Detailed Production Process Diagram of Fiber Optic Patch Cords

Article Overview

Fiber optic patch cord production involves precise steps: cable preparation, connector assembly, curing, polishing, and rigorous testing to ensure high-quality optical performance.

1. Preparation of Tools and Materials

Before production, gather essential tools and consumables: automatic cable cutting machine, scissors, tape measure, cable ties, epoxy, ferrules, connector housings, strain relief boots, and cleaning alcohol . Select the appropriate fiber type (single-mode or multi-mode), connector type (SC, LC, FC, MTP), and jacket material (PVC, LSZH) based on application requirements .

2. Cable Cutting and Measurement

o Verify the optical cable specifications against the order requirements.
o Measure and cut the cable to the required length, adding a reserved length for handling and connector assembly.
o Roll the cut cable into a circle and secure it with a binding wire to prevent damage .

3. Cable Stripping

o Strip the outer jacket (typically 3.0mm, 2.0mm, or 0.9mm) to expose the fiber.
o Remove the buffer coating carefully, leaving minimal bare fiber exposed.
o Cut Kevlar strands to the required length for reinforcement .

4. Connector Assembly

o Mix epoxy (e.g., 353ND) with a solid catalyst in a 10:1 ratio and de-air in a vacuum pump .
o Inject epoxy into the ferrule and insert the cleaned fiber, spinning slightly to distribute the epoxy evenly.
o Cure the ferrule in an oven (typically 100?C for 20 minutes) to secure the fiber .
o Assemble the connector housing, crimping ring, backpost ring, spring, and strain relief boot in the correct sequence .

5. Polishing

o Polish the ferrule end-face using automatic polishing machines.
o Clean the polished surface with ultrasonic equipment to remove dust and residues .

6. Inspection and Testing

o Inspect the ferrule end-face under a 400x microscope for scratches, contamination, or defects.
o Perform insertion loss (IL) and return loss (RL) testing using calibrated equipment to ensure optical performance meets standards.
o For MPO/MTP patch cords, conduct additional specific tests to verify multi-fiber alignment and performance .

7. Final Packaging

o Label the patch cord according to order specifications.
o Coil and secure the finished patch cord for shipment, ensuring no stress is applied to the fiber. This workflow ensures that each fiber optic patch cord meets high-performance standards for telecommunications and data transmission networks, minimizing signal loss and maximizing durability .

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

Fiber Patch Cords have a widely application. Where the need for the optical fiber connection, where you need fiber optic patch cords.

A fiber patch cord and pigtail production line typically involves several key processes to ensure high-quality output.

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

Explore the complete manufacturing and testing process of fiber optic patch cords, including

In this video, we walk you through the complete, step-by-step workflow of our standard

The treatment of glass for the draw process provides insight into other processes in the manufacture of glass and

After all the testing, the patch cords would be packed according to customers" needs. Usually, each patch cord would

Figure 10.3 shows a picture of the vocal cords, taken with a special optic fiber camera system. During

production of voiced

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Fiber optic patch cords and Pigtails are very important passive fiber optic components in fiber optic networks. There are many

A fiber optic cable consists of five basic components: the core, the cladding, the coating, the strengthening fibers, and

The yarn spinning process involves several key steps to convert raw fibers into strong, fine yarn suitable for textile

The Fiber Optic Connector and Splicing Module was designed to be used as a supplement for the Industrial Fiber Optics Fiber Optic

An optical Fiber Patch Cord, also known as a fiber jumper or patch cable, is a short section of fiber cable that is terminated with

I"m wanting to create documentation for a control fiber optic network. I"m needing symbols for common fiber optic

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