ELEGOO Owl Smart Robotic Car Kit V2.0

ELEGOO Owl Smart Robotic Car Kit V2.0 User Manual

Model: Owl Smart Robotic Car Kit V2.0

1. Introduction

The ELEGOO Owl Smart Robotic Car Kit V2.0 is an educational STEM kit designed to introduce users to robotics, electronics, and programming concepts. This kit is based on the Arduino platform, offering a versatile and open-source environment for learning and experimentation. It features an owl-inspired design and supports various operational modes and programming methods, making it suitable for a wide range of users interested in building and coding their own robot.

2. Safety Information

Please read all safety instructions before assembly and operation.

- This kit contains small parts and is recommended for users aged 13 and up. Adult supervision is advised for younger users.
- Handle electronic components with care to avoid damage from static electricity.
- Ensure all connections are secure before powering on the device to prevent short circuits.
- Do not expose the kit to water or extreme temperatures.
- Use only the provided or recommended power sources and cables.

3. Package Contents

Verify that all components listed below are present in your kit:

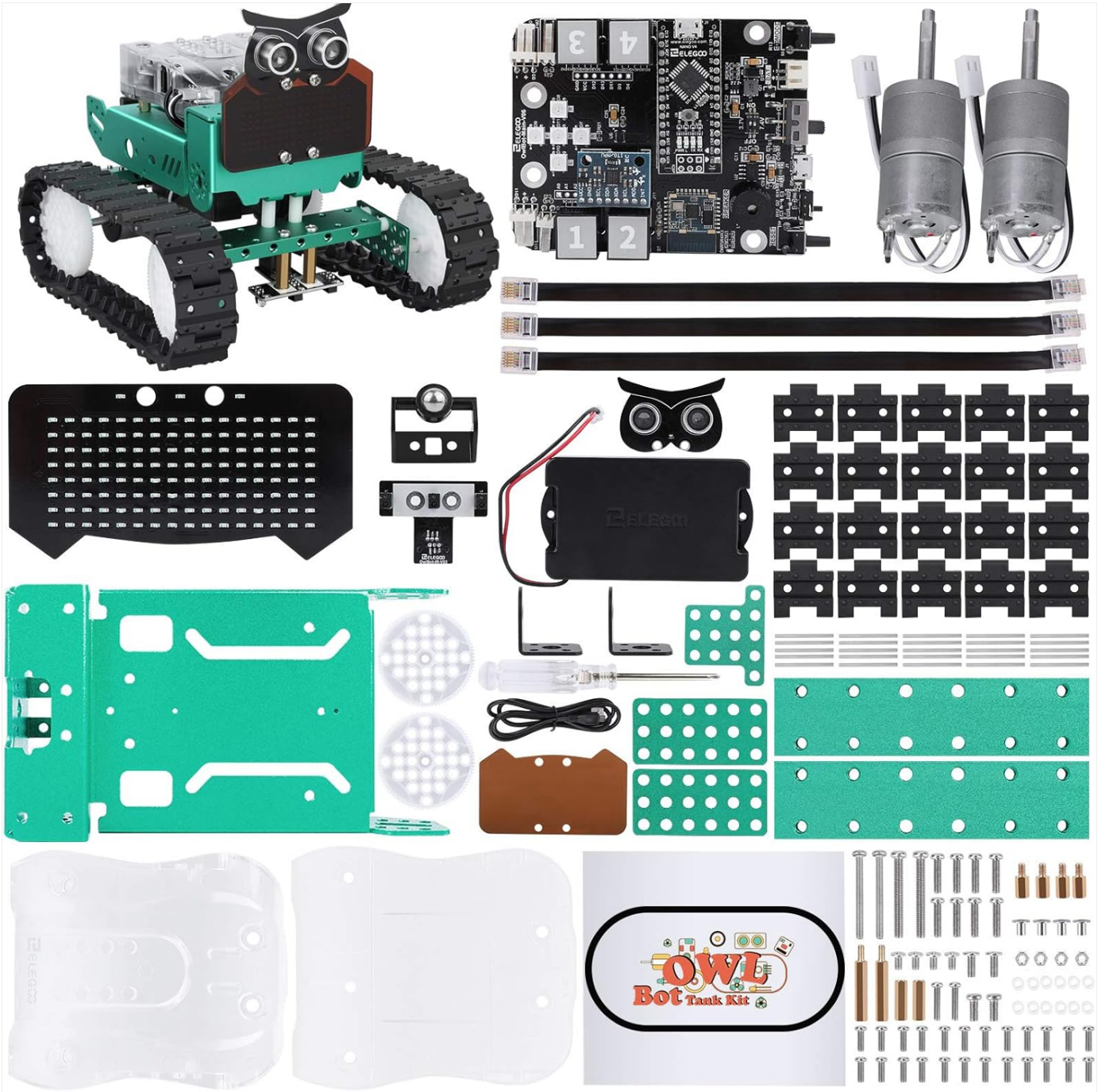


Image: All components of the ELEGOO Owl Smart Robotic Car Kit V2.0, including the main board, motors, tracks, chassis parts, sensors, and tools.

- Main Control Board (Arduino compatible)
- Metal Chassis Components
- Track Wheels and Rubber Tracks
- DC Motors (2x)
- Ultrasonic Sensor Module
- Line Tracking Module
- LED Matrix Display
- Battery Box (for Lithium Polymer battery, included)
- USB Cable
- Screwdriver and various fasteners (screws, nuts)
- Connection Wires
- Instruction Manual (physical copy)



Image: Various smaller boxes containing different parts of the ELEGOO Owl Bot Tank Kit, indicating organized packaging of components.

4. Setup and Assembly

Follow these steps to assemble your ELEGOO Owl Smart Robotic Car Kit V2.0. Refer to the detailed instructions in the included physical manual for visual guidance.

1. **Chassis Assembly:** Begin by assembling the main metal chassis components. Secure them using the provided screws and nuts.
2. **Motor Installation:** Attach the DC motors to the designated positions on the chassis. Ensure the motor wires are routed correctly.
3. **Wheel and Track Attachment:** Mount the track wheels onto the motor shafts and then fit the rubber tracks around the wheels.
4. **Sensor Integration:** Install the ultrasonic sensor module at the front of the robot, resembling the 'owl eyes'. Attach the line tracking module to the underside of the chassis.
5. **Control Board and Battery:** Secure the main control board within its protective casing and mount it onto the chassis. Connect the battery to the control board.
6. **Wiring:** Connect all sensors, motors, and the LED matrix display to the control board according to the wiring diagram in your manual.

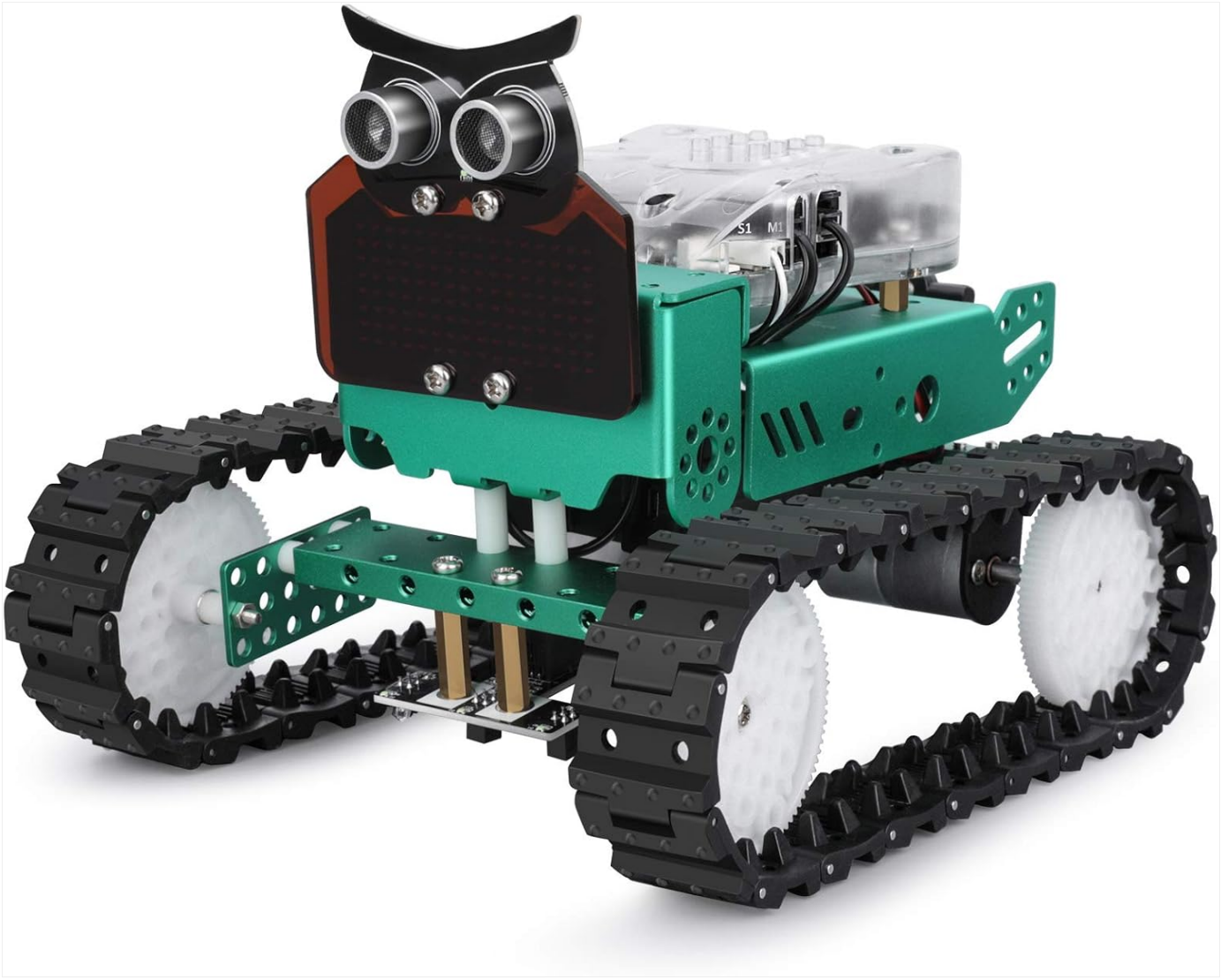


Image: A fully assembled ELEGOO Owl Smart Robotic Car Kit V2.0, showcasing its track-based movement system and front-mounted ultrasonic sensors.

5. Operating Instructions

The ELEGOO Owl Smart Robotic Car Kit V2.0 offers multiple operational modes and programming options.

5.1 Operational Modes

The robot can perform various functions based on its sensors and programming:



Image: The ELEGOO Owl Bot Tank Kit highlighting its capabilities, including obstacle avoidance, line tracking, and various control modes.

- **Obstacle Avoidance Mode:** Utilizes the ultrasonic sensor to detect objects and navigate around them.
- **Line Tracking Mode:** Follows a black line on a light surface using its underside line tracking module.
- **Expression Control Mode:** Allows customization of facial expressions on the LED matrix display.
- **Sound Control Mode:** Responds to sound inputs.
- **Light Control Mode:** Responds to light inputs.
- **Standby Mode:** Low power consumption state.



Image: The robot following a black line on a white surface, demonstrating its line-tracking capability.

5.2 Programming

The kit supports two primary programming methods:

- **Graphical Programming (ELEGOOKIT App):** A Scratch-like block-based programming interface available via a mobile application. This method is ideal for beginners to visually understand coding logic.
- **Text-based Programming (Arduino IDE):** For more advanced users, the robot can be programmed using the Arduino Integrated Development Environment (IDE) with C/C++ language.



Image: A smartphone screen displaying a block-based graphical programming interface, illustrating how to program the robot.

5.3 Expansion with LEGO Building Blocks

The ELEGOO Owl Smart Robotic Car Kit V2.0 is designed to be compatible with LEGO building blocks, allowing for creative expansion and customization of the robot's physical structure.



Image: The robot with additional structures built using LEGO blocks, demonstrating its compatibility and expandability.

5.4 Upright Running Capability

The robot can be configured to run in an upright position, allowing it to navigate over certain obstacles.



Image: The robot shown in an upright position, illustrating its ability to move vertically over small objects.

6. Maintenance

Proper maintenance ensures the longevity and optimal performance of your robotic car kit.

- **Cleaning:** Regularly clean the chassis and sensors with a soft, dry cloth. Avoid using liquids or abrasive materials.
- **Battery Care:** Charge the Lithium Polymer battery using the provided USB cable. Do not overcharge or completely drain the battery. Store the robot with a partially charged battery if not in use for extended periods.
- **Component Check:** Periodically inspect all connections and fasteners to ensure they are secure. Tighten any loose screws.
- **Storage:** Store the kit in a cool, dry place away from direct sunlight and dust.

7. Troubleshooting

If you encounter issues with your ELEGOO Owl Smart Robotic Car Kit V2.0, refer to the following common problems and solutions:

- **Robot does not power on:**
  - Check if the battery is properly connected and charged.

- Ensure the power switch on the control board is in the 'ON' position.

- **Motors are not moving:**
  - Verify that the motor wires are securely connected to the control board.
  - Check your programming code for correct motor commands.
  - Ensure there are no physical obstructions preventing movement.
- **Sensors are not responding:**
  - Confirm that the sensor modules are correctly wired to the control board.
  - Clean the sensor surfaces to remove any dust or debris.
  - Review your code to ensure sensor readings are being processed correctly.
- **Connectivity issues with app/IDE:**
  - Ensure Bluetooth (for app) or USB cable (for IDE) connection is established.
  - Restart the app or Arduino IDE.
  - Check for updated drivers or app versions.
- **Erratic behavior:**
  - Recheck all wiring connections for looseness or incorrect placement.
  - Review your programming logic for errors or unintended commands.

8. Specifications

Feature	Specification
Product Dimensions	5.24 x 4.09 x 9.17 inches
Item Weight	2.87 pounds
Recommended Age	13 years and up
Batteries	1 Lithium Polymer battery (included)
Control Platform	Arduino compatible
Programming Support	Graphical (App) and Text-based (Arduino IDE)

9. Warranty and Support

9.1 Warranty Information

ELEGOO products typically come with a limited warranty covering manufacturing defects. Please refer to the warranty card included in your product packaging or visit the official ELEGOO website for detailed warranty terms and conditions specific to your region.

9.2 Customer Support

For technical assistance, troubleshooting, or any questions regarding your ELEGOO Owl Smart Robotic Car Kit V2.0, please contact ELEGOO customer support through their official website or the contact information provided in your product documentation. Online resources, including tutorials and forums, may also be available.

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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