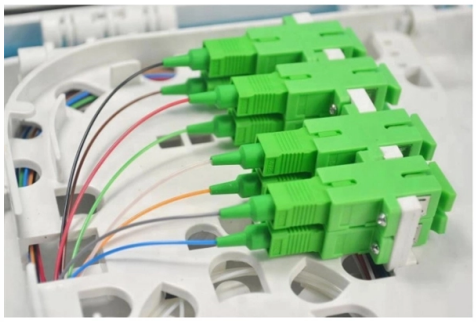
Methods for bending the casing of a distribution box



Overview

This guide explains how to bend a box with a press brake, which tooling to use, correct bend sequence, common mistakes to avoid, and how modern CNC press brakes improve precision and repeatability.

Key Takeaways

The casing of a distribution box is typically bent using a press brake with proper tooling, bend sequence, and material considerations to ensure precision and avoid collisions.

Press Brake Bending

A press brake is the most common tool for bending sheet metal into distribution box casings. The process involves: Flat Pattern Layout: Start with a correctly calculated flat pattern of the box. This ensures that the final bends form a square, accurate enclosure without misalignment or gaps.

Tooling Selection: Use gooseneck punches or specialized box tooling to prevent the flanges from colliding with the punch during final bends. Tooling affects bend radius, angle accuracy, and clearance. Bend Sequence: Follow a proper bend order to avoid interference.

Typically, start with the inner flanges and progress outward, ensuring the part remains square and can be loaded into the press brake for subsequent bends. Angle Control and Springback: Different metals react differently.

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Modern CN

C press brakes with real-time angle monitoring help maintain consistent angles and reduce scrap.

Automated Production Lines

For high-volume production, automated sheet metal lines can bend casings and doors for distribution boxes efficiently. These systems: Handle sheet metal up to 2 mm thick. Produce casings with fully closed corners from a single piece.

Integrate punching and bending operations automatically, adding fixing components and connections. Achieve high output rates while maintaining precision and repeatability.

Material Considerations

Sheet Thickness: Most distribution box casings are made from 1–2 mm steel or aluminum sheets. Bend Radius: Ensure the bend radius is compatible with the material to prevent cracking or deformation. Stress Management: Avoid excessive force that could distort the box or compromise structural integrity.

Summary

To bend a distribution box casing effectively: Use a press brake with appropriate tooling. Plan the flat pattern and bend sequence carefully. Consider material properties and springback.

For large-scale production, automated bending lines provide precision, speed, and consistent quality. These methods ensure that the final casing is accurate, durable, and ready for assembly with electrical components.

Article Content

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