How to use a fiber optic panel fusion splicer



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

Using a fiber optic fusion splicer involves careful preparation, precise alignment, and controlled fusion to create low-loss, durable fiber connections.

Safety and Workspace Preparation

Before starting, ensure safety by wearing high-rated safety goggles and cut-resistant shoes to protect against burns and glass shards from fiber stripping. Dispose of fiber scraps in a dedicated container or vacuum device. Use anti-static wrist straps or mats to prevent static damage to the splicer electronics.

Check that the splicer's battery or AC power is stable, electrodes are in good condition, and all tools are clean and functional.

Fiber Preparation

Strip the Fiber: Remove the protective coating using a fiber stripper appropriate for the fiber diameter (typically 250µm for bare fibers and 900µm for coated fibers),. Apply uniform pressure to avoid microfractures. Clean the Fiber: Wipe the exposed fiber with an IPA-soaked swab to remove oils and debris.

Cleave the Fiber: Use a precision cleaver to create a flat, mirror-like end face. A poor cleave can cause high signal loss or splice failure.

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Splicing Operation

Open the Splicer: Lift the windshields and prepare the V-grooves for fiber placement. Place the Fibers: Insert each fiber into the V-groove with clamps facing up, ensuring the ends are properly aligned. Core Alignment: The splicer uses motors and cameras to align the fiber cores precisely.

Core alignment splicers are recommended for critical installations due to their high precision. Fusion: Activate the splicer to generate an electric arc between electrodes, melting the fiber ends to fuse them together. The splicer monitors the process to ensure minimal signal attenuation.

Splice Protection: Apply a splice sleeve or protective coating to maintain mechanical strength and prevent environmental damage.

Quality Verification

After fusion, the splicer typically inspects the splice using integrated imaging systems to detect faults and measure optical loss. Ensure the splice meets the required specifications before finalizing the installation.

Additional Tips

Maintain a bending radius >30 mm during handling to prevent fiber damage. Use manufacturer-recommended consumables to reduce failure rates. Categorize splicers based on application: Core Alignment, Single Fiber, Ribbon, or Handheld/Portable.

Core alignment splicers provide the highest precision for critical networks. By following these steps, you can achieve high-performance, low-loss fiber optic splices that ensure reliable network operation and long-term durability.

Article Content

How to Splice Fiber Optic Cable – Step-by-Step Fusion

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How Do You Splice Fiber with a Fusion Splicer?

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How To Use A Fusion Splicer

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Learn how to use a Fusion Splicer effectively. Follow step-by-step fiber preparation, splicing, and maintenance tips for low-loss, reliable connections.

6 Steps to Using a Fiber Optic Fusion Splicer

Learn how to use a fiber optic fusion splicer in just a few short, simple steps! One of the favorite tools used by the Bridge Cable Network Cabling team is our Fusion Splicer.

A complete guide to fiber optic fusion splicing from start to finish ...

How fiber optic splicers work, types, what they are used for. Steps to use this equipment and including how to test your fiber splice.

Fiber Optic Fusion Splicing Guide: From Safety to Troubleshooting

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In fiber optic networking, precision and dependability directly impact network performance, uptime, and cost-efficiency. A high-quality fusion splicer

History and Vision of Optical Fiber Fusion Splicing Technology

Sumitomo Electric Industries, Ltd. released the TYPE-3 fixed V-groove optical fiber fusion splicer for multi-mode fibers in 1980. Over the years, optical fiber fusion splicing technology has been making

Go4Fiber Ltd-One Stop Fiber Optic Superstore

Fujikura 99S Core Alignment Fusion Splicer Kit Set for single fiber FSM-99S-GO4KIT-A Availability: *This item cannot ship out of Hong Kong & Macau

How to choose a ribbon fusion splicer

Highlights for TC-600M fusion splicer High precision V-groove High precision V-groove can enable high-precision alignment the both side of ribbon optical fibers, ensure the quality of fusion

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Looking for the best fusion splicer in 2026? Compare COMWAY C10S V2, SUMITOMO TYPE-82C+, JETFIBER H5+, COMWAY A33 & TEKCN TC-400. Expert specs, use cases & buying

Core Alignment Fusion Splicer 100S Kit

Product information page for Fujikura''s new core alignment fusion splicer, 100S Kit. Faster and easier, this cutting-edge optical fiber fusion splicer will change your workplace.

The FOA Reference For Fiber Optics

Virtually all singlemode splices are fusion. Mechanical splicing is used for temporary restoration and for most multimode splicing. Connectors are used for

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An authoritative 2026 guide to the top 15 fiber optic manufacturers — from Corning and Prysmian to Fujikura and LS Cable — with headquarters, tech focus, and flagship products.

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