

PEMENOL GY22051-1

PEMENOL Digital Protractor Soldering Kit GY22051-1 User Manual

Model: GY22051-1

1. INTRODUCTION

Thank you for choosing the PEMENOL Digital Protractor Soldering Kit. This kit provides an engaging way to learn basic electronics and soldering skills while assembling a functional digital angle ruler. This manual will guide you through the assembly, operation, and maintenance of your new device.

2. SAFETY WARNINGS

This product is a DIY soldering kit and requires the use of a soldering iron, which can reach high temperatures. Please observe the following safety precautions:

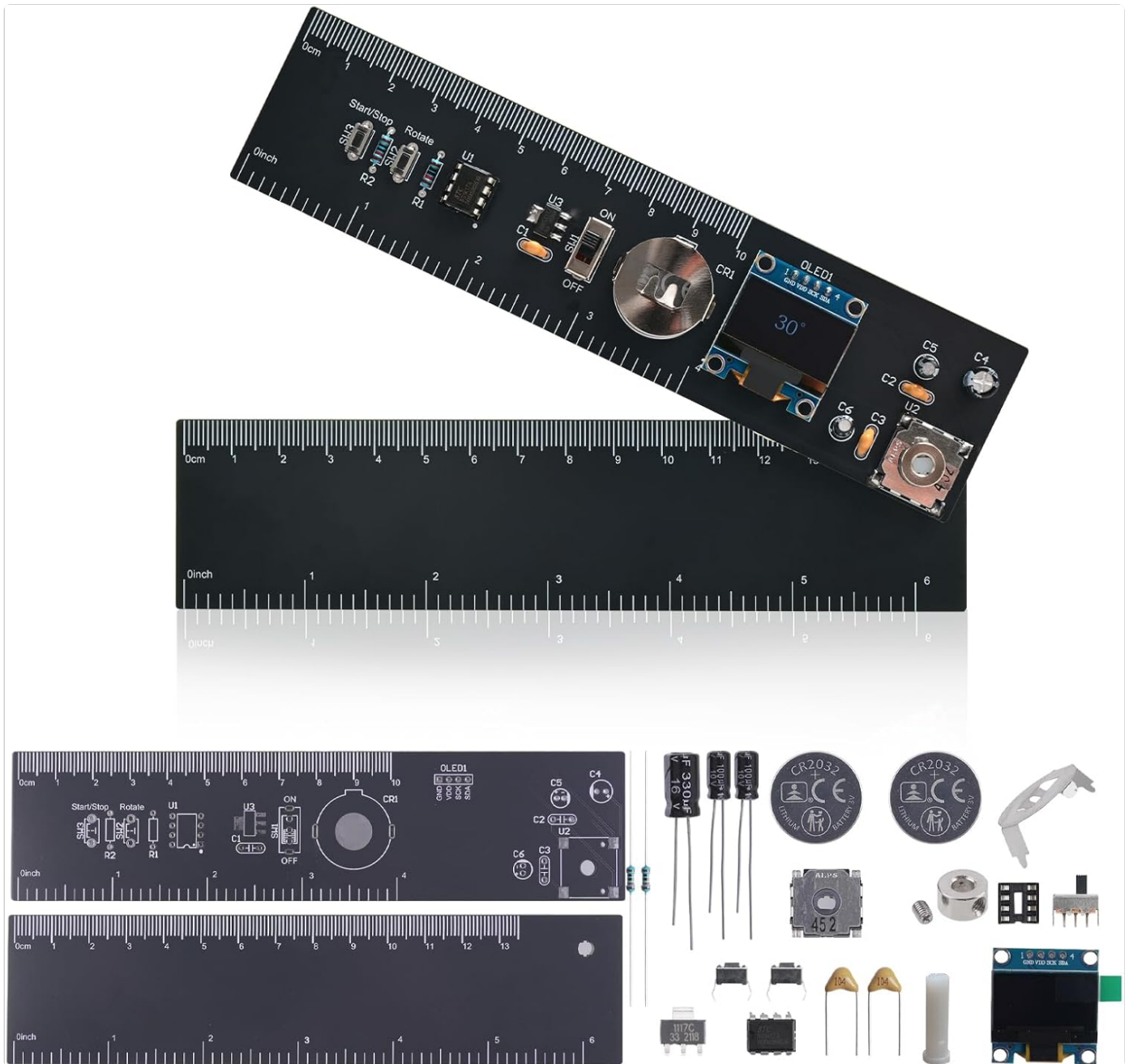
- Always work in a well-ventilated area.
- Use appropriate personal protective equipment, such as safety glasses.
- Ensure the soldering iron is placed on a heat-resistant stand when not in use.
- Avoid touching the hot tip of the soldering iron or freshly soldered components.
- Keep out of reach of children. Recommended age for assembly is 18 months and up, but adult supervision is highly recommended due to the nature of soldering.
- No other specific safety warnings are applicable to the assembled device under normal use.

3. PACKAGE CONTENTS

Before beginning assembly, please verify that all components are present in your kit:

- Main PCB Ruler
- Secondary Ruler
- LCD Display Module
- Various Electronic Components (resistors, capacitors, integrated circuits, buttons, etc.)
- Battery Holder

- CR2032 Batteries (typically 4 included, 2 for use, 2 spare)
- Plastic Connector for the two boards
- Small Screws and Nuts



Components of the PEMENOL Digital Protractor Soldering Kit, including the main PCB ruler, secondary ruler, LCD display, electronic components, and batteries.

4. ASSEMBLY INSTRUCTIONS (SETUP)

This kit requires basic soldering skills. If you are new to soldering, it is recommended to practice on scrap components first. Ensure you have the following tools:

- Soldering Iron with a fine tip
- Solder wire
- Wire cutters
- Small Phillips screwdriver
- Multimeter (optional, for testing connections)

Follow the illustrated step-by-step instructions provided with your kit (usually in German, but generally comprehensible with illustrations). Key steps include:

1. **Component Identification:** Carefully identify all electronic components and their corresponding positions on the PCB. Pay attention to polarity for components like diodes and integrated circuits.
2. **Soldering Components:** Solder all through-hole components onto the main PCB. Start with smaller components and work your way up. Ensure clean, strong solder joints.
3. **LCD Display Installation:** Solder the LCD display module to its designated area on the main PCB.
4. **Connecting the Rulers:** Use the provided plastic connector and screws to attach the secondary ruler to the main PCB ruler. This connection is crucial for accurate angle measurement. Ensure it is secure but allows for smooth rotation.
5. **Battery Installation:** Insert two CR2032 batteries into the battery compartment, observing the correct polarity.

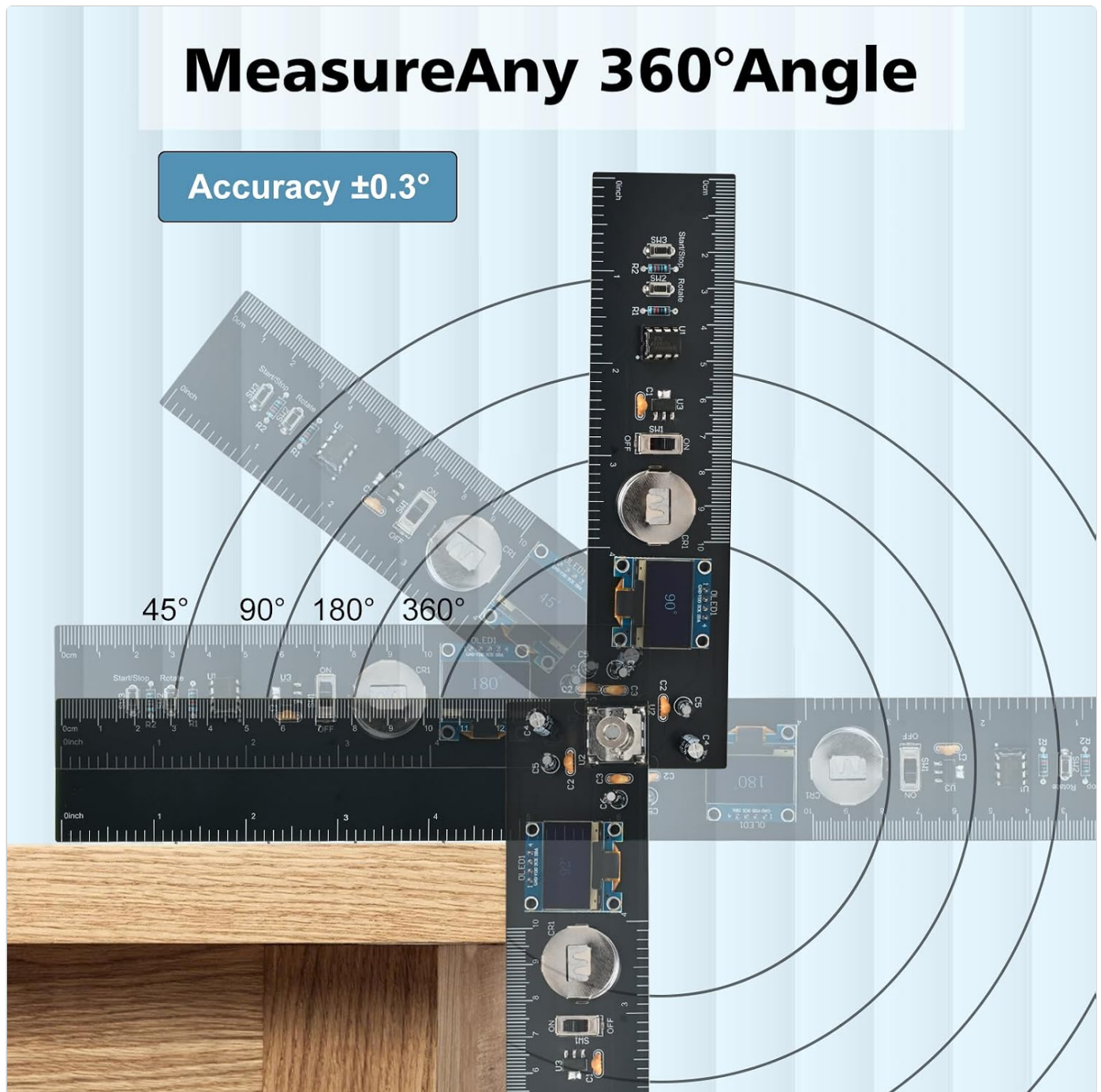


Illustration of the digital protractor measuring various angles up to 360 degrees, highlighting its accuracy of $\pm 0.3^\circ$.

Improve Soldering skills

All through-hole component design makes soldering easier



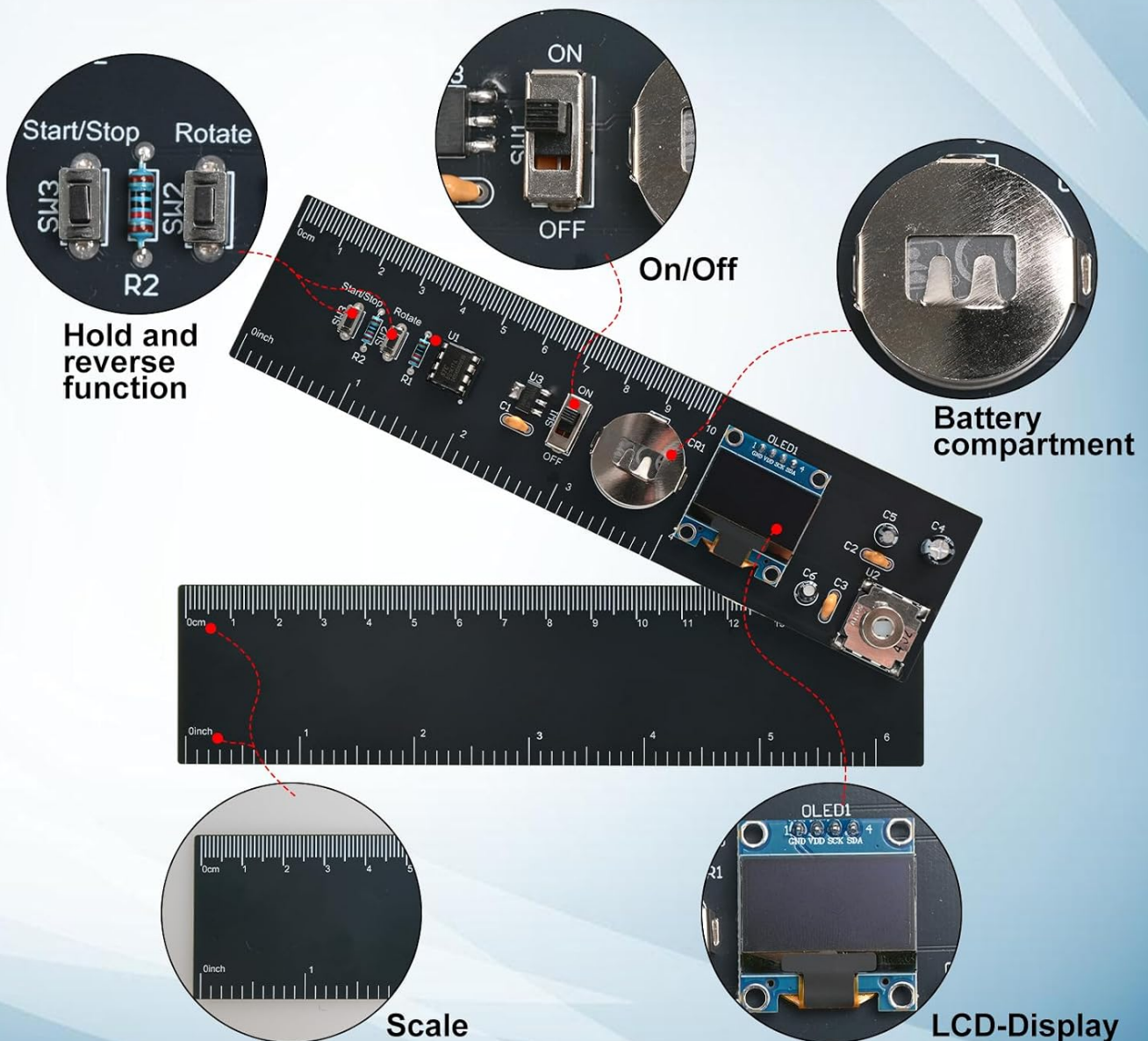
A user assembling the digital protractor, emphasizing the kit's role in improving soldering skills with its through-hole component design.

5. OPERATING INSTRUCTIONS

5.1 Power On/Off

Locate the ON/OFF switch on the main PCB. Slide the switch to the 'ON' position to power on the device. Slide it to 'OFF' to power off.

product details



Detailed view of the digital protractor's features, showing the On/Off switch, battery compartment, Start/Stop and Rotate buttons for hold and reverse functions, measurement scale, and LCD display.

5.2 Measuring Angles

Once powered on, the LCD will display the current angle. Place the two rulers along the surfaces you wish to measure. The display will update in real-time.

5.3 Data Hold Function

Press the 'Start/Stop' button (labeled SW3 or similar) to hold the current reading on the display. Press it again to release and resume live measurement.

5.4 Screen Rotation (Reverse Function)

The LCD display can rotate 180° for comfortable reading from either side. This is typically activated by pressing the 'Rotate' button (labeled SW2 or similar).

Reverse Function



Demonstration of the reverse function, allowing the LCD display to rotate 180° for comfortable reading from either side.

5.5 Zeroing/Calibration

To reset the angle sensor and set the current position as zero, press and hold the 'Start/Stop' and 'Rotate' buttons simultaneously for approximately 2 seconds. The display will briefly turn off and then reset.

5.6 Dual Scale

The rulers feature both centimeter and inch graduations, making them suitable for various tasks such as drawing, learning, and general household use.

6. MAINTENANCE

6.1 Battery Replacement

The device uses two CR2032 button cell batteries. When the display becomes dim or the device fails to power on, it's time to replace the batteries. Open the battery compartment, remove the old batteries, and insert new ones, ensuring correct

polarity.

6.2 Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or immerse the device in water.

6.3 Storage

Store the digital protractor in a dry place, away from direct sunlight and extreme temperatures. If storing for extended periods, it is advisable to remove the batteries to prevent leakage.

7. TROUBLESHOOTING

- **Device does not power on:**
 - Check if the ON/OFF switch is in the 'ON' position.
 - Verify that the batteries are correctly installed with the right polarity.
 - Replace the batteries with new ones.
 - Inspect solder joints for any loose connections or shorts, especially around the power circuit.
- **Inaccurate or unstable readings:**
 - Perform a zero-calibration as described in section 5.5.
 - Ensure the connection between the two rulers is firm and free of play.
 - Check the solder joints for the angle sensor components; poor soldering can lead to erratic measurements.
 - Ensure the device is on a flat, stable surface during measurement.
- **Display is dim or blank:**
 - Replace the batteries.
 - Check the solder connections for the LCD module.

8. SPECIFICATIONS

Model Number	GY22051-1
Brand	PEMENOL
Dimensions (L x W x H)	16.5 x 4 x 2 cm (6.5 x 1.6 x 0.8 inches)
Weight	90 Grams (3.17 ounces)
Material	Plastic
Power Source	CR2032 Button Cell Batteries (2 required)
Assembly Required	Yes
Age Recommendation	Adult (Manufacturer recommends 18 months and up, but soldering requires adult supervision)

Overall Length



Dimensions of the assembled digital protractor, indicating an overall length of 16.5 cm and width of 6.2 cm.

9. WARRANTY AND SUPPORT

For any issues or questions regarding your PEMENOL Digital Protractor Soldering Kit, please refer to the seller's return policy or contact the manufacturer directly. As a DIY kit, the functionality often depends on the quality of assembly. Ensure all soldering is done correctly for optimal performance.

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