# Install copper lugs on distribution boxes

## Overview

Strip to proper length so conductor can be fully inserted. Refer to manufacturer''s instructions for strip length.

## Key Takeaways

Copper lugs in distribution boxes are connected using properly sized compression lugs, cleaned conductors, and approved crimping tools to ensure a secure, low-resistance, and safe electrical connection.Selecting the Right Copper Lug

Choose a copper lug that matches the conductor size and type. Lugs are available for single, multi-stranded, fine, and superfine copper conductors, and their dimensions and markings are standardized according to DIN 46235 and IEC 61238-1 . Ensure the lug is rated for the current and voltage of the distribution system .

Preparing the Conductor
• Strip the insulation from the end of the copper cable to expose the conductor.

• Clean the exposed copper to remove oxidation, dirt, or debris, which can increase resistance and reduce reliability .

• For sector-shaped or multi-stranded conductors, pre-rounding may be required to fit the lug properly .
Crimping the Lug
• Insert the prepared conductor fully into the lug barrel.

• Use a compression tool approved for the lug type and conductor size. Battery-operated or hydraulic compression tools are commonly used for distribution boxes .

• Follow the manufacturer's die code or indent specifications to ensure proper cold deformation of the lug . Multiple indents may be required, starting from the inner portion of the lug and moving outward .

• Verify that the crimp is tight and secure; a properly crimped lug should not allow the conductor to pull out.
Installing the Lug in the Distribution Box
• Position the lug on the busbar or terminal stud.

• Use the correct bolt or screw torque as specified by the distribution box manufacturer to avoid loose connections or damage.

• If required, apply insulating covers to prevent accidental contact and enhance safety .
Standards and Safety
• Follow IEC 61238-1 for compression connectors and IEC 60228 for conductor classification .

• Avoid using connectors not approved for underground or distribution box applications, such as “Insulinks” for service connections .

• Ensure all connections are mechanically stable to withstand vibration and environmental stress, minimizing the risk of overheating or electrical faults . By adhering to these steps, copper lugs in distribution boxes will provide reliable, low-resistance connections that maintain system efficiency and safety.

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