

RIVO MULTITRADE OPTICAL SYSTEMS

How to connect a thick fiber optic fusion splice patch cord



Overview

Learn fiber splicing and winding in 5 steps with pro tips on stripping, cleaving, fusion, and sleeve protection.

Key Takeaways

To connect a thick fiber optic fusion splice patch cord, carefully strip, clean, cleave, fuse, and protect the fiber to ensure minimal signal loss and long-term reliability.

Tools and Materials Needed

- Fiber optic stripper and cable stripper
- Kevlar cutter
- High-precision fiber cleaver
- Fusion splicer
- Fiber cleaning supplies (lint-free wipes, isopropyl alcohol)
- Heat shrink protective sleeves and oven
- Fiber splicing tray or patch panel
- Visual fault locator (VFL) or OTDR for testing

- Safety glasses for eye protection

Step 1: Cable Preparation

- Remove the outer jacket of the fiber optic cable using a cable stripper, exposing the inner fibers.
- Cut and remove strength members (e.g., Kevlar) with a Kevlar cutter.
- Strip the fiber coating carefully to expose the bare fiber, keeping the fiber steady and horizontal to avoid slipping .
- Clean the bare fiber with alcohol-soaked lint-free wipes to remove any residue or adhesive layers .

Step 2: Cleaving the Fiber

- Use a high-precision cleaver to create a smooth, perpendicular end-face on the fiber.
- Avoid angled cuts, cracks, or burrs, as these can increase signal loss .
- Handle the cleaved fiber carefully to prevent contamination or damage.

Step 3: Fusion Splicing

- Insert a protective sleeve onto the fiber before splicing; this will cover the splice after fusion .
- Place the prepared fiber ends into the fusion splicer, aligning them precisely.
- Activate the splicer to fuse the fibers using an electric arc, creating a permanent, low-loss joint .
- Inspect the splice using the splicer's microscope or a VFL to ensure proper alignment and minimal back reflection.

Step 4: Protecting the Splice

- Slide the heat shrink sleeve over the fused joint.
- Use a heat oven or splicer's built-in heater to shrink the sleeve, providing mechanical protection and strain relief .
- Place the protected splice into a splice tray or patch panel, coiling the fiber carefully to avoid sharp bends. Maintain a bending radius at least ten times the fiber diameter, typically no less than 30 mm .

Step 5: Testing

- Use a VFL or OTDR to verify the splice quality and ensure minimal signal loss.
- Document the splice location and test results for future maintenance.

Tips for Thick Fiber Cables

- For multi-fiber or thick patch cords, handle fibers individually and route them carefully to prevent tangling.
- Work in a clean, dust-free environment to avoid contamination.

- Avoid exposing bare fibers to air for extended periods to prevent dust or moisture contamination . By following these steps, you can achieve a reliable, low-loss fusion splice on thick fiber optic patch cords suitable for high-performance network applications .

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