

POPPER

Support & Maintenance

Beverage Promotional Robot



Maintenance & Troubleshooting

To ensure Popper performs reliably and safely in live environments, operators must follow routine maintenance practices and know how to respond to common technical issues. This section outlines actionable checks, error handling, and system-level recovery methods.

1.1 Daily Maintenance Checklist

Perform the following checks at the **start and end of each operational day**:

Functionality	Description
Battery Level Check	Ensure Popper is charged to at least 60% before peak hours. Auto-dock if battery is below 20%.
Screen Inspection	Confirm the ad panel is on, responsive, and showing the correct content.
LiDAR & Sensor Clean-Up	Wipe front and side LiDAR sensors gently with a microfiber cloth. Dust may affect navigation
Caster Wheel Check	Rotate the wheels to check for any hair, dirt, or debris that may cause misalignment.
Network Reconnection	If using server mode, verify that the robot is connected to Wi-Fi and DMS.
Error Code Display	Ensure no error codes are flashing on the controller panel.
Compartment Sanitation	Clean the beverage compartment using a food-safe surface disinfectant before each session.
Suspension Check	Verify the independent suspension system moves freely and shows no signs of damage.

Note: Log these checks in a maintenance sheet if used in multi-shift environments.

1.2 Common Errors and Solutions

Popper includes built-in error prompts on its controller panel and screen. Below are the most frequently encountered errors and how to resolve them.

Error: "Navigation Failure"

Cause:

- Route point not reachable
- Reboot Popper and retry the route.
- If error persists, recalibrate the affected point.

Solution:

- Clear obstacles from the route
 - Reboot Popper and retry the route
 - If error persists, recalibrate the affected point
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Error: "Charging Failed"

Cause:

- Charging station misaligned
- Charging port or base pin not contacting

Solution:

- Manually push Popper 5–10 cm forward/backward on the dock
 - Check for dust or dirt on metal contacts
 - Restart charging module from the controller panel
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Error: "Motor Overload / Stall Detected"

Cause:

- Compartment overloaded
 - wheel obstruction on uneven surface.
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Solution:

- Reduce load in the beverage compartment
 - Move Popper to an even surface
 - Restart and monitor for repeated alerts
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Error: “Panel Not Connected” (Ad Display)

Cause:

- Disconnection from AdRemote
- Wi-Fi failure in server mode

Solution:

- Reconnect using pairing QR code
 - For server deployments, verify Wi-Fi and server login
 - If still offline, restart panel manually
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Error: “Sensor Blocked”

Cause:

- LiDAR or obstacle sensor dirty or obstructed

Solution:

- Clean sensors gently with microfiber cloth
 - Avoid direct light/glare on sensors
 - Restart if issue persists
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1.3 Repositioning and Recalibration

If Popper loses orientation, drifts off-route, or fails to return to a known point, follow this guide to **reposition and recalibrate** the system safely.

When to Recalibrate:

- After a major collision or physical relocation
- When Popper fails to align with route points or charging dock.
- If “Position Lost” or “Unable to Navigate” errors appear frequently

Step-by-Step: Repositioning Popper

01) Power OFF Popper.

Hold the power button until the screen turns off and the lights dim.

02) Physically Move Robot to a Known Position.

Place it in front of a mapped reference point (like a dock or labeled stop).

03) Power ON and Observe Screen.

Wait for the system to boot and check if the map re-aligns automatically.

If the system recognizes its position, you're done. If not, proceed to recalibration.

- Tips:**
- Use tag-based recalibration over manual if available
 - it is faster and more precise. Always save progress before restarting map mode.
 - Avoid recalibrating near reflective floors or heavy glass.

1.4 System Updates and Recovery

To ensure stability, compatibility, and access to new features, Popper's software must be kept up to date. This section explains how to perform updates, recover the system in case of failure, and reset core modules.

1.4.1 System Update (OTA)

OTA = Over-the-Air Update (no cable needed). Updates may include performance enhancements, bug fixes, or new operation modes.

Steps:

- 01)** Connect Popper to a **stable Wi-Fi network**.
- 02)** Navigate to the **Dashboard Panel → Settings → System**.
- 03)** Tap **“Check for Updates”**.
- 04)** If an update is available, tap **“Download & Install”**.
- 05)** Wait for reboot. Do **not power off** during the process.

Updates may include performance enhancements, bug fixes, or new operation modes.

1.4.2 Recovery from System Failure

If the panel is stuck, unresponsive, or looping:

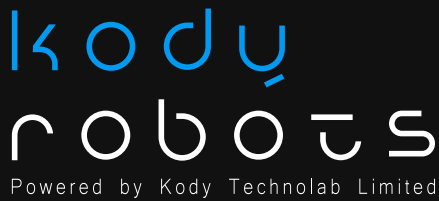
- 01) Hard Reset:**
Hold the power button for 10+ seconds until shutdown, then power on again.
- 02) Safe Boot Mode (Advanced):**
From the controller panel, hold **“Power + Back”** buttons simultaneously for **15 seconds** to enter Safe Boot.
- 03) Restore Last Known Stable Version:**
In Safe Boot Mode, select **“Rollback System”** to restore the previous version (requires last version backup to be enabled).


1.4.3 Factory Reset (Use with Caution)

Caution: Only use this when instructed by the Falcon Tech support team. Factory reset will erase all maps, routes, schedules, dashboard settings, and ad panel content and pairings.


How to Reset:

- From Dashboard → Admin Settings
- Tap **“Factory Reset”**
- Confirm with password and wait for reboot



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