Standard for knockout holes in distribution boxes



Overview

Electrical Box Knockout Sizes | Guide for Your InstallationLearn the different electrical box knockout sizes and how to choose the right one for your insta.

Key Takeaways

Knockout holes in distribution boxes are standardized by trade size, typically ranging from ½ inch to 4 inches, with specifications guided by UL standards and industry practices.

Definition and Purpose

A knockout is a pre-scored or partially punched section in an electrical enclosure or distribution box that can be removed to create an opening for wiring or conduit. Knockouts allow flexibility in installation while maintaining the structural integrity of the box and ensuring safety against electrical hazards.

Standard Sizes

Knockouts are generally sized according to trade sizes, which correspond to the internal diameter of the conduit rather than the physical hole dimension. Common sizes include:½ inch and ¾ inch: Used for residential wiring and smaller cables. 1 inch: Suitable for medium-sized wires and conduits, compatible with ¾” or 1” conduit pipes.

2 inches: Used for larger wiring systems, often in commercial or high-voltage applications. Up to 4 inches: Typically for industrial high-voltage systems.

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U

L and Industry StandardsUL standards specify that knockouts must maintain structural integrity, light-tightness, and proper tab retention. Tabs are small uncut areas that keep the knockout attached until removal. The size, number, and placement of tabs are critical for ease of removal and safety.

Knockouts must also allow for proper sealing when conduit or cable glands are installed, ensuring compliance with NEMA or IP ratings for water and dust protection.

Material and Removal Considerations

Knockouts are commonly found in sheet metal or polycarbonate enclosures. Removal can be done using a knockout punch, hammer, or screwdriver, depending on material thickness and knockout size. Proper removal ensures that the edges are smooth and safe for wiring, preventing damage to cables or insulation.

Practical Guidelines

Match knockout size to conduit and wire gauge to ensure secure installation. Consider future expansion by selecting slightly larger knockouts if additional wiring may be needed. Ensure compliance with UL and NEMA/IP standards for safety and environmental protection.

By following these standards and guidelines, distribution boxes can safely accommodate wiring and conduit while maintaining compliance with electrical codes and industry best practices.

Article Content

Electrical Box Knockout Sizes | Guide for Your Installation

Learn the different electrical box knockout sizes and how to choose the right one for your installation. Get expert guidance for safe and accurate wiring.

How To Choose The Right Knockout Configuration

Choosing the right knockout configuration is not only about counting holes on a box. It affects conduit routing, wiring convenience, installation efficiency, future expansion, and even

1 National Electrical

In accordance with those instructions, remove the center knockout and each succeeding ring as separate steps in the inspection procedure. After each knockout section is removed, the remaining

Electrical Knockout Dimensions: Standard Sizes Explained

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Find accurate electrical knockout dimensions for conduit sizing. Learn trade size vs. actual hole size, key standards, and how to choose the right fit. Click to verify your project''s specs now.

Electrical Knockout Sizes: Industry Standards and Tips

A small holding tab (or multiple tabs depending on size of knockout) remains in the sheet uncut. These tabs are large enough to hold the slug in the sheet, but small enough to allow removal

KNOCKOUT DIMENSIONS

KNOCKOUT DIMENSIONS N.P.T. Hub Size Knockout Hole Recommended (Min to Max/ Inches) 1/4" .540 to .570 3/8" .671 to .701 1/2" .859 to .906 3/4" 1.094 to 1.141 1" 1.359 to 1.406 1 1/

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These dimensions are for knockout diameters for single or concentric types only and exclude any projection of breakout ears or tabs.

Adding additional knockouts to Panel

Distribution and Control, Panel, Additional Knockouts From a design standpoint, engineering says that we provide adequate knockouts per UL67. Making additional holes would not void UL on the panel. It

Knockout and Clearance Diameter Machine Terminal Boxes NEMA

Knockout and Clearance Hole Diameter Machine Terminal Boxes per NEMA. The NEMA diameter of the knockout, excluding any projection of breakout ears or tabs, and the clearance hole in the terminal

Standard sizes for the various round electrical panel knockouts

These standardized sizes ensure compatibility between conduits, connectors, and electrical boxes. For example: A 1/2″ trade size conduit or connector requires a 7/8″ (22.5mm) knockout or hole. A 1″ trade

Missing Knockouts

One of the most common Truth-in-Housing repair items is an unfilled opening in an electrical box or panelboard. If you walk through the garage or

OSHA Training Toolbox Talk: Basic Electrical Safety Avoiding Open Holes ...

ning Toolbox Talk: Basic Electrical Safety – Avoiding Open Holes in Electrical Boxes & P [Reference 1910 Subpart S / 1926 Subpart K] r missing cover on an electri al receptacle or junction box. Or

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Metal Knockouts 101

This TriparTech provides an overview of knockout requirements in luminaires, which are governed by UL1598, Standard for Safety for Luminaires.

Grounding and Bonding with Concentric and Eccentric Knockouts

Bonding for over 250 volts to ground For bonding circuits over 250 volts to ground, NEC Section 250.97 is applicable, and by exception, allows concentric and eccentric knockouts to be used without

Standard sizes for the various round electrical panel knockouts

This standardization allows electricians to use the same knockout sizes for both conduits and their corresponding connectors, simplifying installation and ensuring proper fit. When working with

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SAFETY IS AN INVESTMENT IN YOUR FUTURE. Everything starts with Safety at IEC Avoiding Open Holes in Electrical Boxes & Panels Toolbox Talk # 5036 You may notice a broken, loose, or missing

What are the standard electrical knockout sizes used in ...

The standard electrical knockout sizes used in electrical installations are typically 1/2 inch, 3/4 inch, and 1 inch. These sizes refer to the diameter of the hole that is punched or drilled in ...

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INTRODUCTION: The Joint Sections Committee on Knockout Diameters and Fitting Dimensions reviewed the existing industry practices and standards for knockout diameters and conduit fittings,

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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