

# CORNING

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## CamSplice Assembly Instructions

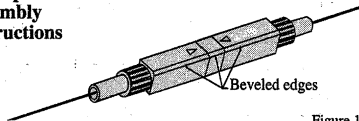


Figure 1

### 1. General

**1.1** This procedure outlines the use of the CamSplice and TKT-100 Tool Kits for splicing single or multi-mode optical fibers. This document describes and illustrates splicing both loose tube and tight-buffered fibers with the CamSplice. *For full precautions, tool kit list, and fiber preparation instructions, refer to SRP-006-038, CamSplice Assembly Manual.*

**1.2** The CamSplice is a mechanical splice which accepts either 250 and 900  $\mu\text{m}$  fibers. No adhesives, special tools, or power-operated equipment are required for splicing operations.

**1.3** Each CamSplice is shipped ready for splicing in an "open position" with its cams 180° apart. To secure the fibers, the cams are rotated into their closed position. When completed, the beveled surfaces of the CamSplice's center section and its two cams are aligned with each other, providing visual conformation that the splice is secured (Figure 1).

**1.4** In order to optimize a CamSplice for the lowest possible loss, an Optical Power Meter and/or Optical Time Domain Reflectometer (OTDR) is required.

**IMPORTANT :** *Read and understand this procedure completely before starting a CamSplice assembly.*

**NOTE:** For best results, keep the CamSplices clean. Do not remove from packaging until ready for use. Do not rotate the cams until the fibers are inserted.

### 2. Cable and Fiber Preparation

**2.1** Remove the cable sheath and prepare the cable for splicing according to the manufacturer's procedures.

**2.2** Refer to the documentation provided with the splice tray or hardware in which the CamSplice will be installed for sheath removal lengths.

## Loose Tube Fiber Preparation

**NOTE:** The TKT-100 tool kits provide a plier-type buffer tube cutter suitable for use on both loose tube and tight-buffered fibers. For complete instructions on this tool's use, consult SRP-005-005, *Stripping Tool For Buffers*. This document is included in the TKT-100 tool kits, and is available from Corning Cable Systems.

After removing the fiber buffer, proceed to step 2.3 for loose tube fibers or step 2.6 for tight buffered fibers.

**2.3** Wipe the filling compound from the fibers with a tissue soaked in filling compound remover.

**2.4** Use the fiber stripping tool to remove the fiber coating in a smooth, straight pull to the length specified for the cleaver you are using (Figure 2).

**2.5** Gently wipe the fiber with an alcohol-soaked tissue or wipe to remove any residue. Proceed to section 3.

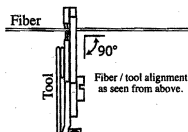


Figure 2

## Tight-Buffered Fiber Preparation

**2.6** After removing the required length of outer jacketing of the tight-buffered pigtail, use scissors to carefully trim off the aramid yarn at the end of the jacketing.

**2.7** Remove the fiber coating from the tight-buffered fiber with the dual-hole Miller tool fiber stripper (part number 2104502-01) per the instructions in SRP 005-057 provided with the tool.

## 3. Assembling the CamSplice

**NOTE:** The CamSplice can be assembled without use of an assembly tool. The assembly tool simply ensures that the fiber endfaces are touching prior to activating the splices. This procedure describes assembly of the CamSplice both with and without the tool.

### CamSplice Assembly With Tool (Steps 3.1-3.14)

**3.1** Position the tool with the label on your left. Place both levers of the assembly tool in their vertical position (Figure 3).

**3.2** Remove the dust caps from the ends of CamSplice.

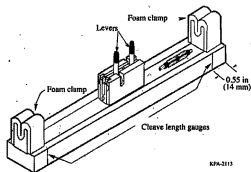


Figure 3

**3.4** Strip, clean, and cleave the first fiber to 0.55 inches ( $\pm 0.02$  in) [14 mm  $\pm 0.5$  mm]. Verify this length with the tool's gauge.

**NOTE:** When splicing 250 $\mu$ m loose tube cable to 900 $\mu$ m tight-buffered cable, the 250 $\mu$ m fiber should be placed in the CamSplice first.

**3.5** Holding the fiber by its coating, push the first fiber down into the foam clamps (Figure 4). Slide the fiber into the CamSplice until it stops (to ease the fiber's entry into the CamSplice, slightly twist or "roll" the fiber during insertion). There should be no bending in the fiber at this point.

**3.3** Slide the Cam-Splice into the right end of the assembly tool (as shown on the label) until it butts against the tool's left stop. Approximately  $1/8$ -inch (3 mm) of the splice should protrude from the left end of the tool.

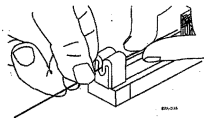


Figure 4

**3.6** Strip, clean, and cleave the second fiber to 0.55 inches ( $\pm 0.02$  in) [14 mm  $\pm 0.5$  mm].

**3.7** Push the second fiber into the foam clamps. Slide it into the CamSplice 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.

**3.8** Push the first fiber against the second until there are equal bends in the fibers of approximately  $3/8$  to  $1/2$  inch (10-13 mm) (Figure 5).

**3.9** Slowly rotate both levers down to actuate the CamSplice.

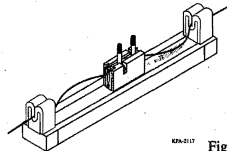


Figure 5

**3.10** If you have an indicated loss less than 0.5 dB, or an acceptable loss according to your company's remake policy, skip to step 3.13. If the loss is NOT acceptable, proceed to step 3.11.

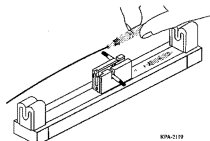
**3.11** Optimize an unacceptable splice as follows:

- a) Open the splice by rotating both levers to their vertical position.
- b) Rotate the left lever 45° to tighten its fiber.
- c) Pull back the right fiber, slightly rotate it, and rebutt it against the left fiber. Check loss and repeat until the splice is optimized.
- d) After optimizing the splice, rotate both levers fully down to actuate the splice. Check the splice loss again. *Proceed to step 3.13 if the splice loss is now acceptable.*

**3.12** If step 3.11 did not result in an acceptable loss, open the splice by rotating both levers back to vertical. Remove both fibers from the CamSplice. To clean the CamSplice, strip, clean, and cleave a piece of scrap fiber approximately 3 inches (80 mm) long. Slide the fiber, cleaved end first, into the CamSplice and pull it out through the other end of the splice. Return to step 3.3 and remake the splice.

**NOTE:** *If you still have unacceptable loss after steps 3.11-3.12 and remaking the splice, carefully inspect your cleaver and its operation.*

**3.13** To remove a completed CamSplice from the assembly tool:



- a) Gently release the fibers from both foam clamps.
- b) Working from the right side of the assembly tool, carefully lift the CamSplice out of the tool (Figure 6).

Figure 6

**3.14** Secure the CamSplice in its splice tray or hardware.

### CamSplice Assembly Without Assembly Tool (Steps 3.15-3.25)

**3.15** Remove the dust caps from the CamSplice.

**3.16** Strip, clean, and cleave the first fiber to 0.55 inches ( $\pm 0.02$  in) [ $14 \text{ mm} \pm 0.5 \text{ mm}$ ].

**NOTE:** *When splicing 250 $\mu\text{m}$  loose tube cable to 900 $\mu\text{m}$  tight-buffered cable, the 250 $\mu\text{m}$  fiber should be placed in the CamSplice first.*

**3.17** Slide the fiber into the CamSplice until the fiber coating bottoms. To center the splice point, retract the fiber approximately  $\frac{1}{16}$  inch (2 mm). To ease the fiber's entry into the CamSplice, the fiber should be slightly twisted or "rolled" during insertion.

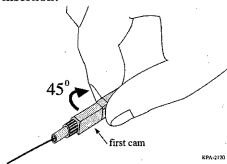


Figure 7

**3.18** While gripping the other cam and the center section of the CamSplice, rotate the first cam  $45^\circ$  clockwise to lock the first fiber into place. Rotation of the cam secures the fiber to provide a positive stop for the second fiber (Figure 7).

**3.19** Strip, clean, and cleave the second fiber to 0.55 inches ( $\pm 0.02$  in) [14 mm  $\pm 0.5$  mm].

**3.20** Using the first fiber as a positive stop, push the second fiber into the CamSplice until it bumps the first fiber. 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.*

**3.21** Actuate the CamSplice by rotating the cams against each other in a clock wise direction. After rotation, the beveled edges of the cams should be aligned with that of the center section as shown in Figure 1. *Do not over rotate the cams.*

**3.22** If you have an indicated loss of less than 0.5 dB, or and acceptable loss according to your company's remake policy, proceed to step 3.25. If the splice loss is NOT acceptable, proceed to step 3.23.

**3.23** Optimize the splice as follows:

- a) "Tune" the splice by first rotating both cams counter-clockwise back to their open position.
- b) Grip the second fiber's cam and the CamSplice center section and rotate the first fiber's cam  $45^\circ$  to lock the fiber in place.
- c) To tune the second fiber against the first, pull it back from the first fiber, slightly rotate it, and then rebutt it. Repeat until you have achieved maximum performance. Fully rotate both cams clockwise to actuate the CamSplice. Check the splice loss again. *Proceed to step 3.25 if the splice loss is now acceptable.*

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**3.24** If step 3.23 did not result in an acceptable loss, clean the splice as described in step 3.12.

**NOTE:** *If you still have unacceptable loss after steps 3.23-3.24 and remaking the splice, carefully inspect your cleaver and its operation.*

**3.25** Secure the CamSplice in its splice tray or hardware.

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