

Manufacturing of Trough-Type Cable Trays



Overview

Cablofil steel trough trays provide the strength and security required when then need to limit cable access is of primary importance.

Key Takeaways

Trough-shaped cable trays are produced using automated roll forming, punching, and cutting systems that ensure precise dimensions, structural strength, and efficient mass production.Overview of the Production Process



The production of trough-shaped cable trays involves a continuous, automated process that transforms flat metal coils into finished trays suitable for electrical cable management. The main steps include:

1. **Material Feeding and Straightening** Metal coils, such as galvanized steel, stainless steel, or aluminum, are loaded onto an unwinder and feeder system. A precision straightener ensures the metal strip is flat and properly aligned for forming, while servo motors control high-accuracy feeding to maintain continuous operation and consistent tray dimensions.
2. **Roll Forming** The core of the production line is the roll forming section, where the flat metal gradually passes through multiple forming stations. Each station bends the metal incrementally to create the trough profile with smooth edges and uniform dimensions. This ensures structural integrity and precise tray geometry.
3. **Punching and Ventilation Holes** Integrated CNC or hydraulic punching units create holes in the tray for ventilation, heat dissipation, and cable management. The punching design considers hole diameter, spacing, and array patterns to balance mechanical strength with thermal performance, reducing cable temperature rise by 15–20% while maintaining load capacity.
4. **Cutting and Sizing** After forming and punching, the trays are cut to the required lengths using synchronized cutting modules. This step ensures smooth edges and precise dimensions, ready for installation in industrial, commercial, or infrastructure projects.
5. **Automation and Control** Modern production lines are equipped with PLC control systems that allow operators to set parameters, monitor production, and perform fault diagnostics. This automation reduces labor intensity, improves efficiency, and maintains forming accuracy within ± 0.2 mm.

Customization and Material Flexibility

Trough cable tray production lines can handle a wide range of widths (50–1200 mm), heights (20–150 mm), and thicknesses (0.4–3 mm). They can process various materials, including galvanized steel, stainless steel, pre-painted steel, and aluminum, allowing manufacturers to produce corrosion-resistant and durable trays for different applications.

Applications

The finished trough-shaped cable trays are widely used in power plants, factories, office buildings, and infrastructure projects. Their design supports large quantities of electrical or data cables, provides ventilation, and ensures long-term durability.

Advantages of Automated Production

- High precision and consistent quality
- Reduced labor costs and increased efficiency
- Flexibility for different tray sizes and materials
- Integrated punching and cutting for functional and structural optimization

- Scalable for mass production In summary, the production of trough-shaped cable trays relies on advanced roll forming machines with integrated punching and cutting systems, controlled by intelligent PLC systems, to deliver high-quality, customizable, and efficient cable management solutions.

Article Content

Trough Trays | Cable Tray and Reels | Wire and Cable Management

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Cable Tray Institute

Fabricated in numerous styles (wiremesh, ladder, ventilated trough, channel, and solid-bottom) and sizes, cable tray provides the

Cable Management Solutions

T&B Cable Tray offers cable tray systems fabricated from corrosion-resistant steel, stainless steel and aluminum alloys along with

Trough Cable Trays Supply and Manufacturing

Manufactured according to IEC 61357 standards and processed with CNC machining, it delivers exceptional load capacity (1200N)

Cable Tray Manufacturing Machine for Trough Trays

Efficient cable tray manufacturing machine for trough type trays. Automatic forming, punching, and cutting with high precision, ideal

Cable Trays Manufacturers and Suppliers in the USA and Canada

Custom manufacturer of cable trays made from aluminum, fiberglass reinforced plastic (FRP), galvanized and stainless

Cable Troughs Manufacturers and Suppliers in the USA and Canada

Custom manufacturer of cable & wire troughs. Other products such as frames, handles, guides, cable rings, shelves,

Trough Type FRP Cable Trays: Complete Guide

Comprehensive guide to Trough Type FRP Cable Trays - design, applications, benefits, and selection. Expert insights

Solid Bottom Cable Tray System | MonoSystems

The solid bottom trough is a versatile cable tray system available in a broad range of NEMA and CSA load classes.

Cable Troughs | McMaster-Carr

Choose from our selection of cable troughs, including raceway, wire duct, and more. Same and Next Day Delivery.

Wireway & Trough

Explore the types of cable trays, their advantages, applications, and standard sizes. Learn how they improve cable

Trough-Type Cable Tray Uses and Benefits Guide

Learn how trough-type cable tray improves cable protection, airflow, and organization in modern industrial electrical

Trough Type Cable Trays, FRP Cable Trays, Manufacturer, Pune, India

Trough Type FRP Cable Trays, Fittings And Accessories, FRP Cable Tray Manufacturer, Exporter, Supplier, Pune, Maharashtra,

Cable trays manufacturers in bangalore|perforated cable trays manufacturers

Fixotech is one of the leading manufacturers of Cable Trays, Perforated cable trays, Ladder Type Cable Trays, Solid Bottom Cable

Trough Type Cable Tray for Maximum Cable Protection

A trough type cable tray is a channel-shaped cable support system formed from a single sheet of steel. The structure

Cable Trough | GRC GRP Concrete Cable Troughs | Network Rail PADS

Cable trough provides both a high security shallow trench for cable protection and management with support for post elevated cable

Cable Tray Roll Forming Machine

Perforated Type Cable Tray Machine Perforated cable trays feature uniform holes that offer effective ventilation and protection for

Cable Trough | Safe & Secure Cable Protection

High stability concrete or composite cable trough systems for secure protection of cables and utilities within

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