

How to fuse two pigtails in a dual-core cable



Overview

In this video and step by step tutorial, we take you through the basic steps on how to fusion splice pigtails using a fusion splicer.

Key Takeaways

Fusion splicing two pigtails into a double-core cable involves carefully preparing the fibers, aligning them in a fusion splicer, and creating a low-loss, permanent connection. Tools and Materials Needed

- Fusion splicer: Aligns and melts the fiber ends together for a seamless connection .
- Fiber strippers: Remove the outer jacket and coating without damaging the glass core .
- Precision cleaver: Cuts the fiber ends cleanly and perpendicularly .
- Isopropyl alcohol and lint-free wipes: Clean the bare fibers before splicing .
- Heat shrink tubes: Protect the splice after fusion .

Step-by-Step Fusion Splicing Process

- Prepare the Cable Strip back the outer jacket of the double-core cable to expose the two fibers. Carefully remove the aramid strength members and the primary buffer coating using fiber strippers, exposing about 35mm of bare fiber .

- **Clean the Fibers** Wipe the bare fiber ends with isopropyl alcohol using lint-free wipes. The fiber should squeak slightly when clean, indicating it is free of dust and oils .
 - **Cleave the Fibers** Use a precision cleaver to cut the fiber ends cleanly and perpendicularly. Proper cleaving ensures minimal signal loss and a smooth fusion joint .
 - **Insert Fibers into the Fusion Splicer** Place each fiber into the splicer's V-groove or alignment channel. Modern splicers use cameras to align the fiber cores precisely .
 - **Perform the Fusion Splice** Activate the splicer to create an electric arc that melts the fiber ends together. The splicer will automatically align, heat, and fuse the fibers, forming a continuous optical path .
 - **Protect the Splice** Slide a heat shrink tube over the splice and apply heat to secure and protect the joint from mechanical stress .
 - **Test the Connection** Use a fiber tester or optical time-domain reflectometer (OTDR) to verify the splice quality. Check for low insertion loss and minimal reflectance to ensure a reliable connection .
- Safety and Best Practices**
- Work in a clean, dust-free environment to prevent contamination .
 - Handle fibers carefully to avoid bending or breaking the glass cores .
 - Dispose of fiber scraps safely, as they can penetrate skin .
 - Never look directly into a live fiber connector to avoid eye damage . By following these steps, you can successfully fuse two pigtails into a double-core cable, achieving a stable, low-loss optical connection suitable for high-performance data transmission .

Article Content

How Do You Splice Fiber with a Fusion Splicer?

In this video and step by step tutorial, we take you through the basic steps on how to fusion splice pigtails using a fusion splicer.

Fusion Splicing Fiber Optics

Once the fibers are aligned the splicer fires an electric arc between the two ends which melts them immediately and pushes them

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Fusion splicing is a popular method for joining two fiber optic cables together to create a continuous, high-performance connection.

Fusion Splicing Fiber Optics

Fusion Splicing There are several reasons for splicing a fiber cable, these include: • To join two fibers due to a breakage. • To

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