**Ebotics BXMPJ03**

# Ebotics BXMPJ03 Robotics and Programming Kit User Manual

Brand: Ebotics | Model: BXMPJ03

## 1. Introduction

This manual provides comprehensive instructions for the Ebotics BXMPJ03 Robotics and Programming Kit. This kit is designed to introduce users to the fundamentals of robotics and programming through hands-on construction and creative projects. It focuses on the Maker Kit 2, which integrates with the Maker Control Kit, featuring a 4-in-1 Build and Code circuit.

## 2. Kit Components

### Included Components

The Ebotics BXMPJ03 kit includes various electronic modules and connectors necessary for building interactive robotic projects. The core components allow for the creation of a friendly lion robot with temperature-controlled fan functionality.

- DC Motor with Propeller
- Temperature Sensor Module
- Potentiometer Module
- Various connection cables
- Maker Kit 2 components (for structural assembly)
- Maker Control Kit (includes 4-in-1 Build and Code circuit, the brain of the projects)


*Image Description: This image displays the contents of the Ebotics BXMPJ03 kit. Visible components include a DC motor, a temperature sensor module, a potentiometer module, several small circuit boards, and various multi-colored connection cables. The kit's packaging, featuring a cartoon lion design, is visible in the background. These components are used to assemble and program robotic projects.*

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## 3. Setup and Assembly

### Building Your First Project: The Friendly Lion

The Ebotics BXMPJ03 kit guides you through building a friendly lion robot. This project demonstrates how to integrate sensors and actuators to create an automated system that responds to its environment.

1. **Assemble the Lion Structure:** Follow the instructions provided with the Maker Kit 2 to construct the physical structure of the lion.
2. **Connect the Temperature Sensor:** Locate the temperature sensor module. This sensor is designed to be

placed on the lion's back. Connect it to the Maker Control Kit using the provided cables.

3. **Integrate the DC Motor and Propeller:** Attach the DC motor with its propeller, which functions as the lion's nose. Connect the motor to the Maker Control Kit.
4. **Install the Potentiometer:** Position the potentiometer module, which controls the motor speed, on the lion's tail. Connect it to the Maker Control Kit.
5. **Connect the Maker Control Kit:** Ensure all modules are securely connected to the 4-in-1 Build and Code circuit within the Maker Control Kit.

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## 4. Operating Instructions

### Programming the Robot

The Ebotics BXMPJ03 kit utilizes the Maker Control Kit's 4-in-1 Build and Code circuit for programming. Refer to the specific programming environment and language documentation provided with the Maker Control Kit for detailed instructions on writing and uploading code to control your projects.

### Functionality of the Friendly Lion

- **Temperature-Controlled Fan:** The temperature sensor on the lion's back continuously monitors the ambient temperature. Based on the program you create, the DC motor with the propeller (the lion's nose) will automatically turn on or off. For example, you can program it to activate when the temperature exceeds a certain threshold and deactivate when it falls below it.
- **Motor Speed Control:** The potentiometer located on the lion's tail allows for manual adjustment of the DC motor's speed. Rotate the potentiometer to increase or decrease the fan's rotation speed, as defined by your program.

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## 5. Maintenance

### General Care

To ensure the longevity and proper functioning of your Ebotics BXMPJ03 kit, observe the following maintenance guidelines:

- Keep all electronic components clean and dry. Avoid exposure to liquids or excessive dust.
- Store the kit in a cool, dry place when not in use.
- Handle components with care to prevent damage to circuit boards or connectors.
- Ensure all connections are secure before powering on the device.

### Battery Information

The kit requires 1 Lithium-ion battery for operation. Ensure the battery is correctly installed according to the polarity markings. This kit is not designed for rechargeable batteries, so replace the battery when depleted.

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# 6. Troubleshooting

## Common Issues and Solutions

**Issue: The DC motor (fan) does not turn on.**

**Solution:**

- Verify that the motor is correctly connected to the Maker Control Kit.
- Check your programming code to ensure the motor activation logic is correct and the temperature threshold is met.
- Ensure the battery has sufficient charge and is properly installed.
- Test the potentiometer's position; it might be set to minimum speed.

**Issue: The temperature sensor does not seem to be working.**

**Solution:**

- Confirm the temperature sensor module is securely connected to the Maker Control Kit.
- Review your code to ensure the sensor input is being read and processed correctly.
- Ensure the sensor is not obstructed or covered, which could affect its readings.

**Issue: Components are not recognized by the programming environment.**

**Solution:**

- Ensure all modules are firmly connected to the Maker Control Kit.
- Verify that the Maker Control Kit is properly connected to your computer.
- Check for necessary driver installations or software updates for the programming environment.

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# 7. Specifications

## Technical Specifications

| Feature | Detail |
| --- | --- |
| Brand | Ebotics |
| Model Number | BXMPJ03 |
| Batteries Required | Yes |
| Battery Type | 1 Lithium-ion |
| Rechargeable Battery | No |
| Assembly Required | No (for the kit itself, project assembly is required) |
| Language | English |

## 8. Warranty and Support

### Product Support

Information regarding spare parts availability and software update guarantees for the Ebotics BXMPJ03 kit is not available at this time. For further assistance, specific inquiries, or to access additional resources, please refer to the official Ebotics website or contact their customer support channels directly.