ELEPHANT ROBOTICS myCobot280M5

ELEPHANT ROBOTICS myCobot 280 M5 6-Axis Robotic Arm User Manual

Model: myCobot280M5

1. PRODUCT OVERVIEW

The ELEPHANT ROBOTICS myCobot 280 M5 is an open-source, 6-axis collaborative robotic arm designed for education, research, and various applications. It integrates with M5Stack for easy programming and offers high flexibility and intelligence.

This robotic arm is highly portable, achieving 0.05mm repeatability and a speed of 20ms. It features dual display screens and built-in 6 servo motors for fast response and smooth rotation.

Figure 1: myCobot 280 M5 Robotic Arm

2. Setup

2.1 Unboxing and Component Identification

Carefully unpack all components from the box. Ensure all items listed in the packing list are present and undamaged.

Figure 2: Package Contents of myCobot 280 M5

The package typically includes the robotic arm, power adapter cable, and documentation. Familiarize yourself with the main components:

- Robotic Arm Base with M5Stack Basic
- 6-Axis Arm Structure
- End-effector (e.g., gripper, M5Stack Atom)
- Power Adapter Cable

Your browser does not support the video tag. This video shows the unboxing process of the myCobot280 M5 6-DoF Robotic Arm, detailing its components and initial setup.

Video 1: Unboxing Video of myCobot280 M5 6-DoF Robotic Arm

2.2 Power Connection

Connect the provided power adapter cable to the designated power port on the robotic arm's base. Ensure a secure connection. Plug the power adapter into a suitable power outlet.

2.3 Initial Assembly and Configuration

The myCobot 280 M5 comes largely pre-assembled. However, some initial configuration or attachment of end-effectors may be required. Refer to the detailed diagrams below for specific dimensions and coordinate
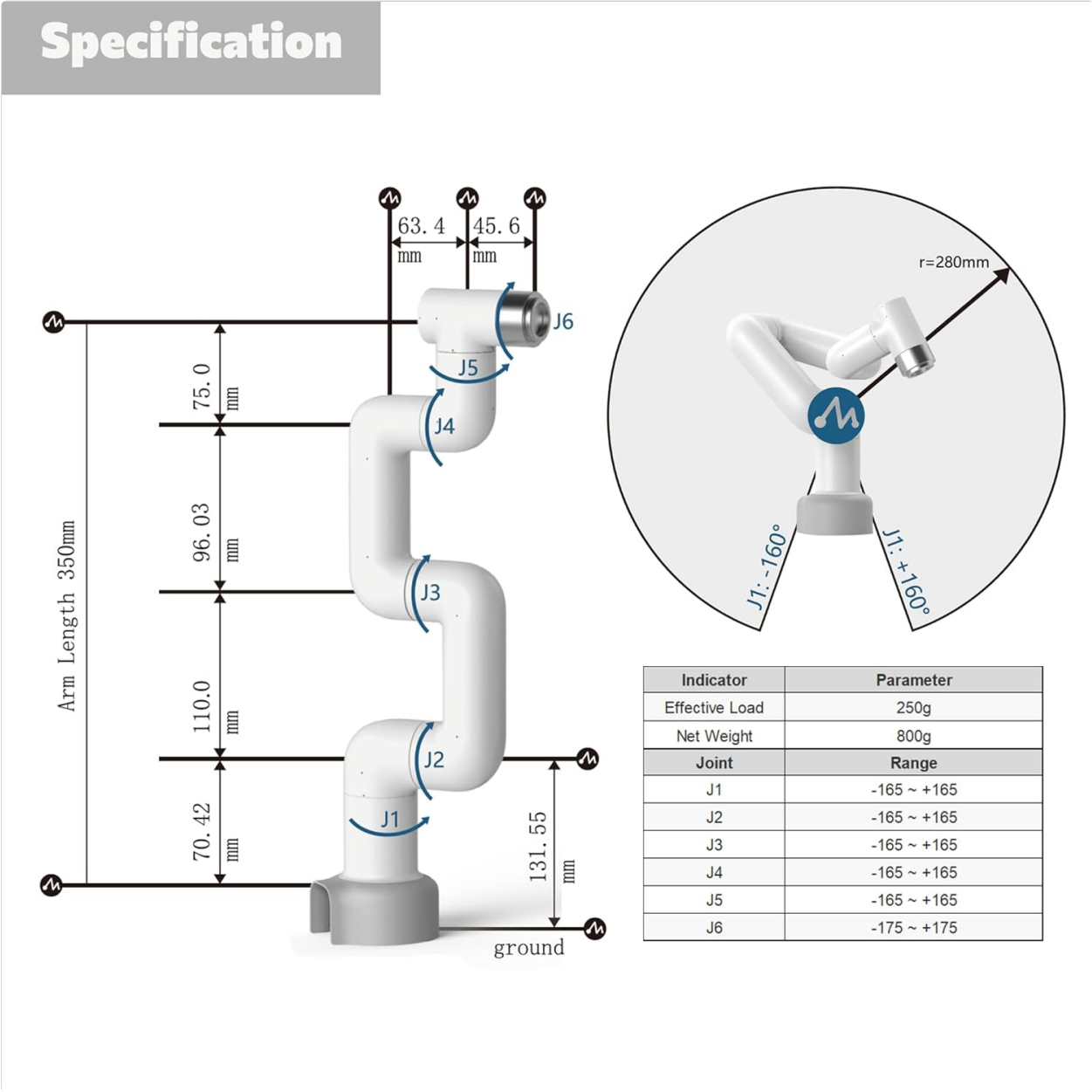
parameters.

Indicator	Parameter
Effective Load	250g
Net Weight	800g
Joint	**Range**
J1	-165 ~ +165
J2	-165 ~ +165
J3	-165 ~ +165
J4	-165 ~ +165
J5	-165 ~ +165
J6	-175 ~ +175

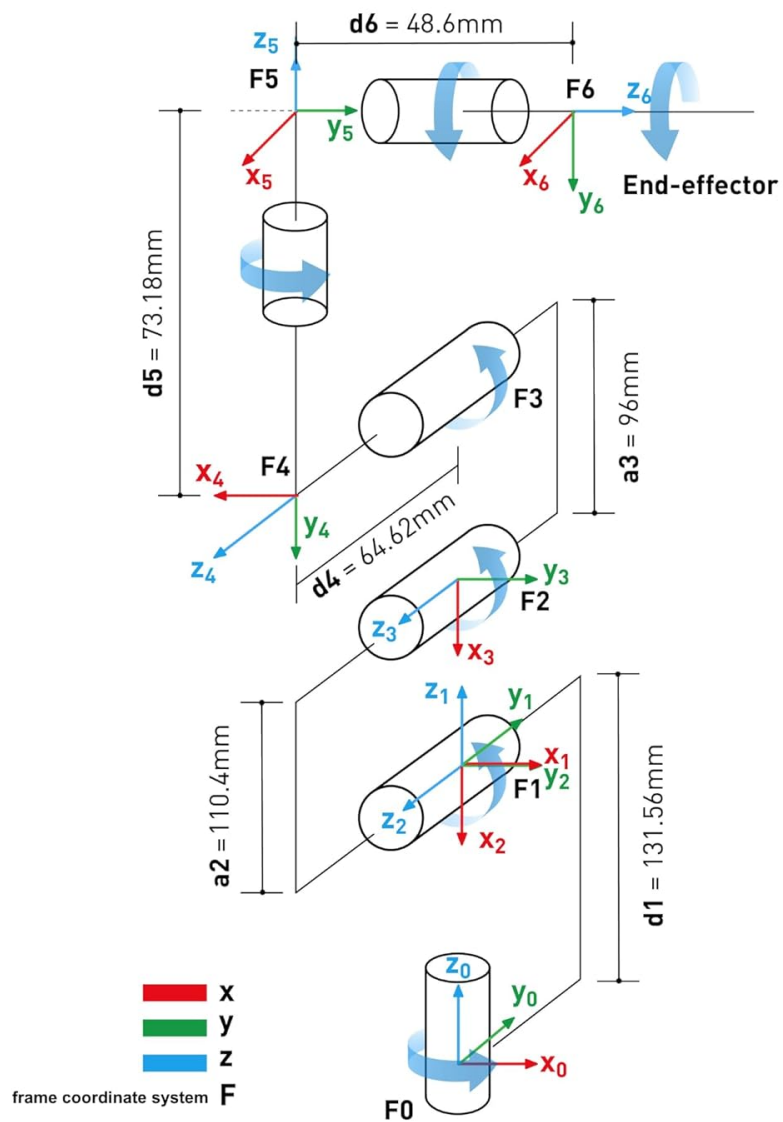Figure 3: myCobot 280 M5 Specifications and Dimensions

Cartesian Coordinate Parameters

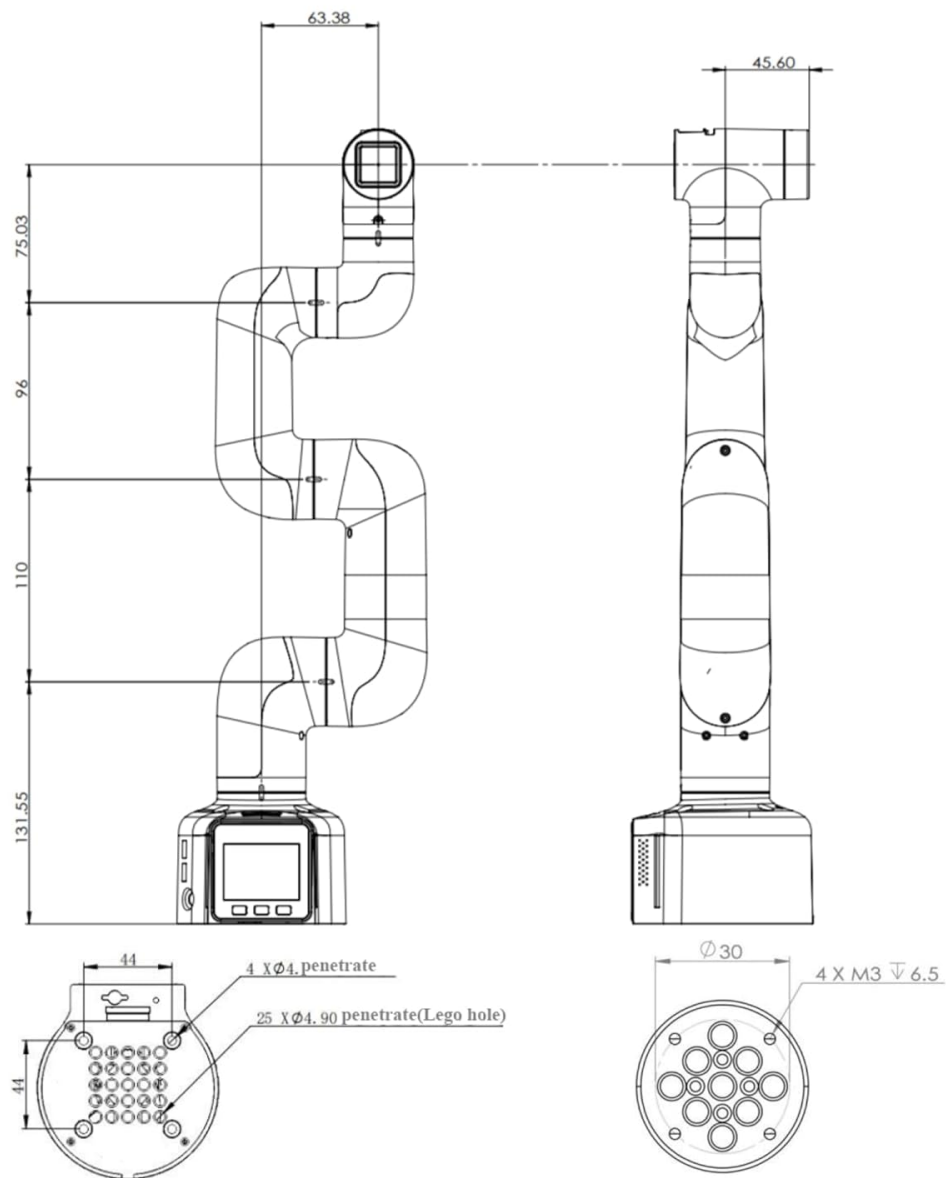Figure 4: myCobot 280 M5 Cartesian Coordinate Parameters

Figure 5: myCobot 280 M5 Detailed Dimensions

The robotic arm features dual display screens, coordinating with the M5Stack ecosystem. These screens support a fast LED library for extended applications.
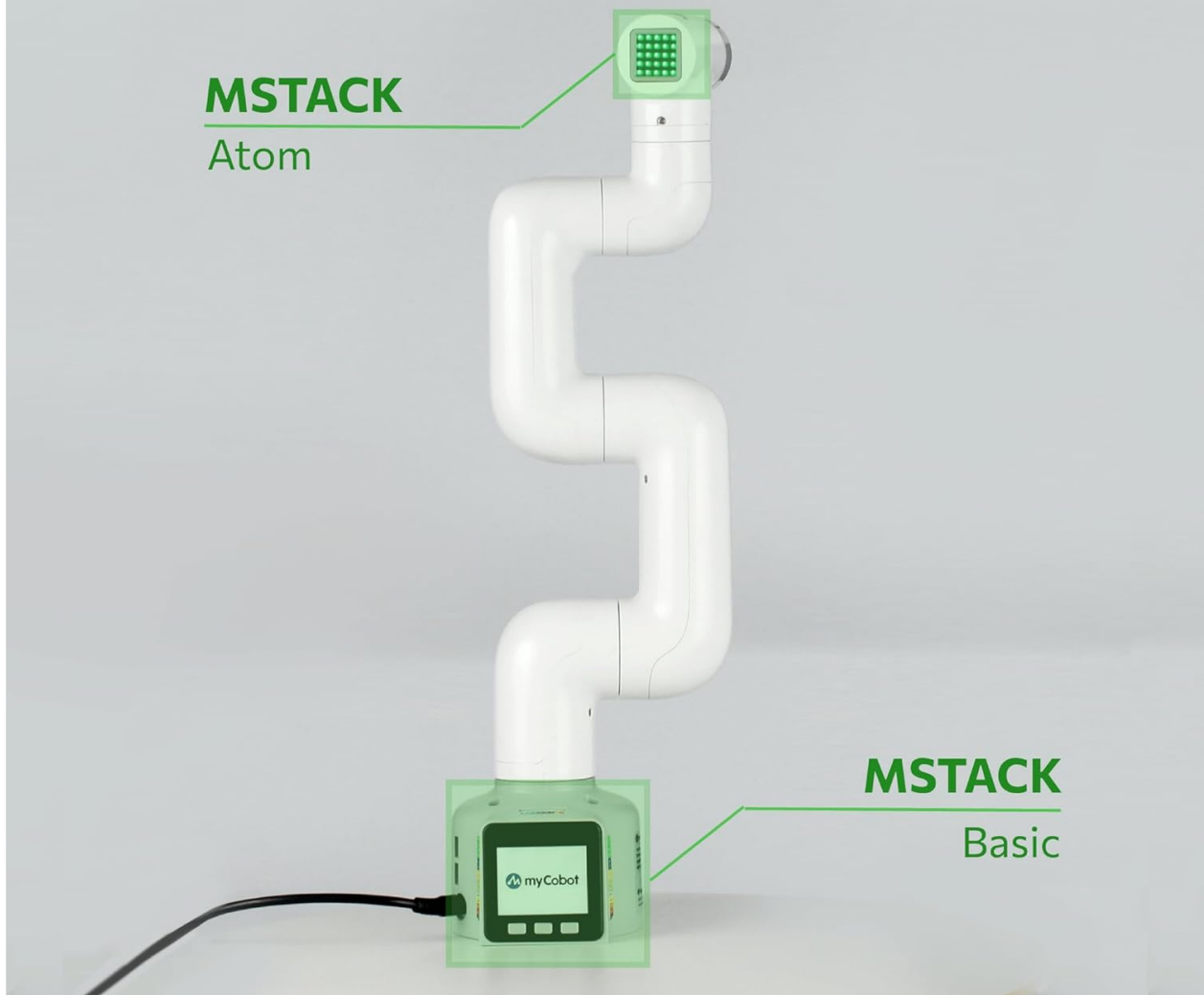
Figure 6: myCobot 280 M5 Dual Display Screens

3. OPERATING INSTRUCTIONS

3.1 Programming and Control

The myCobot 280 M5 supports multiple programming languages and open-source libraries for personalized application development. It offers various control methods:

- **Blockly Programming (UIFlow):** Intuitive visual programming software for simplified coding.
- **ROS (Robot Operating System):** RoboFlow, designed by Elephant Robotics, supports functional modules for ROS systems, offering object, facial, and image recognition.
- **Python:** Supports open-source libraries for advanced application development.
- **Joystick/App Control:** The robotic arm can be controlled directly via a joystick or a dedicated mobile application.
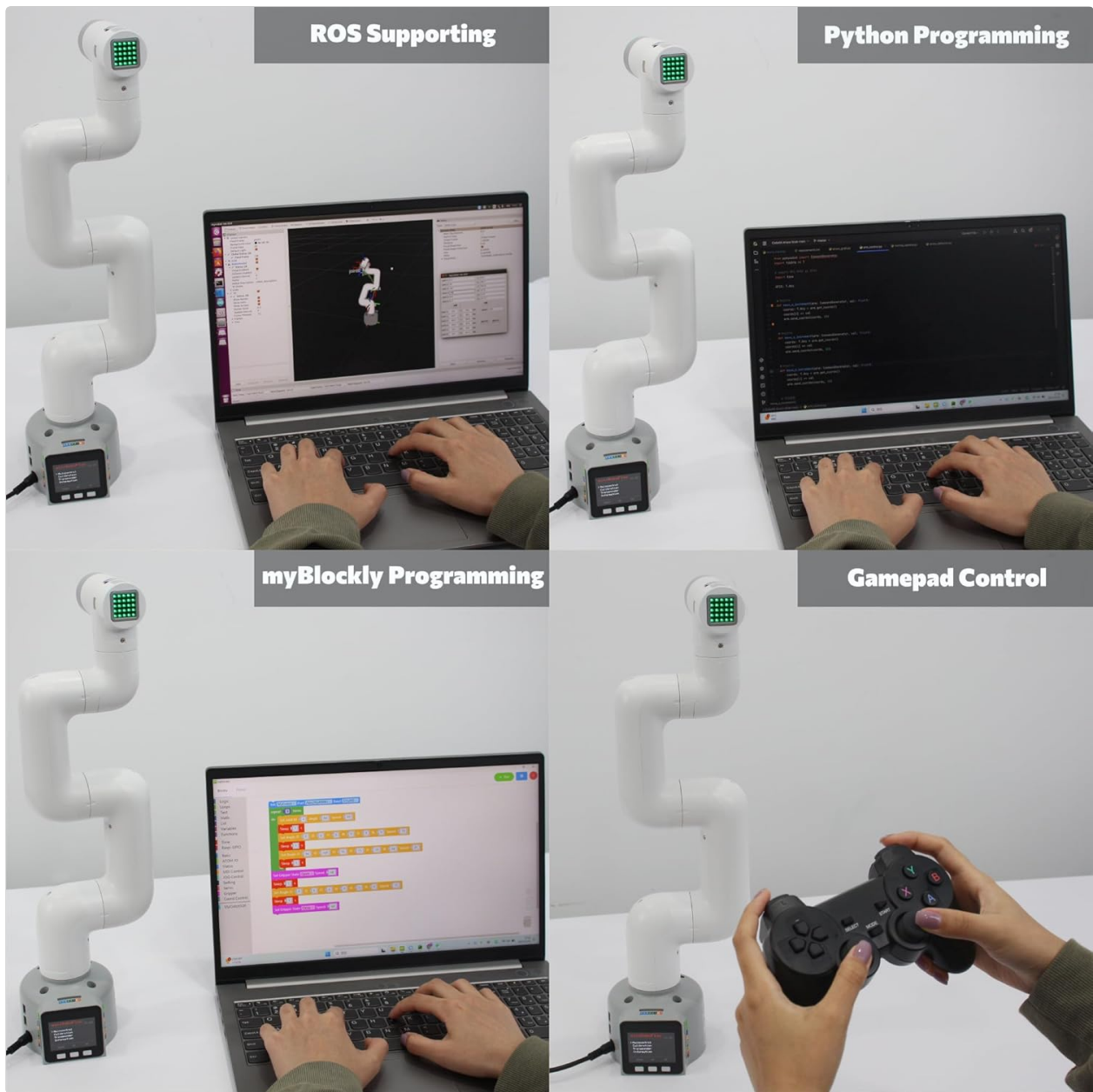
Figure 7: myCobot 280 M5 Programming and Control Methods

Your browser does not support the video tag. This video demonstrates the capabilities and various applications of the myCobot 280, an open-source 6-axis robotic arm.
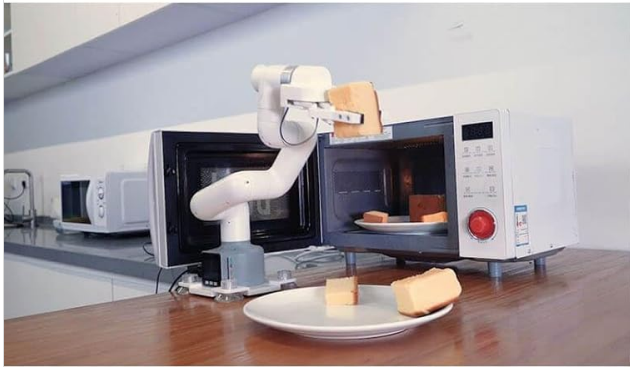
Video 2: Open Source 6 Axis Robotic Arm - myCobot 280 Overview

3.2 Applications

The myCobot 280 M5 is suitable for a wide range of applications, including:

- AI Education
- Commercial Exploration
- Object Recognition
- Facial Recognition
- Image Recognition
- Drag Trial Teaching

Wide Applications

Kitchen Assistant

The perfect helper for the studio

Teaching Assistant

Sense Human Body Temperature

Figure 8: myCobot 280 M5 Wide Applications

Figure 9: myCobot 280 M5 Gripper in Action

4. MAINTENANCE

To ensure the longevity and optimal performance of your myCobot 280 M5, follow these maintenance guidelines:

- **Cleaning:** Regularly wipe the robotic arm with a soft, dry cloth. Avoid using harsh chemicals or abrasive materials.
- **Storage:** Store the robotic arm in a clean, dry environment away from direct sunlight and extreme temperatures.
- **Cable Management:** Ensure all cables are neatly organized and not under tension to prevent damage.
- **Joint Inspection:** Periodically check the joints for any signs of wear or looseness. Tighten screws if necessary, but do not overtighten.

5. TROUBLESHOOTING

If you encounter issues with your myCobot 280 M5, consider the following common problems and solutions:

- **Programming Communication Issues:** Ensure all software (e.g., MyBlockly, UIFlow) is correctly installed and configured. Verify the correct port selection and board type in your IDE. Check for proper JSON program formatting, including file extensions.
- **Power-Related Problems:** Confirm the power adapter cable is correctly wired and securely connected. Verify the power supply voltage matches the robot's requirements. If the robot does not power on, check the power adapter and connections.
- **Gripper Malfunctions:** If the gripper produces incorrect position nodes or fails to operate, check the programming logic and ensure physical connections are secure.
- **Movement Issues:** If the arm does not move as expected, verify that the servo motors are correctly connected and calibrated. Check for any physical obstructions.

For more detailed troubleshooting, refer to the official ELEPHANT ROBOTICS documentation or support resources.

6. SPECIFICATIONS

Feature	Detail
Product Dimensions	11.02 x 11.02 x 11.02 inches
Item Weight	1.87 Pounds
Model Number	myCobot280M5
Manufacturer	ELEPHANT ROBOTICS
Repeatability	0.05mm
Speed	20ms
Servo Motors	6 (built-in)
Display Screens	2 (M5Stack integration)

7. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official ELEPHANT ROBOTICS website or contact their customer service directly. Keep your purchase receipt for warranty claims.

Important Note: The myCobot 280 robotic arm is recommended for individuals with a basic understanding of programming and is not recommended for children. Please thoroughly read all instructions before operation.

Related Documents - myCobot280M5

	[myCobot User Manual - Elephant Robotics](#) This user manual provides comprehensive information on the Elephant Robotics myCobot collaborative robot, covering its features, hardware, software, installation, operation, safety guidelines, and after-sales service.
	[myCobot: World's Smallest and Lightest Six-Axis Collaborative Robot - Elephant Robotics](#) Explore the myCobot, the world's smallest and lightest six-axis collaborative robot from Elephant Robotics. Featuring a compact design, powerful performance, M5 Stack integration, graphical programming (uiflow, RoboFlow, Arduino, ROS), and versatile applications for education, research, and industry.
	[myCobot Robotic Arm User Manual and API Guide](#) Comprehensive guide to the myCobot robotic arm by Elephant Robotics, covering hardware, software (myStudio, myBlockly), APIs (Python, Arduino, ROS, uiFlow, RoboFlow), ROS integration, and technical specifications for Basic and Atom models.
	[mechArm 270-M5: Compact 6-Axis Articulated Robot by Elephant Robotics](#) Explore the mechArm 270-M5, a compact and portable 6-axis articulated robot from Elephant Robotics, designed for makers, education, and industry. Features open-source compatibility, high precision, and versatile development environments.
	[mechArm 270-Pi: The Compact 6-Axis Articulated Robot](#) Discover the mechArm 270-Pi, the world's smallest and most compact 6-axis articulated robot from Elephant Robotics. Ideal for education, innovation, and research, this robot offers advanced features and compatibility with ROS.
	[Elephant Robotics myCobot & mechArm Series User Manual and Development Guide](#) Comprehensive user manual and development guide for Elephant Robotics' myCobot and mechArm series of collaborative robotic arms. Covers product introductions, setup, programming with Python, C++, ROS, Blockly, API usage, and troubleshooting for educational, research, and industrial applications.

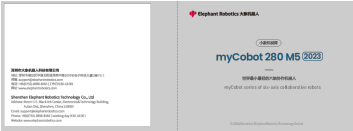Documents - ELEPHANT ROBOTICS – myCobot280M5

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https://www.elephantrobotics.com/en/mycobot-en/ - 1 - myCobot 280 M5 - 2 - - 3 - - 4 - - 5 - DC 12V5A - 6 - - 7 - Base interface A. The interface, screen fo...

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