EUDAX B07XWQ35MS

EUDAX STEM DIY Simple Electric Motor Model Assembly Kit User Manual

Model: B07XWQ35MS | Brand: EUDAX

Introduction

This manual provides detailed instructions for assembling, operating, and maintaining your EUDAX STEM DIY Simple Electric Motor Model Assembly Kit. This kit is designed to demonstrate the fundamental principles of how an electric motor works, making it an ideal educational tool for science projects and teaching.

Important Safety Information

- **Working Voltage:** The motor model operates safely within a DC 1.5V-6.0V range. Do not use 12V voltage for testing, as this can damage the motor and pose a safety risk.
- **Battery Usage:** This kit does not include batteries. You will need to prepare 4 AA batteries for operation. Always remove batteries when the motor is not in use to prevent short circuits or potential fire hazards.
- **Small Parts:** This kit contains small parts which may pose a choking hazard. Not suitable for children under 3 years. Adult supervision is recommended during assembly and use, especially for younger users.
- **Assembly Precautions:** Ensure all connections are secure and correct before applying power. Incorrect wiring can lead to malfunction or damage.

Package Contents

Your EUDAX Electric Motor Model Assembly Kit includes the following components:

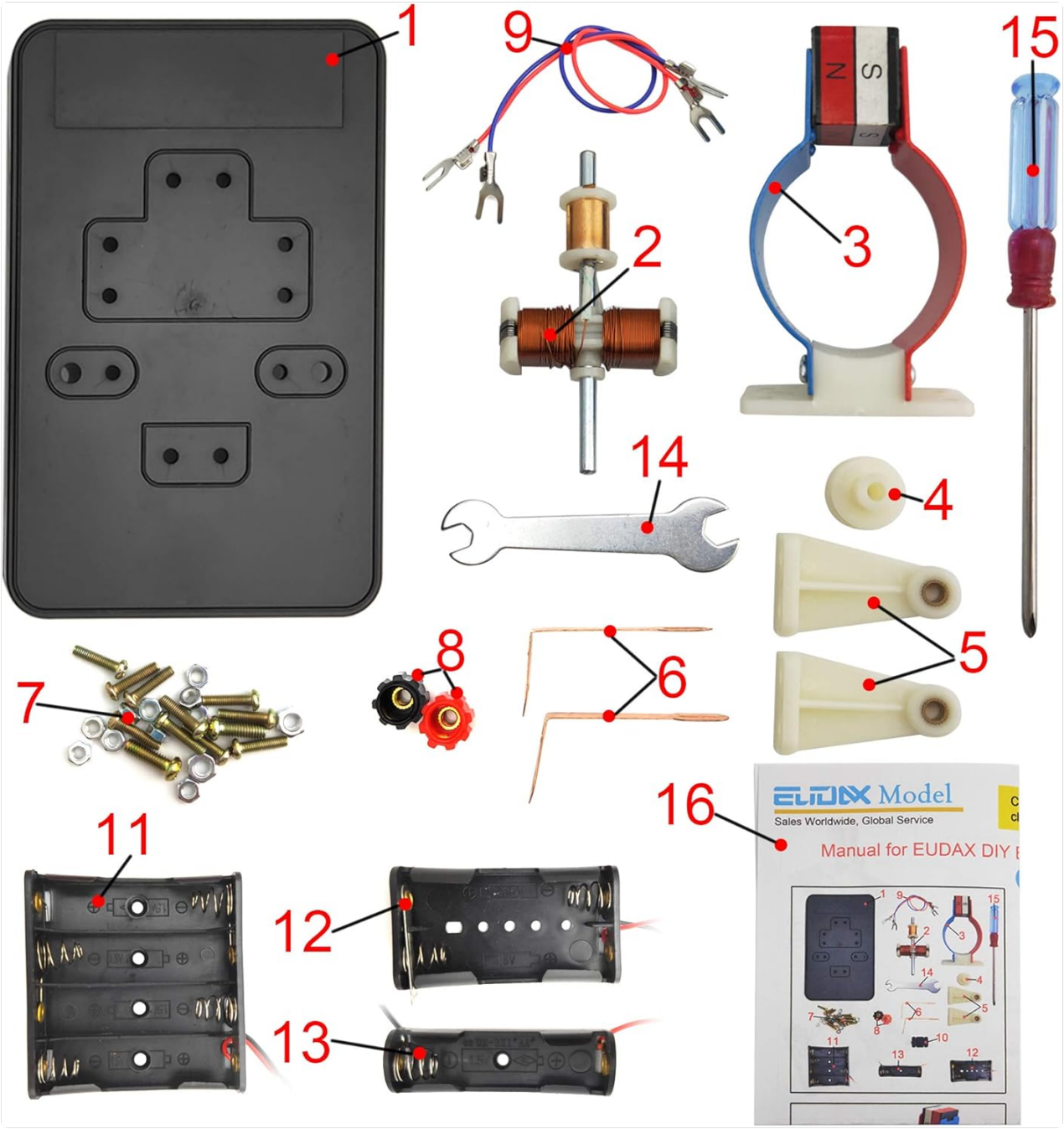

Image: All components of the EUDAX Electric Motor Model Assembly Kit laid out, including the base, magnets, coil, supports, wires, battery holders, and small tools.

- Base Plate
- U-shaped Magnet (Red and Blue)
- Coil/Armature
- Commutator and Brushes
- Support Stands
- Terminal Posts (Red and Black)
- Connecting Wires
- Fasteners (Screws, Nuts)
- Small Wrench/Tool
- Battery Holders (for AA batteries, batteries not included)
- Instruction Manual

Setup and Assembly

Follow these steps to assemble your electric motor model. Refer to the included English manual for detailed diagrams and specific part identification.

1. **Prepare the Base:** Secure the support stands onto the base plate using the provided screws and nuts. Ensure they are firmly attached.
2. **Install the Coil:** Carefully place the coil/armature onto the support stands, ensuring it can rotate freely. The commutator should align with the brush positions.
3. **Attach the Magnets:** Position the U-shaped magnet over the coil, ensuring the North (N) and South (S) poles are correctly oriented as indicated on the magnet and in the manual. Secure the magnet to the base.
4. **Connect the Brushes:** Ensure the copper brushes are in close contact with the commutator segments. This is crucial for proper electrical contact.
5. **Wire the Terminals:** Connect the wires from the brushes to the red and black terminal posts on the base.
6. **Connect Battery Holders:** Attach the battery holders to the terminal posts using the connecting wires. Ensure correct polarity (positive to red, negative to black).
7. **Insert Batteries:** Insert 4 AA batteries (not included) into the battery holders.

Image: Visual guide demonstrating the assembly process of the motor components onto the base.

Image: The completed electric motor model, ready for operation.

Assembly Video Guide

Your browser does not support the video tag.

Video: A demonstration of the assembly process for a similar EUDAX generator model, illustrating key steps for connecting components. While this video is for a hand-cranked generator, the assembly principles for the motor's core components are similar and can provide helpful visual guidance.

Operating Instructions

Once assembled, your EUDAX Electric Motor Model is ready for operation. Ensure all safety precautions are observed.

1. **Power On:** With 4 AA batteries correctly installed in the battery holders and connected to the terminal posts, the motor model is ready.
2. **Initiate Rotation:** Gently give the coil a slight push to initiate its rotation. The motor should begin to spin,

demonstrating the principles of electromagnetism.

3. **Observe Operation:** Watch how the interaction between the magnetic field of the U-shaped magnet and the current flowing through the coil causes continuous rotation.
4. **Power Off:** To stop the motor, disconnect the battery holders from the terminal posts or remove the batteries. Always remove batteries when not in use.

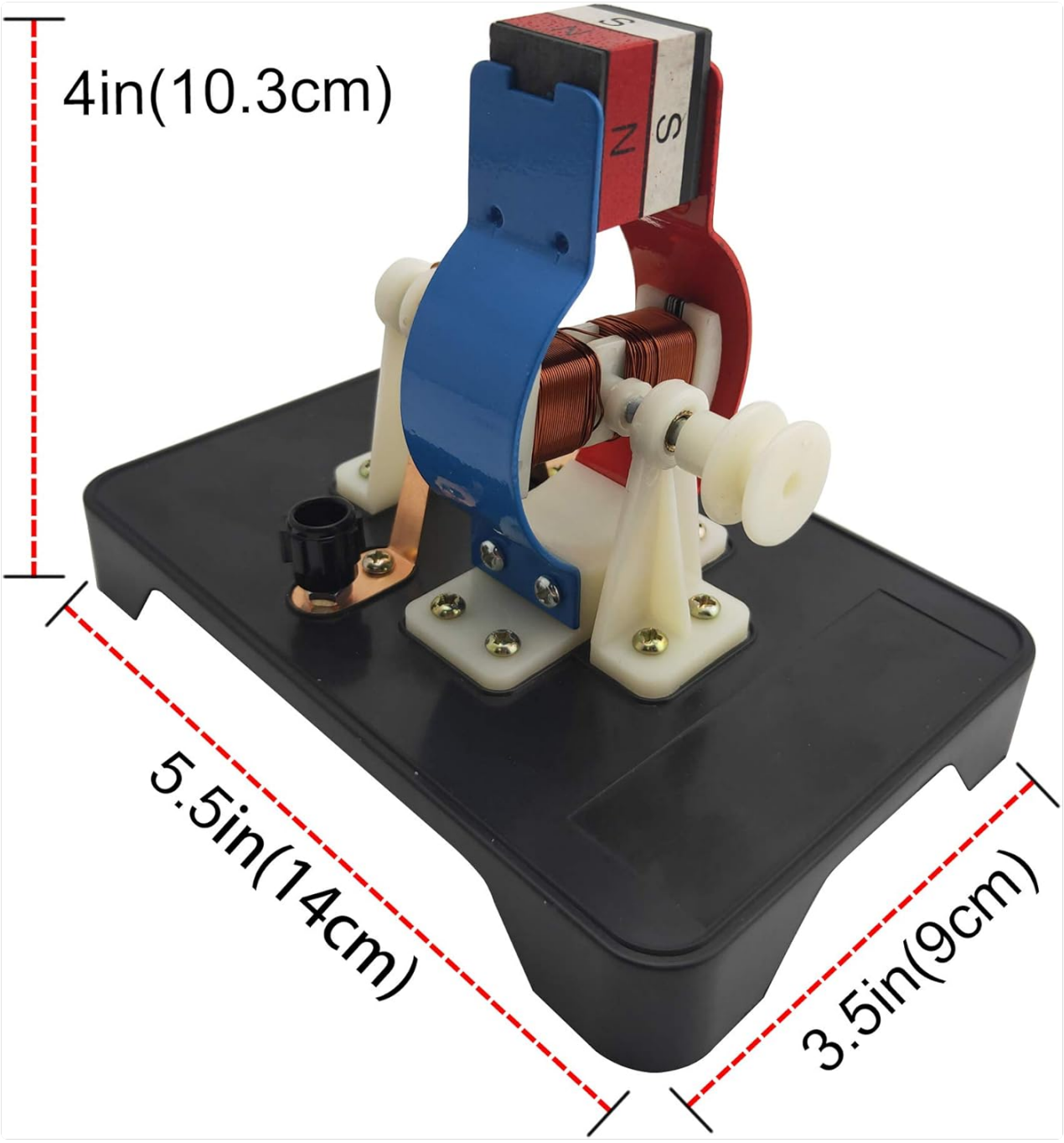

Image: Key points for attention during operation, emphasizing the importance of proper brush-commutator contact.

TROUBLESHOOTING

If your motor model does not operate as expected after assembly, consider the following:

- **Motor Does Not Work After Power On:**
    - Check battery installation: Ensure batteries are inserted with correct polarity and are fully charged.
    - Verify copper brush contact: Make sure the copper brushes are in close and firm contact with the

commutator segments. Adjust if necessary.
    - Rotate the rotor: Sometimes, the motor needs a slight initial push to start. Gently rotate the coil to see if it begins to spin.
    - Inspect wiring: Confirm all wires are securely connected to the terminal posts and brushes.
- **Weak or Intermittent Rotation:**
    - Check battery power: Low battery voltage can result in weak operation. Replace with fresh batteries if needed.
    - Ensure smooth rotation: The coil should rotate freely without any obstruction or excessive friction. Adjust the supports if necessary.
    - Brush alignment: Improper alignment of brushes with the commutator can cause intermittent contact.
- **Overheating:**
    - If any component feels excessively hot, immediately disconnect power. This could indicate a short circuit or excessive current draw. Recheck all connections and wiring.
    - Ensure the working voltage is within the recommended 1.5V-6.0V range.

SPECIFICATIONS

Parameter	Value
Working Voltage	DC 1.5V-6.0V (Do not exceed 6V)
Material	Plastic + Metal
Magnet Size	22x20x20 mm (0.86"x0.79"x0.79")
Magnetic Flux Density	≥ 72mT
Operating Temperature	-20℃~70℃
Operating Humidity	5%~90% RH
Installed Size	14x9x10.3 cm (5.51"x3.54"x4")
Recommended Age	14 years and up (with adult supervision for younger users)
Batteries Required	4 AA batteries (not included)

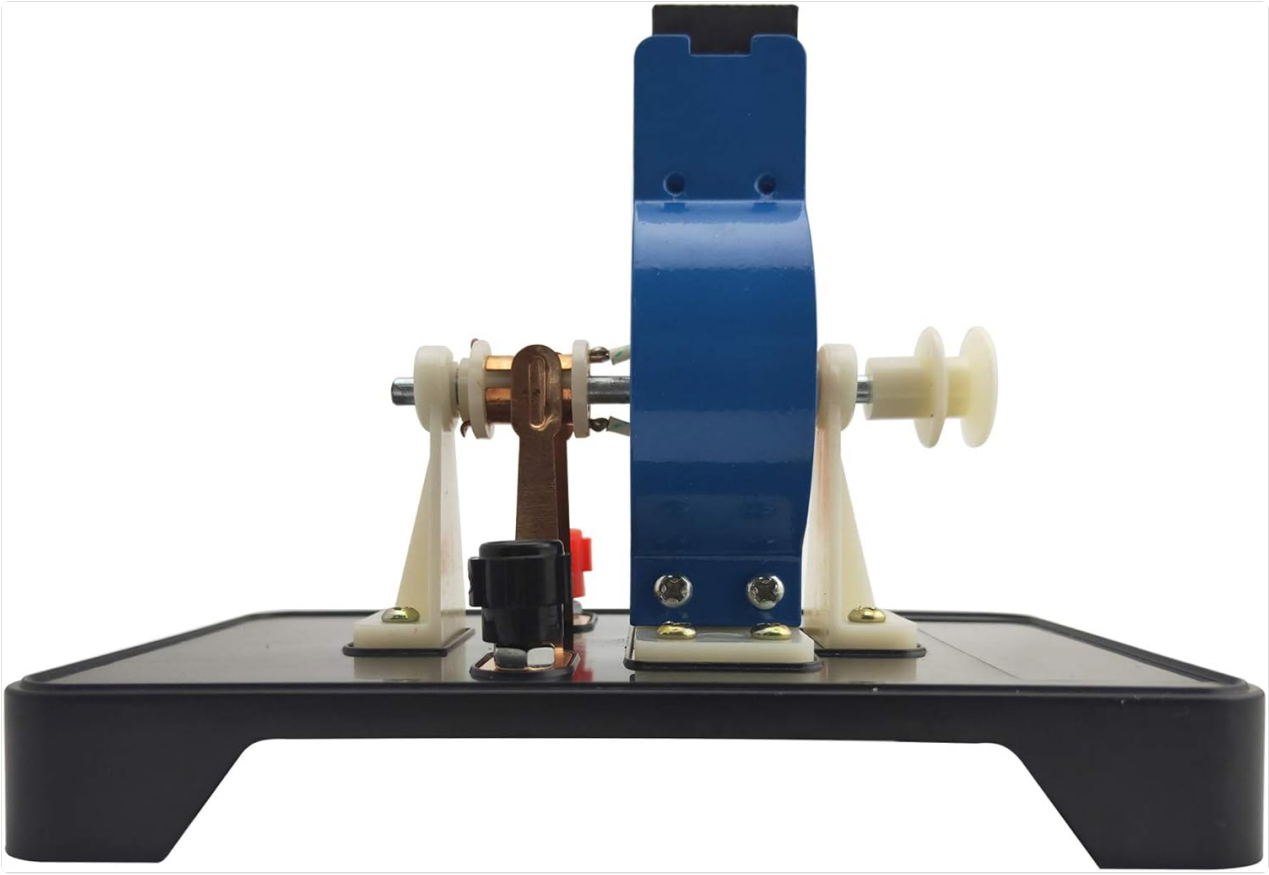

Image: Dimensions of the assembled EUDAX Electric Motor Model.

Maintenance

- **Cleaning:** Use a soft, dry cloth to wipe down the components. Avoid using liquids or harsh chemicals.
- **Storage:** Store the kit in a dry, cool place away from direct sunlight and moisture. Disassemble if storing for extended periods and keep small parts in a secure container.
- **Inspection:** Periodically check all connections and moving parts for wear or damage. Ensure the brushes maintain good contact with the commutator.

Warranty and Support

For any issues encountered during the assembly or use of your EUDAX STEM DIY Simple Electric Motor Model Assembly Kit, please contact EUDAX customer support. We are committed to assisting you and ensuring your satisfaction.
Contact information can typically be found on the product packaging or through the retailer where the product was purchased.