

How to ground the electrical box during assembly



Overview

How To Ground A Circuit Breaker Box Safely: A Step-by-Step DIY Guide However, for experienced DIYers, this guide provides a detailed, step-by-step approach.

Key Takeaways

To ground a metal electrical box, connect a grounding conductor from the box to the main panel's ground bus using a green grounding screw or clip, ensuring a continuous low-resistance path for fault current. Step-by-Step Guide

1. Turn Off Power Before starting, shut off power at the circuit breaker to prevent electrical shock while working on the box . 2. Gather Materials You will need a green hexagonal grounding screw, a grounding pigtail (bare or green-insulated copper wire, 6-8 inches long, same gauge as the circuit's ground), and optionally a grounding clip or lug if the box lacks a threaded hole . 3. Identify the Grounding Point on the Box Most metal boxes have a designated threaded hole for the grounding screw. If not, use a listed grounding clip or lug to ensure a secure connection . 4. Attach the Grounding Conductor

- Insert the green grounding screw into the threaded hole and tighten it so it bites into the bare metal.



- Connect the grounding pigtail to the screw using a terminal loop. This ensures the box remains grounded even if devices are removed .

5. Connect to the Main Panel
Run the other end of the grounding pigtail to the main electrical panel and attach it to the ground bus bar, which is connected to the grounding electrode system (ground rod, buried metal water pipe, or concrete-encased electrode), .

6. Verify Continuity
Ensure the grounding path is continuous and secure. A multimeter can be used to check for low resistance between the box and the panel ground.

7. Complete Assembly
Once grounded, you can safely install devices in the box. Proper grounding ensures that any fault current will trip the circuit breaker, preventing shock or fire hazards .

Key Points

- Grounding provides a low-resistance path for stray electricity, protecting people and equipment.
- All metal, non-current-carrying parts must be grounded according to NEC requirements.
- Using a green screw or listed clip ensures a reliable electrical bond to the box.
- The grounding system should connect to the main grounding electrode to safely dissipate electricity into the earth . Following these steps ensures your electrical box is safely grounded, compliant with code, and reduces the risk of electrical hazards.

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