FIELD REFERENCE • VISUAL EDITION

Ribbon Fiber Splicing Tools

A visual catalog of the core tools used to prepare, splice, protect, inspect, and test ribbon-fiber links.













Prepared for field technicians • Tarek Kharroubi

01 Mass Fusion Splicer

PREPARE • SPLICE • PROTECT • VERIFY



Representative 12-fiber mass fusion splicer with ribbon holders and stripper.

ROLE IN THE WORKFLOW

Joins an entire ribbon in one splice cycle. The machine positions the left and right ribbons, checks alignment, applies an electric arc, and estimates splice loss.

HOW IT IS USED

- Select a program that matches fiber type and ribbon count.
- Confirm electrodes, V-grooves, mirrors, and clamps are clean.
- Check the fiber order before closing the wind protector.

CARE / CONTROL POINT

Keep V-grooves and clamp surfaces free of glass fragments. Perform arc calibration whenever conditions or manufacturer guidance require it.

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02 Thermal Ribbon Stripper

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Thermal stripper shown open with the heating and stripping area visible.

ROLE IN THE WORKFLOW

Uses controlled heat and pressure to remove the ribbon matrix and fiber coating as one piece, leaving the bare fibers parallel for cleaning and cleaving.

HOW IT IS USED

- Load the ribbon in the correct holder and set the specified strip length.
- Allow the tool to reach operating temperature.
- Pull smoothly; do not twist or fan out the bare fibers.

CARE / CONTROL POINT

A dirty, worn, or overheated blade can damage glass or leave residue. Follow the tool and fiber manufacturer settings.

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03 Precision Ribbon Cleaver

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High-precision fiber cleaver used after stripping and cleaning.

ROLE IN THE WORKFLOW

Scores and fractures all fibers at a controlled angle and length so the splicer receives clean, square end faces.

HOW IT IS USED

- Place the clean bare ribbon flat in its holder.
- Set the specified cleave length and keep fibers straight.
- Transfer the cleaved ribbon directly to the splicer without touching the ends.

CARE / CONTROL POINT

Empty the fiber-shard bin safely. Rotate or replace the blade according to the manufacturer schedule when cleave quality declines.

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04 Ribbon Fiber Holder

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Example 12-fiber ribbon holder marked FH-70-12.

ROLE IN THE WORKFLOW

Secures the ribbon at a fixed pitch and keeps its fibers flat and parallel through stripping, cleaving, and loading into the splicer.

HOW IT IS USED

- Match the holder to ribbon fiber count, pitch, and coating construction.
- Seat the ribbon fully without crossing or twisting fibers.
- Use the matching left/right holders when the system requires a pair.

CARE / CONTROL POINT

Never force an incompatible ribbon. Clean the channel and clamp pads gently; contamination changes fiber position.

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05 Ribbon Splice Protection Sleeve

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Heat-shrink fusion-splice sleeves with internal strength members.

ROLE IN THE WORKFLOW

Protects the completed fusion joint with heat-shrink tubing and an internal strength member, restoring mechanical support before the splice is placed in the tray.

HOW IT IS USED

- Slide the sleeve onto one ribbon before splicing.
- Center the joint inside the sleeve without bending the bare fiber.
- Run the correct heater cycle, then allow the sleeve to cool before handling.

CARE / CONTROL POINT

Use the sleeve size specified for the ribbon, tray, and heater. Reject kinked, contaminated, or partially shrunk sleeves.

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06

Cable Jacket and Buffer-Tube Stripper

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Adjustable stripping tool for cable jacket or buffer-tube preparation.

ROLE IN THE WORKFLOW

Opens outer jackets or scores buffer tubes so the ribbon stack can be exposed without nicking the fibers beneath.

HOW IT IS USED

- Choose the correct blade groove or depth for the cable.
- Make controlled cuts away from the body and internal ribbons.
- Inspect exposed buffer tubes and ribbons for damage before continuing.

CARE / CONTROL POINT

Cable constructions differ. Confirm the stripping method in the cable instructions and replace dull blades.

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07

Aramid-Fiber (Kevlar) Scissors

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Serrated shears designed for aramid strength members.

ROLE IN THE WORKFLOW

Cuts the aramid yarn used as a cable strength member. Serrated blades grip the tough fibers instead of pushing them away.

HOW IT IS USED

- Separate the strength yarn from optical fibers before cutting.
- Cut only the required length for the closure or hardware.
- Keep fingers and loose fibers clear of the blades.

CARE / CONTROL POINT

Do not use precision fiber strippers or ordinary scissors on aramid yarn. Keep the shears dry and dedicated to cable preparation.

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08 Fiber-Optic Cleaning Kit

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Field cleaning kit with lint-free and connector-cleaning supplies.

ROLE IN THE WORKFLOW

Removes dust, coating residue, gel, and oils that can cause poor cleaves, weak splices, or high connector loss. A field kit may include lint-free wipes, swabs, cleaning fluid, and connector cleaners.

HOW IT IS USED

- Use only fiber-approved materials and solvent.
- Wipe stripped fiber from the coating toward the bare end; never back toward the coating.
- Inspect connector end faces after cleaning and before mating.

CARE / CONTROL POINT

Keep caps closed and consumables clean. Never reuse a dirty wipe or swab. Follow the solvent Safety Data Sheet.

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09

Fiber Inspection Microscope

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Handheld inspection microscope and protective case.

ROLE IN THE WORKFLOW

Magnifies connector end faces so the technician can find dust, scratches, chips, or residue before a connection is made.

HOW IT IS USED

- Inspect, clean, and inspect again before mating.
- Use the correct tip or adapter for the connector.
- For live systems, use an approved video probe and project safety procedure.

CARE / CONTROL POINT

Never look into a fiber with a direct optical microscope unless the fiber is confirmed dark by the approved method. Invisible laser light can injure the eye.

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10 Optical Time-Domain Reflectometer (OTDR)

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Representative handheld OTDR used for event location and troubleshooting.

ROLE IN THE WORKFLOW

Launches optical pulses and analyzes backscatter to estimate fiber length and locate reflective or loss events such as connectors, splices, bends, and breaks.

HOW IT IS USED

- Set wavelength, range, pulse width, and averaging for the link.
- Use launch and receive fibers when the test plan requires them.
- Save traces with clear cable, direction, wavelength, and fiber identifiers.

CARE / CONTROL POINT

An OTDR trace requires interpretation; its event-loss estimate is not the same as an end-to-end insertion-loss test.

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11 Optical Power Meter and Light Source

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Representative handheld optical power meter.

ROLE IN THE WORKFLOW

Measures received optical power. Paired with a stabilized light source at the correct wavelength, it verifies end-to-end insertion loss after splicing.

HOW IT IS USED

- Match wavelength and fiber type to the test plan.
- Reference the source and meter with the required cords before testing.
- Keep test connectors clean and record direction, wavelength, and limit.

CARE / CONTROL POINT

Use the specified reference method and do not mix incompatible connector polish types. Protect the detector port from contamination.

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12 Visual Fault Locator (VFL)

PREPARE • SPLICE • PROTECT • VERIFY



Pen-style visual fault locator coupled to a fiber adapter.

ROLE IN THE WORKFLOW

Injects visible red light into a fiber to support continuity checks and reveal some close-range breaks, open connectors, or severe bends.

HOW IT IS USED

- Clean the connector and use the correct adapter.
- Select continuous or pulsed light as required.
- Trace only fibers covered by the work plan and label both ends.

CARE / CONTROL POINT

A VFL is a laser. Never view its beam directly or through an optical instrument, and never use it on an active link without authorization.

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Image Sources & Use Notes

The photographs show representative tools. They illustrate tool categories and do not require the reader to buy a particular brand or model. Compatibility, setup, maintenance, and acceptance limits must follow the project specification and the applicable manufacturer instructions.

1. **01 — Mass Fusion Splicer.** https://maybo.az/product/fujikura-mass-fusion-splicer-90r-kit-series/
2. **02 — Thermal Ribbon Stripper.** https://simbol.ca/fiber-strippers/347-rs03-thermal-stripper.html
3. **03 — Precision Ribbon Cleaver.** https://4comt.ru/catalog/telekommunikatsionnoe-oborudovanie/
4. **04 — Ribbon Fiber Holder.** https://4comt.ru/catalog/telekommunikatsionnoe-oborudovanie/montazhnoe-oborudovanie/svarochnye-apparaty-dlya-lentochnogo-volokna/
5. **05 — Ribbon Splice Protection Sleeve.** https://ifiberoptix.com/splice-sleeves/
6. **06 — Cable Jacket and Buffer-Tube Stripper.** https://kelavex.com/product/IDEAL-Cable-Stripper-Buffer-Tube-Stripper-FTTH-45162163165-079mm-Fiber-Optic-Cable-Stripping-Tool
7. **07 — Aramid-Fiber (Kevlar) Scissors.** https://fibreplus.co.uk/catalogue?page=2
8. **08 — Fiber-Optic Cleaning Kit.** https://mayflex.com/shop/product/NFC-KIT-CASE-E
9. **09 — Fiber Inspection Microscope.** https://www.alldataresource.com/Corning-200FM-Fiber-Optic-Microscope-200x_p_261630.html
10. **10 — Optical Time-Domain Reflectometer (OTDR).** https://cloudtechasia.in/products/noyafa-otdr-fiber-optic-tester-sm-13101550mm-24db22db-multi-function-tester
11. **11 — Optical Power Meter and Light Source.** https://www.desertcart.in/products/546285248-zhuangyif-network-cable-tester-optical-power-meter-high-precision-optical
12. **12 — Visual Fault Locator (VFL).** https://dutch.szrbtxoptical.com/sale-42474016-5mw-visual-fault-locator-fiber-optic-cable-tester-strong-red-light-beam.html

SAFETY ESSENTIALS

Dispose of fiber shards in a dedicated container. Wear the required eye protection. Treat every fiber as potentially active until verified safe by the approved procedure. Never look into a fiber or optical port. Use approved solvents with adequate ventilation and keep them away from ignition sources.

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