

1. GENERAL

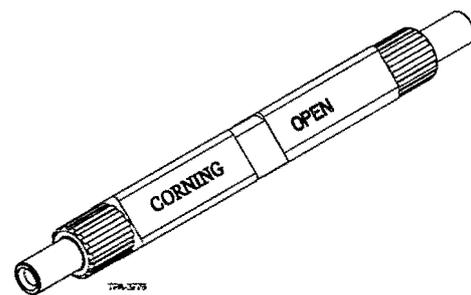
This procedure outlines the use of the CamSplice and TKT-100-01 and TKT-100-02 tool kit for splicing optical fibers (see Table 1). This document describes and illustrates splicing both loose tube and tight-buffered fibers with the CamSplice Mechanical Splicer.

2. TOOLS AND MATERIALS REQUIRED

CamSplice(s)

Table 1: CamSplice Tool Kit Contents

Item	Part Number
Scissors	100294-01
Retractable Black Permanent Marker	2104499-01
Fiber Optic Cleaning Fluid	FCC-CLEANER-FIBER
Fiber Wipes	FCC-WIPES
CamSplice Installation Tool	2104041-01
Cable Jacket Stripping Tool	3206001-01
Dual-hole Stripping Tool	2104502-01
Electrician's Tape	100278-01
Wire Marker Booklet	100297-01
Tweezers	100312-01
FBC-002 Basic Cleaver*	FBC-002
Instruction, CamSplice Assembly Manual	006-038
Instruction, Stripping Tool for Buffers	005-005
Instruction FBC-002 Basic Cleaver*	006-391



* items provided in the TKT-100-01 and -02 CamSplice Tool Kits

In order to optimize a CamSplice for the lowest possible loss, an optical power meter or an optical time domain reflectometer (OTDR) is required.

3. LOADING CAMSPlice INTO TOOL

Step 1: Position the assembly tool with the CORNING logo on your left. Place both levers (Figure 1) of the assembly tool in their vertical position.

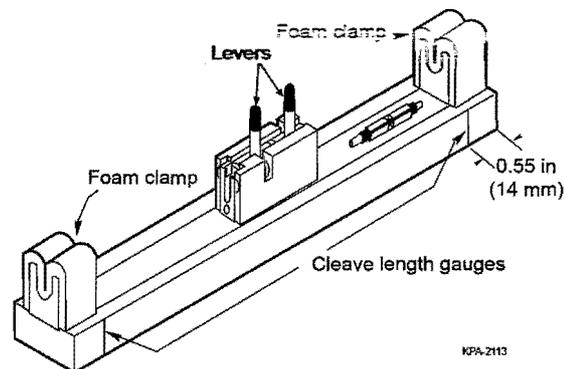


Figure 1 — Place Levers in Vertical Position

Step 2: Slide the CamSplice™ into the right end of the assembly tool (Figure 2) until it butts against the tool's left stop. Approximately 8 mm (1/3 inch) of the splice should protrude from the left end of the tool.

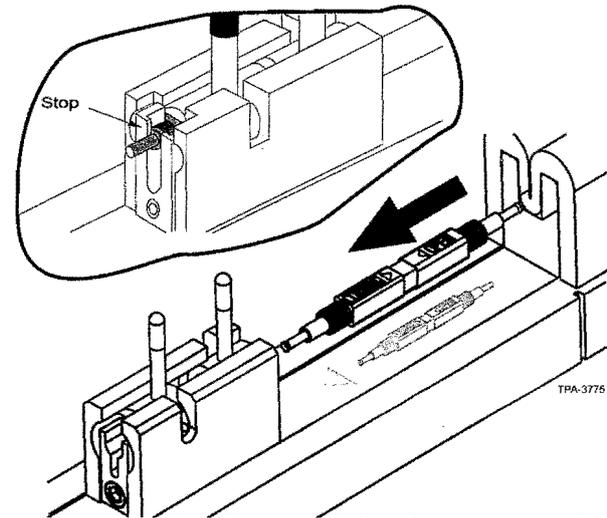


Figure 2 — Slide CamSplice into Tool

4. PREPARING CABLE AND FIBER

 **WARNING:** Never look directly into the end of a fiber that may be carrying laser light. Laser light can be invisible and can damage your eyes. Viewing it directly does not cause pain. The iris of the eye will not close involuntarily as when viewing a bright light. Consequently, serious damage to the retina of the eye is possible. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.

 **CAUTION:** Fiber optic cable is sensitive to excessive pulling, bending, and crushing forces. Consult the cable specification sheet for the cable you are installing. Do not bend the cable more sharply than the minimum recommended bend radius. Do not apply more pulling force to the cable than specified. Do not crush the cable or allow it to kink. Doing so may cause damage that can alter the transmission characteristics of the cable; the cable may have to be replaced.

Cable and fiber preparation is the same for all cable types, except for Step 4, which pertains only to jacketed cable types.

- Step 1:** Remove the cable sheath and prepare the cable for splicing according to its manufacturer's procedures.
- Step 2:** Refer to the documentation provided with the splice tray or hardware in which the CamSplice will be installed for sheath removal lengths.
- Step 3:** After removing the required length of outer jacketing of the tight-buffered pigtail, carefully cut the aramid yarn off with scissors at the end of the jacketing.
- Step 4:** **If using jacketed cables,** remove a minimum of 175 mm (6.9 inch) of jacket on each side of the splice to make room for splicing (Figure 3).

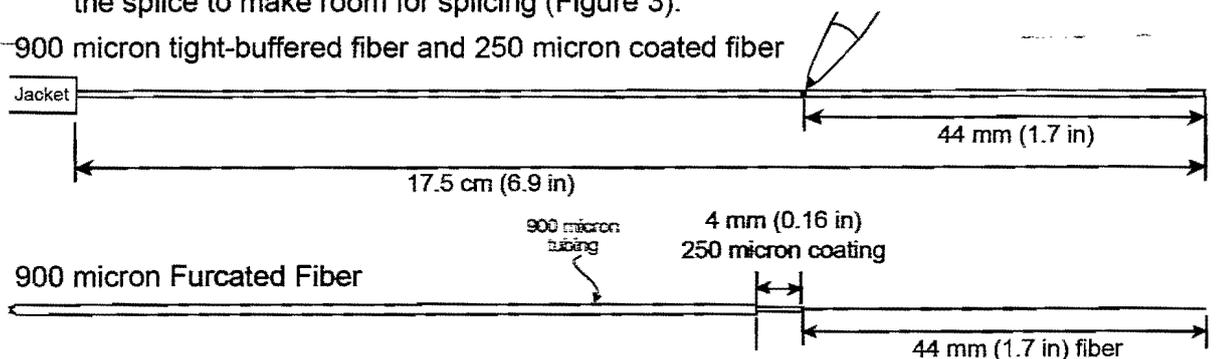


Figure 3 — Remove Jacket, if using Jacketed Cable

Step 5: Using the Strip Length Gauge and permanent marker, measure and place a visual mark at the dimensional markings shown in Figure 3.

Step 6: To expose 125 micron glass fiber, remove the 44 mm section of buffer and coating in two steps using the Dual-Hole Stripping Tool (Figure 5).

- For the 900 micron buffer, use the large hole.
- For the 250 micron coating, use the small hole.

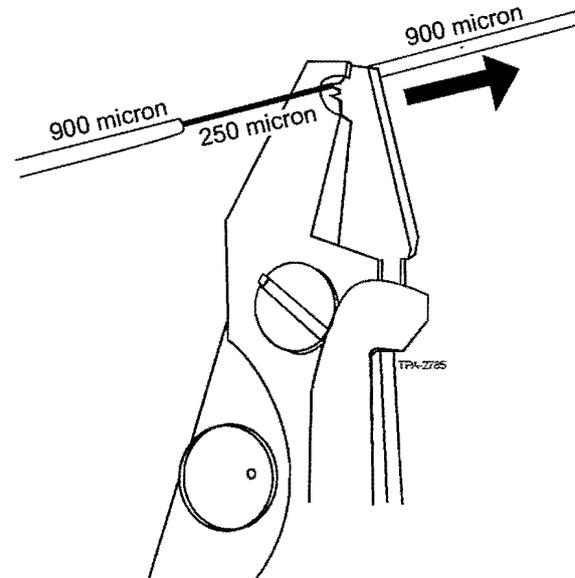
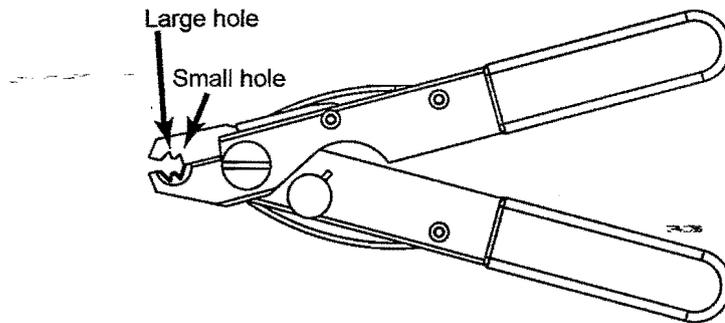


Figure 4 — Expose Bare Fiber



DANGER: Fiber Optic Cleaning Fluid can cause irritation to eyes on contact. Contains hydrofluorocarbon and alcohol blend. Inhalation of high concentrations of vapor is harmful, may cause heart irregularities, unconsciousness, or death. Use with adequate ventilation. In case of eye contact, immediately flush eyes with water for at least 15 minutes. In case of ingestion, consult a physician.

Step 7: Clean the fiber with two passes of a Fiber Wipe dampened with Fiber Optic Cleaning Fluid. Do not touch the fiber after cleaning it.

Step 8: Proceed to Section 5, Cleaving Fiber.

5. CLEAVING FIBER

This section describes the operation of the FBC-002 Fiber Cleaver (supplied in TKT-100-02) The cleaver is suitable for single-fiber applications with 900 micron tight-buffered, 900 micron furcated, and 250 micron coated fiber. It is assumed that the fiber has been stripped and cleaned according to the appropriate fiber stripping procedure prior to cleaving.

Step 1: Press down on the handle to open the cleaver's fiber clamp (Figure 2).

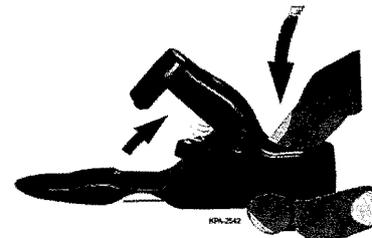


Figure 5

Step 2: With your other hand (Figure 3), place the fiber in the fiber guide so that the end of the fiber is under the fiber clamp and the end of the fiber coating butts against the positive stop.

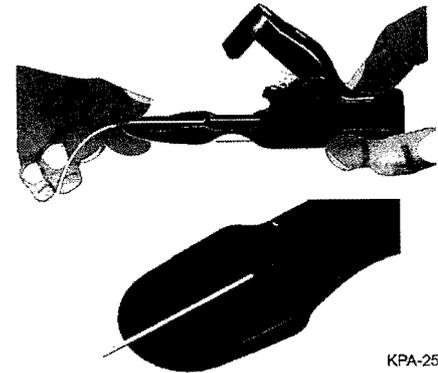
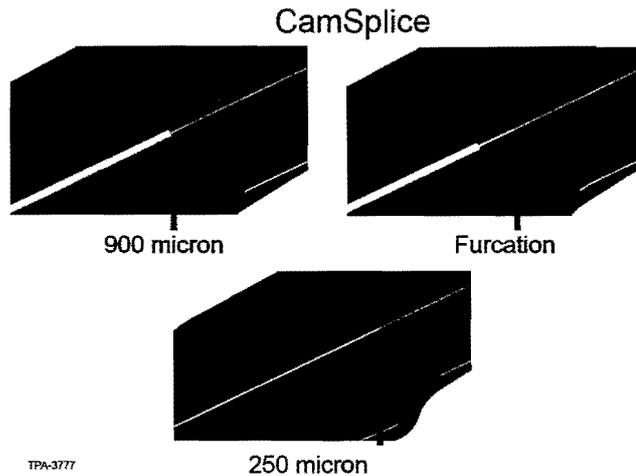


Figure 6 — Align Fiber in Guide

Step 3: Gently release the handle to lower the clamp onto the bare fiber.

Step 4: Maintain tension in the fiber and press the cleaver arm down all the way (Figure 4). This will apply enough pressure to properly score the fiber.

Step 5: Release the cleaver arm.

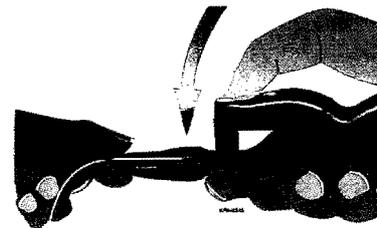
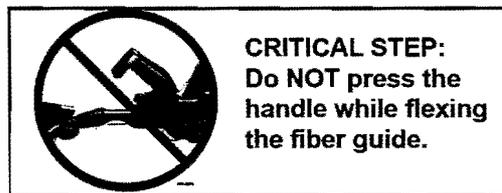


Figure 4

Step 6: Flex the fiber guide to snap the fiber (Figure 5). The fiber is now ready for installation.



Figure 5



Step 7: Press down on the cleaver's handle to once again lift the fiber clamp (Figure 6).

Step 8: Remove the end piece of fiber with tweezers and place the fiber on a loop of tape for proper disposal.



Figure 6

NOTE: Once the fiber is cleaved, do not clean the fiber or allow it to contact anything. If the cleaved fiber does contact something, repeat fiber preparation and re-cleave. Do not use the cleaved fiber as it is unacceptable.

6. ASSEMBLING CAMSPlice™ WITH TOOL

Step 1: Holding the cleaved fiber by its coating, push the first fiber down into the clamps (Figure 10). Slide the fiber into the CamSplice splicer until it stops. To ease the fiber's entry into the CamSplice, the fiber can be slightly twisted or "rolled" during insertion. *There should be no bend in the first fiber at this point.*

NOTE: If you feel any resistance while inserting the first fiber, pull back on the fiber very slightly, and then continue to insert it into the CamSplice.

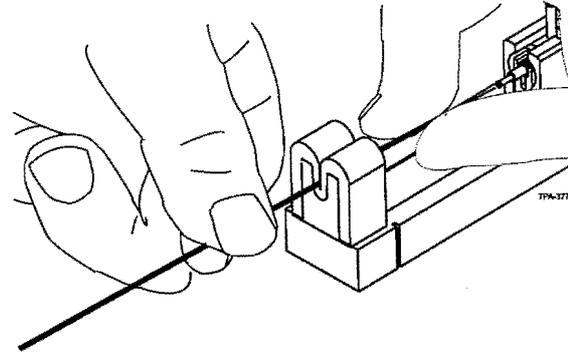


Figure 10 — Push Fiber into Clamps

Step 2: For the second fiber, again follow the directions in Section 4, Preparing Cable and Fiber.

Step 3: Push the second fiber into the clamps (Figure 11). Slide it into the CamSplice unit until it butts against the first fiber (you may twist the second fiber as you did with the first to ease its entry into the CamSplice). Continue pushing the second fiber until it stops (the coating should bottom out). This step should put a 3/4 to 1-inch bend in the first fiber but NO bend in the second fiber.

Step 4: Push the first fiber against the second until there are equal bends in the fibers with approximately 10 - 13 mm (3/8 to 1/2 inch) deflection.

Step 5: Slowly rotate both levers down to actuate the CamSplice (Figure 12).

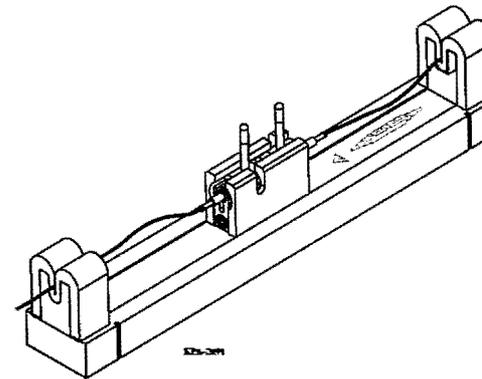


Figure 11 — Push Fibers Together

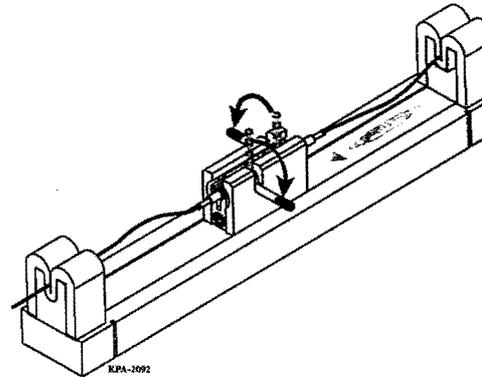


Figure 12 — Actuate Levers

Optional

At this point it is possible to test for loss using an OTDR or power meter. If an unacceptable loss is indicated, the splice can be optimized by remating the fibers.

- a. Optimize the splice by first rotating both levers back to their vertical position (Figure 11) to open the splice.
- b. Rotate the left lever to 45-degrees (Figure 13) to close that side of the splice and hold the fiber. This action provides a positive stop to mate the right fiber against.
- c. Pull back on the right fiber and then remate it against the left fiber. Once inward pressure is felt, rotate the right lever to 45 degrees (Figure 14) and recheck the loss.
- d. Steps a - c can be performed up to 2 times to optimize the splice. If after 2 attempts, the loss is still unacceptable, remove the fibers and re-prepare the fibers as per Section 4, Preparing Cable and Fiber.
- e. If the loss is acceptable, rotate both cams to 90 degrees as shown in Figure 12 and continue with the procedure to finish the installation.

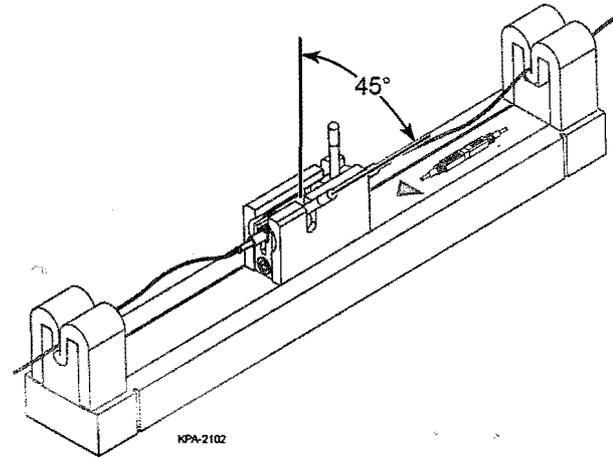


Figure 13 — Rotate First Lever

7. COMPLETING CAMSPlice™ ASSEMBLY

7.1. Remove Completed CamSplice from Tool

- Step 1:** Gently release the fibers from both clamps.
- Step 2:** Working from the right side of the assembly tool, carefully lift the CamSplice out of the tool (Figure 16).
- Step 3:** Secure the CamSplice in its splice tray or hardware.
- Step 4:** Follow the instructions provided with the splice tray or hardware to ensure that the splice and its fibers are properly strain-relieved.

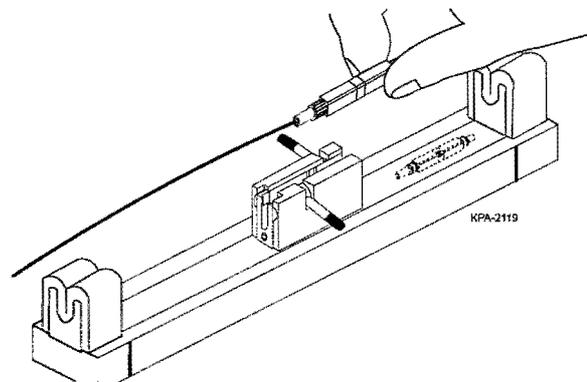


Figure 14 — Lift CamSplice out of Tool

8. ASSEMBLY WITHOUT AN ASSEMBLY TOOL

8.1. Assemble CamSplice

- Step 1:** Remove the dust caps from the CamSplice.
- Step 2:** Strip, clean, and cleave the first fiber to 0.55 inches ($\pm .02$ in) [14 mm ± 0.5 mm]. Verify the strip length with the steel rule provided in the tool kit before proceeding.

NOTE: When splicing 250 micron loose-tube cable to 900 micron tight-buffered cable, the 250 micron fiber should be placed in the CamSplice first.

Step 3: Slide the fiber into the CamSplice™ until the fiber coating bottoms. To center the splice point, retract the fiber approximately 1/16 inch (2 mm). To ease the fiber's entry into the CamSplice, the fiber should be slightly twisted or "rolled" during insertion.

NOTE: If you feel any resistance while inserting the fiber, pull back on the fiber very slightly, and then continue to insert it into the CamSplice.

Step 4: While gripping the other cam and the clear center section of the CamSplice, rotate the first cam clockwise 45° to lock the first fiber into place. Rotation of the cam secures the fiber to provide a positive stop for the second fiber.

Step 5: Strip, clean, and cleave the second fiber to 0.55 inches ($\pm .02$ in) [14 mm \pm 0.5 mm]. Verify the strip length with the steel rule provided in the tool kit before proceeding.

Step 6: Using the first fiber as a positive stop, push the second fiber into the CamSplice until it bumps the first fiber with a positive stop. Twist the second fiber as you did with the first to ease its entry into the CamSplice. The second fiber's coating should not bottom out against the CamSplice during this step.

Step 7: Actuate the CamSplice by rotating the cams against each other in a clock wise direction (clockwise looking at each end of the CamSplice). After rotation:

- The beveled edges of the cams should be aligned with that of the center section.
- The arrows line up as shown.

NOTE: Do not over-rotate the cams.

Step 8: If your OTDR or power meter indicates a loss less than 0.5 dB, or an acceptable loss according to your company's remake policy, skip to Step 2 in Section 5.3, Cleaning. If the splice loss is NOT acceptable, proceed to Section 5.2, Tuning.

8.2. Tuning

Optimize the splice as follows:

- a. "Tune" the splice by first rotating both cams counterclockwise back to their open position.
- b. Grip the second fiber's cam and the CamSplice center section and rotate the first fiber's cam 45° to lock the fiber in place. This provides a positive stop to butt the second fiber against while tuning.
- c. Pull back on the second fiber, slightly rotate it, and then re-butt it against the first fiber. Check for loss improvement and repeat this step until you have achieved maximum performance.
- d. After optimizing the splice, rotate both cams clockwise to their locked position to actuate the CamSplice. Check the splice loss again. Proceed to Step 2 in Section 5.3, Cleaning if the splice loss is now acceptable.

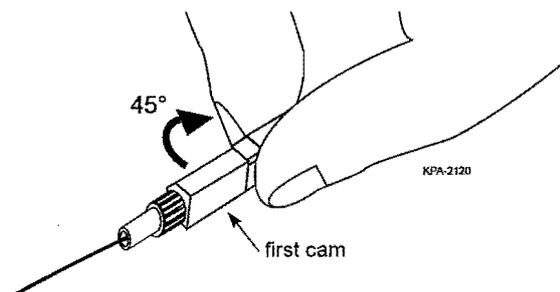


Figure 15 — Rotate Cam Clockwise

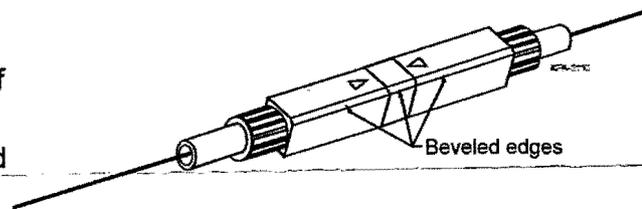


Figure 16 — Align Beveled Edges

9. MAINTENANCE

- Thoroughly clean cleaver after each use. Small remnants left in the cleaver may cause damage to parts during later use.
- Periodically clean the cleaver's blade, fiber guide, and fiber clamp with an alcohol-soaked wipe, followed by a cleaning with compressed air. **ALWAYS WEAR EYE PROTECTION WHEN CLEANING WITH COMPRESSED AIR.**

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