

What instruments are used for fiber optic cable splicing



Overview

Selecting the right fiber optic splicing tools and kits can be challenging for many fibre optic engineers and installers.

Key Takeaways

The primary instrument for fiber optic cable splicing is a fusion splicer.

A fusion splicer is a specialized device that joins two optical fibers by precisely aligning their cores and using an electric arc to melt and fuse them together, creating a continuous glass path with minimal signal loss . Fusion splicing is the most common and permanent method, ideal for high-performance and long-distance applications .

Supporting Tools for Splicing

Before splicing, fibers must be prepared using several essential tools:

- Fiber optic stripper: Removes the protective jacket, buffer, and coating without damaging the glass core .
- Kevlar cutter: Cuts the high-strength Kevlar strands inside the cable cleanly .
- High-precision cleaver: Produces a flat, perpendicular end face on the fiber, which is critical for low-loss splicing .

- Cleaning supplies: Lint-free wipes and isopropyl alcohol ensure the fiber is free from dust and oils .

- Heat shrink oven: Protects the splice by shrinking a sleeve over the fused fiber .

Optional Testing Tools

After splicing, technicians often use:

- Visual Fault Locator (VFL): Checks continuity and basic alignment .

- Optical Time-Domain Reflectometer (OTDR): Measures insertion loss and detects faults along the fiber .

- Optical power meters: Verify signal strength and splice quality . In summary, while a fusion splicer is the core instrument for joining fibers, achieving a high-quality splice requires a combination of preparation, splicing, and testing tools to ensure signal integrity and long-term reliability .

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In addition to the splicer and cleaver, the tech doing the splicing will need a set of cable preparation and fiber stripping tools. Since

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A fusion splicer is a precision tool used to join two optical fibers by fusing them together with an electric arc. This

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