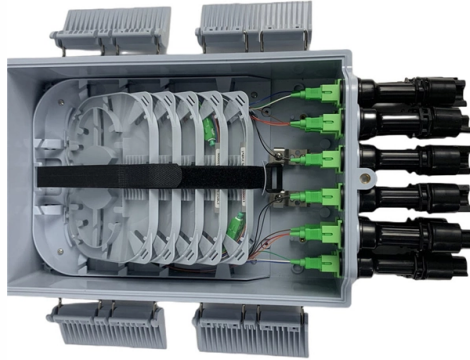


Lc Fiber Optic Patch Cord Making



Overview

This comprehensive guide will walk you through the entire process of making fiber optic patch cords.

Key Takeaways

LC fiber optic patch cords are made through a precise process involving cable preparation, connector assembly, polishing, and rigorous testing to ensure high optical performance.

Step 1: Cable Preparation

The process begins with cutting the optical fiber cable to the required length, typically with an automated cutting machine to ensure accuracy and consistency . For short patch cords (under 5 meters), the cable is cut into pigtails, while longer lengths are handled as full cables. The outer jacket is stripped carefully to expose the bare fiber, usually 12–15 mm, without damaging the 125 μm cladding . The fiber is then cleaned with lint-free wipes and 99.9%+ isopropyl alcohol to remove any contaminants .

Step 2: Pre-Assembly

Before termination, connector components such as the boot, strain-relief parts, and polarity markers are slid onto the cable in the correct order . This ensures proper alignment and mechanical stability during later assembly.

Step 3: Ferrule Insertion and Epoxy Application



The bare fiber is inserted into the LC ferrule, and epoxy is applied to secure it. Automated glue dispensing machines are often used in mass production to ensure the correct amount of epoxy, avoiding overflow or insufficient bonding . Proper epoxy application is critical to prevent micro-bubbles, which can increase insertion loss .

Step 4: Connector Assembly and Crimping

Once the ferrule is secured, the connector housing is assembled, and the cable is crimped to provide mechanical stability . This step ensures the fiber remains aligned and protected under tension or bending.

Step 5: Polishing

The ferrule end-face is polished to achieve low insertion loss and high return loss. LC connectors typically use PC, UPC, or APC polish types, depending on the application . Polishing is often done in multiple steps, including coarse and fine polishing, to achieve a smooth, spherical, or angled surface as required .

Step 6: Testing and Quality Control

Each patch cord undergoes end-face inspection and optical performance testing, including insertion loss (IL) and return loss (RL) measurements . Any cords failing to meet specifications are reworked. Proper testing ensures the patch cord meets industry standards and maintains reliable network performance.

Step 7: Labeling and Packaging

Finally, the patch cords are labeled according to order specifications and packaged for delivery . This includes marking fiber type, length, and connector type to ensure traceability and correct deployment.

Key Considerations for LC Patch Cords

- Fiber Type: Single-mode or multimode fibers affect performance and application .
- Connector Size: LC uses a 1.25 mm ferrule, allowing high-density deployment .
- Polish Type: PC, UPC, or APC affects return loss and signal reflection .
- Cleanliness: Any contamination during assembly can significantly degrade performance .
- Mechanical Protection: Aramid yarn and outer jackets provide tensile strength and durability . By following these steps with precision and attention to detail, LC fiber optic patch cords can achieve high optical performance, low insertion loss, and long-term reliability in data centers, telecom networks, and industrial applications.

Article Content

How to Make a Fiber Optic Patch Cord Step by Step

Learn how to make a fiber optic patch cord step by step, from preparation to testing, for reliable high-performance

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Learn about SC, LC, FC, and ST fiber optic patch cords, their uses in FTTH, telecom, and data centers, and how to

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What Is Fiber Patch Cord? Singlemode/Multimode,LC SC FC,UPC Vs

Ultimate Fiber Optic Patch Cord Guide: Classification, Connector Types, End Faces, Industry Applications & Purchase

How To Make Optical Fiber Patch Cord

Optical fiber patch cords are critical components in fiber optic communication systems. They are used to connect

Fiber Optic Patch Cord Types

This post provides a introduction to fiber optic patch cord types, and several popular Gcabling optical patch cables.

Fiber Optic Patch Cord LC Series

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