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## BOJACK Type 130 EK1450

# BOJACK Type 130 EK1450 Miniature DC Motor Instruction Manual

Model: Type 130 EK1450

## 1. INTRODUCTION

This manual provides instructions for the BOJACK Type 130 EK1450 Miniature DC Motors. These motors are designed for various hobby and DIY projects, offering stable operation and high torque within a compact size. Please read this manual thoroughly before use to ensure proper application and longevity of the product.

## 2. PRODUCT OVERVIEW

The BOJACK Type 130 EK1450 miniature DC motors are compact, high-performance units suitable for a range of small-scale applications. Each motor comes pre-equipped with two 15 cm (6 inch) male Dupont jumper wires for convenient connection. The motors are characterized by low noise, stable operation, and strong power output.



Figure 1: Four BOJACK Type 130 EK1450 miniature DC motors with pre-attached jumper wires.

### 3. SPECIFICATIONS

Parameter	Value
Reference Voltage	1V - 6V DC
Reference Current	0.35A - 0.4A
Speed	16000 RPM (at 3V)
Motor Dimensions	15 mm x 20 mm (0.59 inch x 0.79 inch)
Shaft Diameter	2.0 mm (0.079 inch)
Shaft Length	9 mm (0.35 inch)
Material	Metal
Included Components	Miniature DC Motors with 15 cm (6 inch) male Dupont jumper wires

### 4. SETUP

The BOJACK Type 130 EK1450 motors are designed for ease of use with pre-attached jumper wires. Follow these steps for proper connection:

- 1. Identify Connections:** Each motor has two wires: one red (positive) and one black (negative). These wires terminate in male Dupont connectors.
- 2. Connect to Power Source:** Connect the red wire to the positive terminal of your DC power supply (e.g., battery pack, Arduino output) and the black wire to the negative terminal. Ensure the voltage supplied is within the specified range of 1V to 6V DC.
- 3. Integration:** The Dupont connectors allow direct connection to breadboards, microcontrollers (like Arduino), or other compatible female headers.

**Caution:** Applying voltage outside the specified range (1V-6V) may damage the motor or reduce its lifespan.

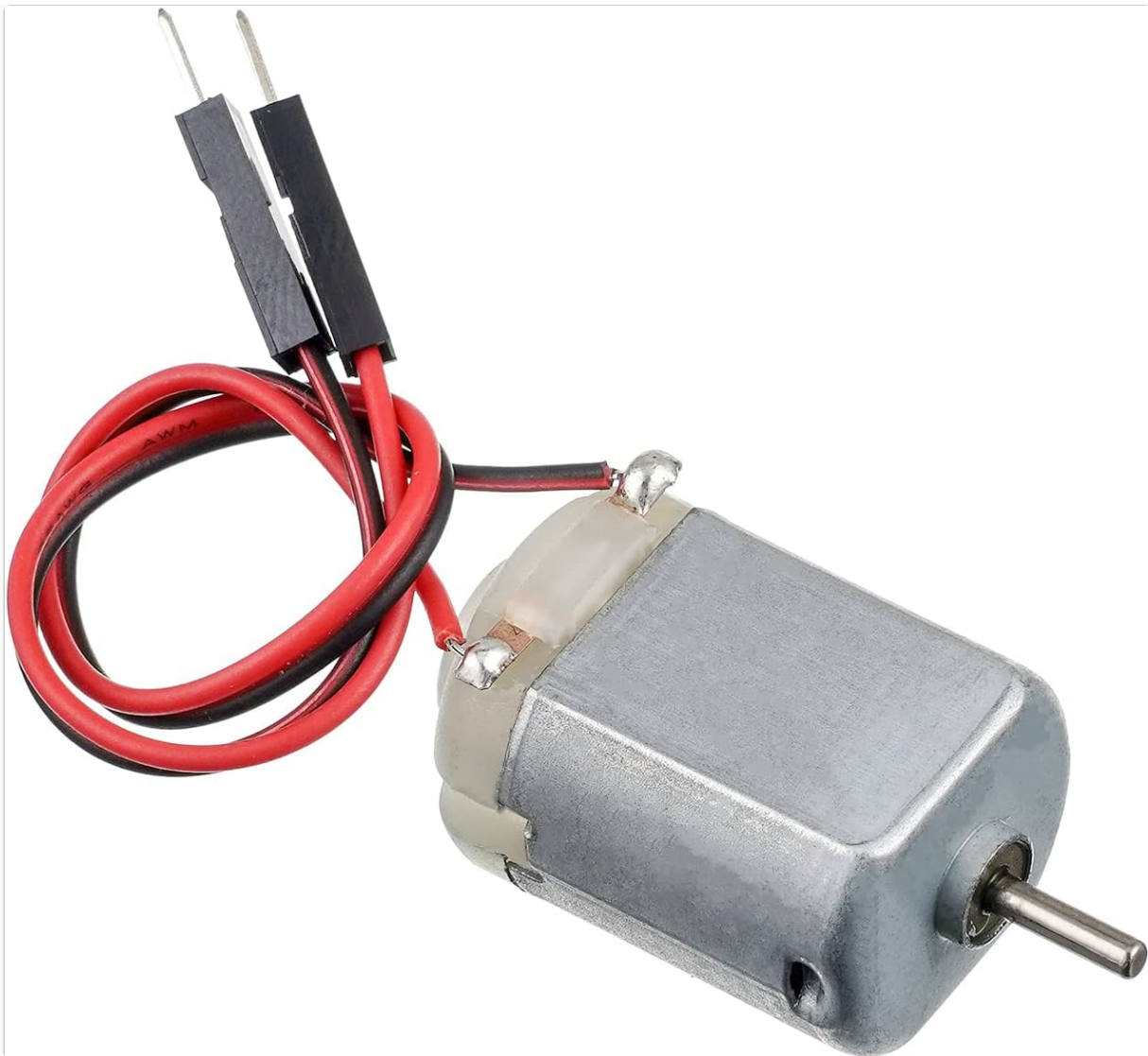


Figure 2: Single BOJACK Type 130 EK1450 motor with pre-attached jumper wires.

## 5. OPERATING INSTRUCTIONS

Once properly connected to a power source within the 1V-6V DC range, the motor will begin to rotate.

- **Direction of Rotation:** The direction of rotation depends on the polarity of the applied voltage. Reversing the positive and negative connections will reverse the motor's direction.
- **Speed Control:** The motor's speed is directly proportional to the applied voltage. A higher voltage (within the 1V-6V range) will result in higher RPM, and a lower voltage will result in lower RPM.
- **Load:** Avoid applying excessive mechanical load to the motor shaft, as this can lead to reduced speed, increased current draw, and potential overheating or damage.

## 6. APPLICATIONS

These versatile miniature DC motors are suitable for a wide array of educational, hobby, and DIY projects, including but not limited to:

- Small fans
- Solar-powered or battery-driven toy cars
- Miniature hair dryers
- Robot projects
- Scientific experiments and demonstrations

- Other small-scale mechanical or electronic prototypes

## 7. MAINTENANCE

The BOJACK Type 130 EK1450 motors are generally low-maintenance. Adhering to these guidelines will help ensure their longevity:

- **Cleaning:** Keep the motor free from dust, dirt, and debris, especially around the shaft and ventilation openings, to ensure optimal performance and prevent overheating. Use a soft, dry cloth or a small brush for cleaning.
- **Storage:** Store motors in a dry environment, away from extreme temperatures and corrosive substances.
- **Avoid Overload:** Do not continuously operate the motor under heavy loads that cause significant speed reduction or excessive heat, as this can shorten its lifespan.

## 8. TROUBLESHOOTING

If you encounter issues with your BOJACK Type 130 EK1450 motors, refer to the following troubleshooting guide:

### Motor Not Spinning:

- **Check power connections:** Ensure red wire is connected to positive, black to negative.
- **Verify power supply:** Confirm the power source is providing voltage within the 1V-6V range.
- **Inspect wires:** Check for any broken or loose connections in the jumper wires.
- **Check for obstructions:** Ensure the motor shaft is not mechanically blocked.

### Motor Runs Slowly or Weakly:

- **Increase voltage:** If operating at the lower end of the voltage range, try increasing the voltage (up to 6V).
- **Reduce load:** Ensure the motor is not under excessive mechanical load.
- **Check power supply capacity:** Confirm the power supply can deliver sufficient current (0.35A-0.4A per motor).

### Motor Overheats:

- **Reduce voltage or load:** Operating at maximum voltage or under heavy load for extended periods can cause overheating.
- **Ensure ventilation:** Do not enclose the motor in a way that restricts airflow.

## 9. WARRANTY AND SUPPORT

For product support or inquiries, please contact your retailer or the manufacturer directly. While specific warranty details are not provided in this manual, it is recommended to retain your proof of purchase for any potential claims.