ElecGear EL4

ElecGear EL4 Replacement Analog Joystick and Drift Fix PCB for Xbox Controllers

Instruction Manual

1. Introduction

This manual provides detailed instructions for the installation and use of the ElecGear EL4 Replacement Analog Joystick and Drift Fix PCB. This component is designed to restore precise control to your compatible Xbox controllers by replacing worn or faulty analog stick modules, effectively addressing issues such as stick drift, dead zones, and unresponsive movement. Please read these instructions carefully before proceeding with any repairs.

2. Product Overview

The ElecGear EL4 is a high-quality replacement analog joystick module manufactured by ALPS, featuring 10K ohm trimmer potentiometers. It is specifically designed to match the specifications of original equipment manufacturer (OEM) parts, ensuring optimal performance and longevity for your controller. The module includes a light gray bottom plate and a 14-prong structure.

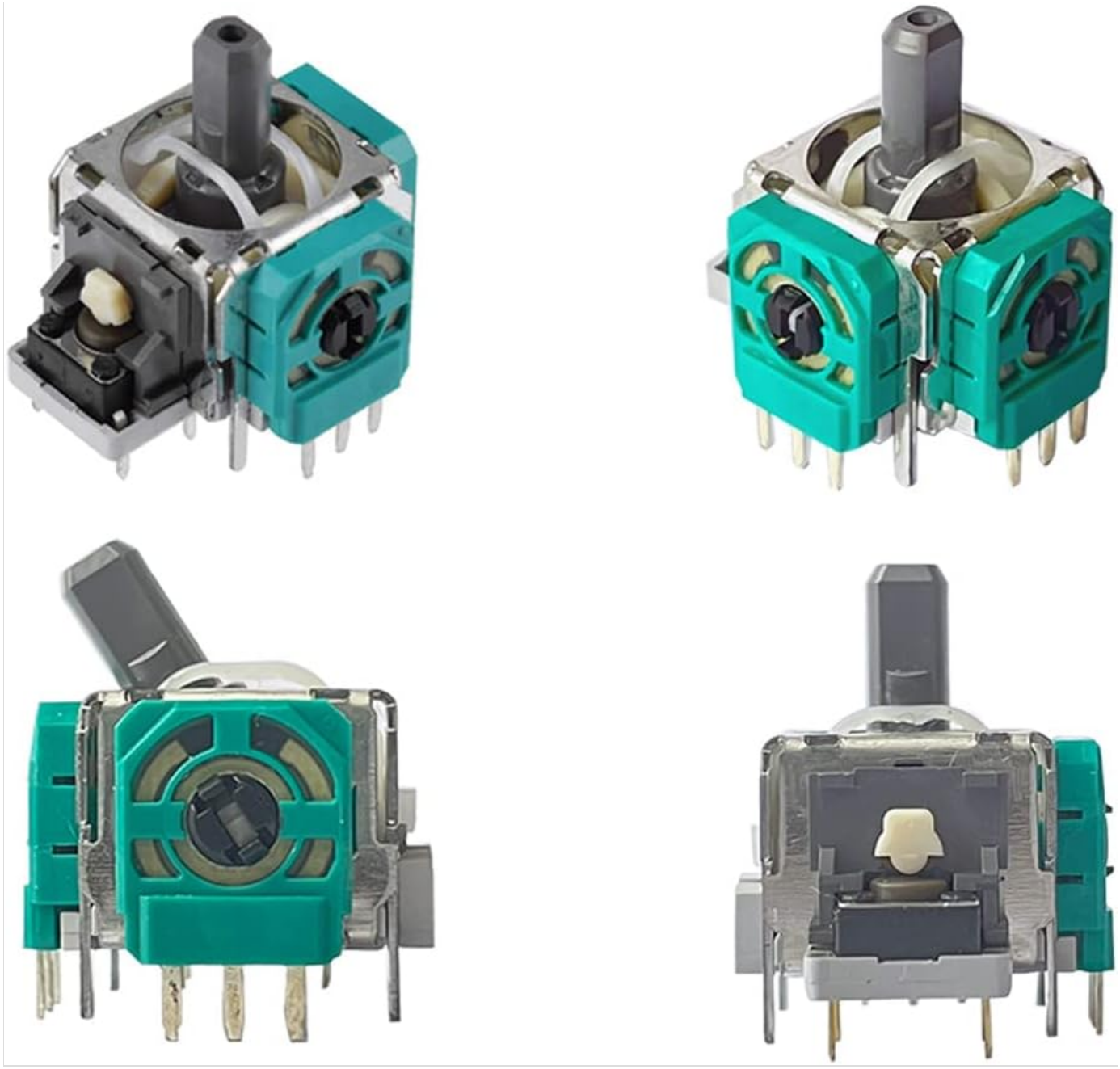

Figure 1: Various perspectives of the ElecGear replacement analog joystick module.

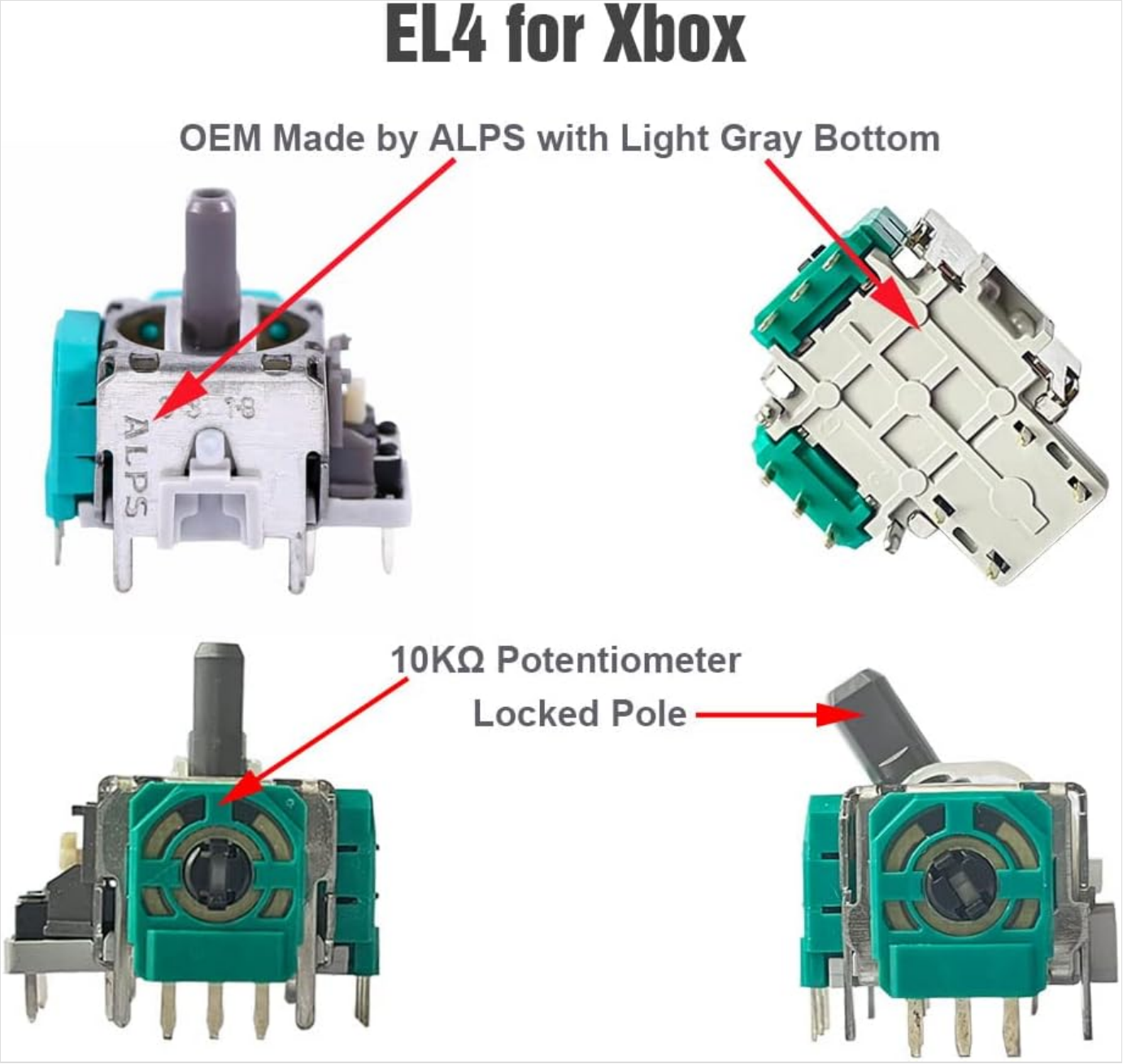

Figure 2: Specific features of the EL4 joystick, highlighting its ALPS origin, light gray bottom, and 10KΩ potentiometer.

3. Compatibility

The EL4 replacement analog joystick is compatible with the following Xbox wireless controllers:

- Xbox One
- Xbox One S
- Xbox One X
- Xbox Elite Series 1
- Xbox Series S|X controllers

Note: The EL4 model is **not** compatible with older Xbox 360 controllers. While it shares a 14-prong structure with some PS4 versions, it is specifically designed for Xbox controllers. Ensure you select the correct model for your controller type.

ElecGear Joystick Index

Model Num.	Made by	Picture	Potentiometer	Features	Interchangeable	Used in Controllers
EL1	ALPS		10Kohm	Blue Bottom Gray side plastic	EL2	PS4 DualShock Razer Raiju Ultimate Scuf
EL2	FU		10Kohm	Labeled 103 FU Orange Sensor	EL1	PS4 DualShock Some PS3
EL3	ALPS		10Kohm	Dark Gray Bottom Two sticks into PCB Locks in 3 directions		Nintendo Switch Pro 8Bitdo SNES Some PS3
EL4	ALPS		10Kohm	Light Gray Bottom		Xbox One, One S|X Xbox Series S|X Elite Series 1
EL5	ALPS		10Kohm	Fixing Thread Tactile Button Pole		Xbox Elite 2
EL6	ALPS		2.1Kohm	Green or Black side plastic	EL7	PS5 DualSense Some PS4 DualShock
EL7	FU		2.3Kohm	Labeled 2K3 FU Orange Sensor	EL6	PS5 DualSense

Figure 3: ElecGear Joystick Index, detailing compatibility across various models.

4. When to Replace

Consider replacing your analog joystick if your controller exhibits any of the following symptoms:

- **Drifting:** Unintended movement or input without physical interaction.
- **Creeping/Stuttering:** Inconsistent or jerky movement.
- **Blind Spot/Dead Spot/Dead Zone:** Areas of the joystick's range where input is not registered.
- **No Reaction:** Complete lack of response when the joystick is moved or clicked.
- **Failure to Center:** The joystick does not return to its neutral position after release.

These issues are typically caused by wear and tear on the internal components of the joystick module over time.

5. Installation Guide

Replacing the analog joystick module requires soldering skills and appropriate tools. If you are not experienced with soldering, it is

recommended to seek professional assistance or consider replacing only the potentiometers if they are the sole cause of the issue.

Required Tools (Not Included):

- Soldering Iron
- Solder Wire
- Solder Wick or Solder Pump
- Small Phillips Head Screwdriver
- Prying Tools (plastic spudgers recommended)
- Tweezers

General Installation Steps:

1. **Disassemble the Controller:** Carefully open your Xbox controller using appropriate tools. Refer to online guides or videos specific to your controller model for detailed disassembly instructions.
2. **Locate the Joystick Module:** Identify the analog joystick module on the controller's printed circuit board (PCB).
3. **De-solder the Old Module:** With caution, de-solder all 14 pins connecting the old joystick module to the PCB. This step requires precision to avoid damaging the PCB traces. Using solder wick or a solder pump can help remove excess solder.
4. **Clean the PCB:** Ensure all solder pads are clean and free of old solder before installing the new module.
5. **Install the New Module:** Carefully align the new ElecGear EL4 joystick module with the corresponding pads on the PCB. Ensure it sits flush against the board.
6. **Solder the New Module:** Solder each of the 14 pins securely to the PCB. Verify that all connections are solid and there are no solder bridges between pins.
7. **Reassemble the Controller:** Carefully reassemble your controller, ensuring all components are correctly seated and connected.
8. **Test Functionality:** After reassembly, test the controller's functionality, including joystick movement and button presses, to confirm the repair was successful.

Important: The module has 14 prongs. De-soldering and soldering the entire module requires significant skill. For most joystick problems, replacing only the potentiometers (the smaller components on the sides of the joystick) might be sufficient and less complex. If you are replacing the entire module, ensure it is seated perfectly flush to the circuit board to prevent sensitivity issues or incorrect functionality.

6. Drift Correction (Additional Resistors)

Even new analog sensors may not be perfectly balanced, and complex moving mechanisms combined with daily use can lead to minor drifting. Standard controller calibration settings may not always resolve these issues completely. This product includes 10 correction resistors to address potential drift at a hardware level.

Using Correction Resistors:

If you experience minor drift after installation, you can solder one or two of the provided tiny resistors in parallel onto the potentiometer that corresponds to the drifting axis. The resistor should be placed on the side of the potentiometer opposite to the direction of the drift. This adjustment can help correct 3 to 5 degrees of drift. This is an advanced modification and requires precise soldering.

7. Troubleshooting

- **Joystick Not Functioning or Incorrectly:**
    - Verify all 14 pins are properly soldered and there are no cold joints or solder bridges.

- Ensure the joystick module is seated flush against the PCB. An uneven installation can cause sensitivity issues or incorrect axis readings.
- Check for any damage to the PCB traces during the de-soldering process.

- **Persistent Drift:**
  - Attempt to recalibrate the controller through your console's or PC's settings.
  - If calibration does not resolve the issue, consider using the included correction resistors as described in Section 6.
- **Difficulty with Disassembly/Assembly:**
  - Refer to online video tutorials specific to your controller model for visual guidance.
  - Ensure all screws are removed and plastic clips are carefully disengaged to prevent damage.

8. Specifications

Model Number	EL4
Manufacturer	ALPS (ElecGear)
Potentiometer Value	10K ohm
Compatibility	Xbox One, Xbox One S, Xbox One X, Xbox Elite Series 1, Xbox Series S|X controllers
Structure	14-prong module with light gray bottom plate
Included	4x EL4 Analog Joysticks, 10x Correction Resistors

9. Warranty and Support

For warranty information or technical support regarding your ElecGear EL4 replacement joystick, please contact ElecGear customer service directly through their official website or the platform where the product was purchased. Ensure you have your purchase details available when contacting support.

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