

OWI Inc OWI-535

OWI Inc Robotic Arm Edge (Model OWI-535) Instruction Manual

Comprehensive guide for assembly, operation, and maintenance.

1. INTRODUCTION

The OWI Inc Robotic Arm Edge (Model OWI-535) is an educational robotics kit designed for users aged 13 and up. This kit allows for the construction of a robotic arm with extensive motion capabilities, providing an engaging introduction to robotics without requiring soldering. The arm features a gripper that opens and closes, radial wrist motion, elbow range of motion, and base rotation.

2. WHAT'S IN THE BOX

Your OWI Inc Robotic Arm Edge kit includes all necessary components for assembly. Please verify all parts are present before beginning construction.

- OWI OWI-535: Robotic Arm Edge components
- Control box with wired connection
- Various plastic parts (black and yellow)
- Motors and wiring
- Screws and fasteners
- Instruction manual

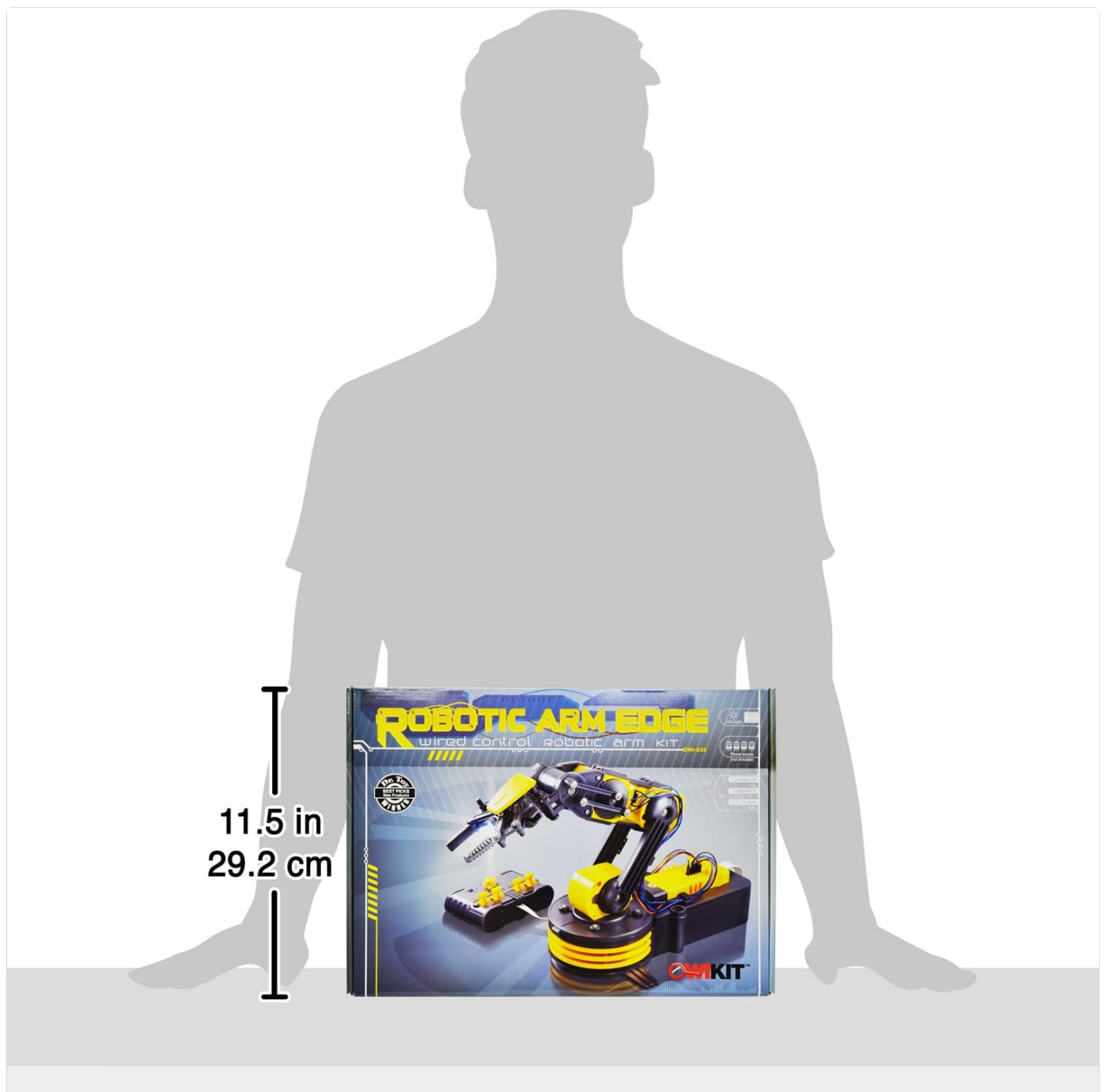


Figure 2.1: Kit Contents. This image displays the various components included in the OWI Inc Robotic Arm Edge kit, laid out on a surface. It shows plastic molded parts in black and yellow, circuit boards, wires, and small bags of fasteners, all ready for assembly.

3. ASSEMBLY INSTRUCTIONS

The OWI Inc Robotic Arm Edge is designed for assembly without soldering. Follow the detailed steps provided in the included instruction manual. It is recommended to sort all parts before beginning to ensure a smooth assembly process.

1. **Preparation:** Carefully remove all plastic parts from their sprues. Use a fine-tooth file or hobby knife to smooth any rough edges.
2. **Motor Installation:** Install the motors into their designated housings as per the manual's diagrams.
3. **Gearbox Assembly:** Assemble the gearboxes, ensuring all gears are correctly aligned and seated. Pay close attention to the placement of small components like hex nuts to prevent issues.
4. **Arm Segments:** Connect the arm segments, securing them with the provided screws.
5. **Wiring:** Connect the motor wires to the control board, following the color-coded instructions.
6. **Base Assembly:** Secure the robotic arm to its base.

7. **Controller Connection:** Connect the wired controller to the main unit.



Figure 3.1: Assembled Robotic Arm. This image shows the fully assembled OWI Inc Robotic Arm Edge, demonstrating its articulated structure and the various wired connections that enable its movements.

4. SETUP

Before operating the robotic arm, ensure proper power supply and connections.

- **Battery Installation:** The robotic arm requires D batteries for operation. Install them into the designated battery compartment in the base unit. Ensure correct polarity.
- **Controller Connection:** Connect the wired controller to the robotic arm's base unit.
- **Placement:** Place the robotic arm on a stable, flat surface to prevent tipping during operation.

5. OPERATING INSTRUCTIONS

The OWI Inc Robotic Arm Edge is controlled via a wired remote. Each button or lever on the controller corresponds to a specific movement of the arm. Familiarize yourself with the controls before attempting complex maneuvers.

5.1. Basic Movements

- **Gripper Control:** Use the designated controls to open and close the robotic arm's gripper.

- **Wrist Movement:** Adjust the radial wrist motion (120 degrees) using the corresponding controls.
- **Elbow Movement:** Control the elbow's extensive range of motion (300 degrees).
- **Base Rotation:** Rotate the arm's base (270 degrees) to change its orientation.
- **Base Motion:** Utilize controls for the base's 180-degree motion.
- **LED Light:** The arm features an LED light for illuminating objects. Activate it using the dedicated control.

Practice each movement individually before combining them to perform tasks. Avoid forcing movements beyond their natural range to prevent damage to the gears.

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Video 5.1: Robotic Arm Edge Operation. This video demonstrates the various movements and functions of the OWI Inc Robotic Arm Edge, including gripper action, arm articulation, and base rotation, controlled via its wired remote.

6. MOVEMENT CAPABILITIES

The Robotic Arm Edge offers a wide range of motion for precise control:

- **Radial Wrist Motion:** 120 degrees
- **Elbow Range of Motion:** 300 degrees
- **Base Rotation:** 270 degrees
- **Base Motion:** 180 degrees
- **Gripper:** Opens and closes

7. MAINTENANCE

To ensure the longevity and optimal performance of your Robotic Arm Edge, follow these maintenance guidelines:

- **Cleaning:** Keep the arm free from dust and debris. Use a soft, dry cloth for cleaning. Avoid using liquids or harsh chemicals.
- **Gear Inspection:** Periodically inspect the gears for any signs of wear or damage. If you hear clicking sounds during operation, it may indicate stripped gears, requiring careful adjustment or replacement.
- **Battery Care:** Remove batteries if the arm will not be used for an extended period to prevent leakage.
- **Storage:** Store the robotic arm in a cool, dry place away from direct sunlight and extreme temperatures.

8. TROUBLESHOOTING

If you encounter issues with your Robotic Arm Edge, consider the following common solutions:

- **Arm Not Moving:**
 - Check if the D batteries are correctly installed and have sufficient charge.
 - Ensure all wired connections between the arm, control box, and motors are secure.
- **Clicking Sound During Operation:**
 - This often indicates stripped gears. Stop operation immediately.
 - Carefully disassemble the affected section and inspect the gears. Re-seat or replace damaged gears as needed. Avoid over-stressing the arm by pushing movements beyond their limits.
- **Inconsistent Movement:**
 - Verify that all plastic parts were properly trimmed during assembly and are not obstructing movement.

- Ensure no wires are tangled or interfering with the arm's joints.

9. SPECIFICATIONS

Feature	Detail
Product Dimensions	6.3 x 15 x 9 inches
Item Weight	2.35 pounds
Model Number	OWI-535
Recommended Age	13 years and up
Batteries Required	D batteries (not included)
Soldering Required	No
Maximum Lift Capacity	100g (approximate)

10. SAFETY INFORMATION

Legal Disclaimer: This product is intended for use by individuals 18 years or older, or with adult supervision for the recommended age of 13 years and up. Keep small parts away from young children to prevent choking hazards.

11. WARRANTY AND SUPPORT

For warranty information, technical support, or inquiries regarding replacement parts, please refer to the contact details provided in the product packaging or visit the official OWI Inc website. Specific warranty terms and conditions may vary.

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