips:

- **Robot Not Moving:**
 - Check battery level and ensure it is fully charged.
 - Verify all motor connections to the control board.
 - Ensure the control program is correctly uploaded and running.
 - Check for any physical obstructions preventing wheel movement.
- **Erratic Movement:**
 - Confirm correct wiring of all motors and sensors.
 - Review your code for any logical errors in movement commands.
 - Ensure the Mecanum wheels are installed in the correct orientation.
- **Control Issues:**
 - For wireless control (Bluetooth/Wi-Fi), ensure proper pairing and connection.
 - Check the range of your remote control or wireless connection.
 - Verify that the control application/software is up-to-date.

For more detailed troubleshooting or specific error codes, consult the comprehensive course materials provided with your kit or visit the LewanSoul support website.

8. SPECIFICATIONS

Attribute	Value
Brand	LewanSoul
Model Number	DPC-MB-JP
Material Type	Aluminum
Target Age	Children
Educational Objective	Creative Skills
Assembly Required	Yes
Motor Type	TT Motor (4 included)
Wheel Type	66mm Omnidirectional Mecanum Wheels
Load Capacity	Up to 1500g
Chassis Dimensions	180 x 140 x 89 mm (approx.)

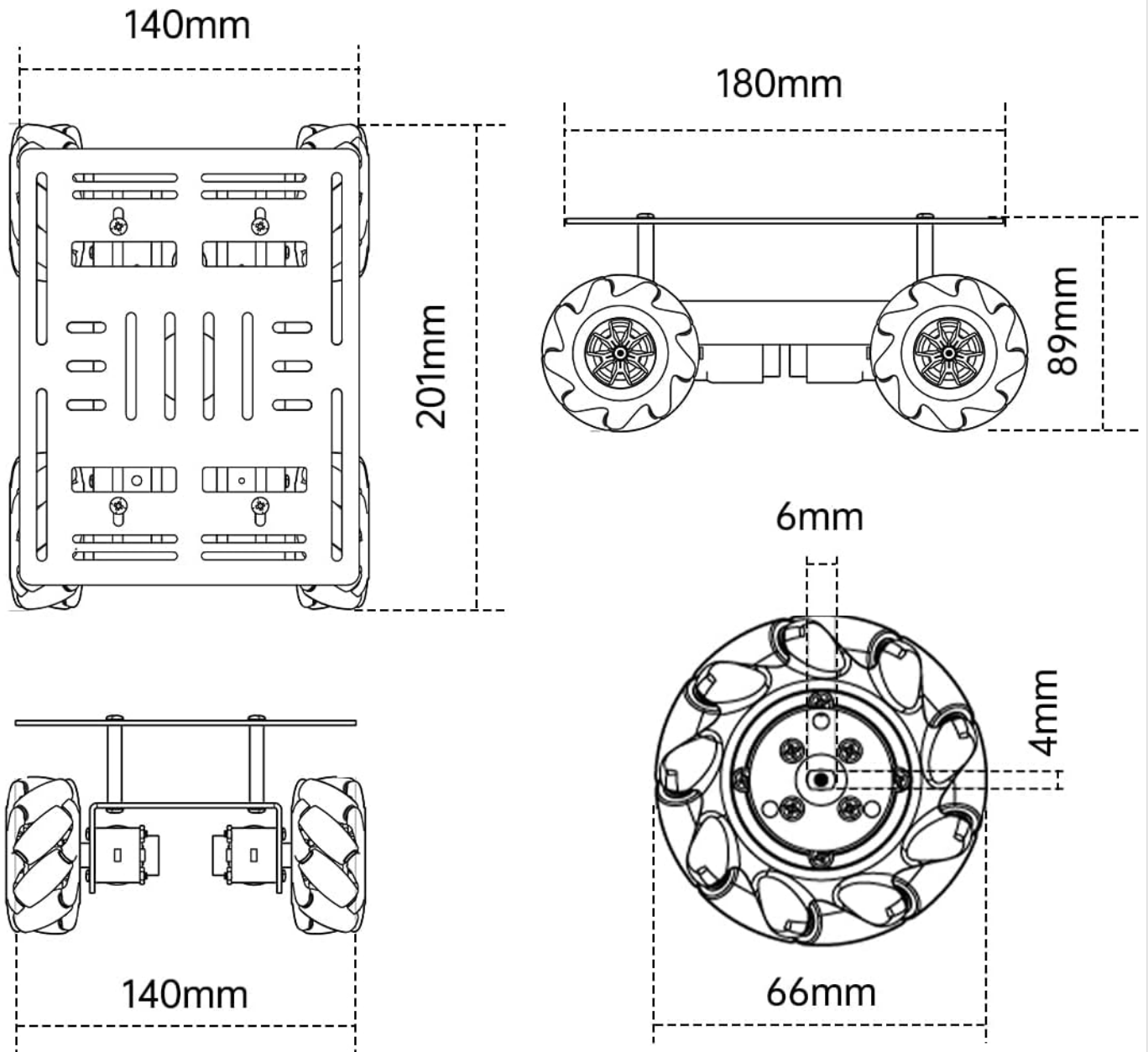


Figure 8.1: Dimensional drawing of the robot chassis and Mecanum wheel.

9. WARRANTY AND SUPPORT

LewanSoul products are designed for quality and performance. For warranty information, please refer to the documentation included with your purchase or visit the official LewanSoul website.

For technical support, additional resources, or inquiries, please contact LewanSoul customer service. Our team is dedicated to providing assistance and ensuring your satisfaction with our products.

- **Online Resources:** Access detailed tutorials, code examples, and community forums through the official LewanSoul website.
- **Contact Support:** For direct assistance, please refer to the contact information provided in your product packaging or on the LewanSoul website.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question