1. INTRODUCTION

This sheet covers the application of CORELINK Fiber Optic Mechanical Splice 503577–1 Singlemode and 503901–1 Multimode (12–Splice Pack), which provide a low–loss splice between any combination of 250–µm coated fiber and 900–µm buffered fiber.

NOTE

Use of CORELINK Splice Workstation 503605–1 (408–4131) is recommended to enhance the reliability and ease of producing low–loss splices.

NOTE

Measurements are in millimeters [with inch equivalents in brackets]. Figures and illustrations are for identification only and are not drawn to scale.

Reasons for reissue of this document are provided in Section 3, REVISION SUMMARY.

2. ASSEMBLY PROCEDURE

NOTE

To ensure a reliable low–loss splice, use a cleaver that consistently provides a high–quality cleaved fiber end. Fiber ends that have not been squarely and smoothly cleaved may contain loss–producing surface conditions, such as spurs, chips, and jagged edges.

DANGER

ALWAYS wear eye protection when working with optical fibers. NEVER look into the end of terminated or unterminated fibers. Laser radiation is invisible but can damage eye tissue. NEVER eat, drink, or smoke when working with fibers. This could lead to ingestion of glass particles.

2.1. Tools and Materials

The following tools and materials are necessary for preparation, assembly, inspection, and maintenance of the assembly. Follow the operating instructions (408–series) packaged with the tools and safety guidelines packaged with the materials.

A. Required

— Fiber Optic Combination Strip Tool 1278947–1 (408–4577) or 1754708–1

— Alcohol Fiber Wipe Packet 501857–2 or lint–free tissues and isopropyl alcohol greater than 91% (99% preferred)

— Fiber Optic Cleaver Tool 1871696–1 (408–10086)

B. Optional

— Visual Fault Locator 1828352–1

— Bare Fiber Adapter 934–125 (available from RIFOCS)

— 200× Microscope Kit 1754767–1

— 2.5mm Universal Adapter 1754766–1 (included with microscope)

2.2. Stripping the Cable

1. Using the fiber optic combination strip tool, strip the fiber to 31 to 33 mm [1.22 to 1.30 in.].

2. Clean the stripped portion of the fiber with an alcohol fiber wipe or lint–free tissue moistened with isopropyl alcohol greater than 91% (99% preferred) to remove the fiber coating residue. DO NOT touch the stripped portion of the fiber after cleaning.

2.3. Installation

1. Open the package and remove the CORELINK splice.

CAUTION

To prevent contamination, do NOT remove the CORELINK splice until ready for use.

2. Remove the spreader keys from the key card supplied with the CORELINK splice. Holding the splice as shown in Figure 1, insert the keys into the key entry ports (the holes closest to the edge of the splice). The key handle tabs should be parallel to the flat side and pointing away from the splice. Insert the keys all the way to their shoulders.

3. Turn both key handle tabs 90° downward. The splice is now open.

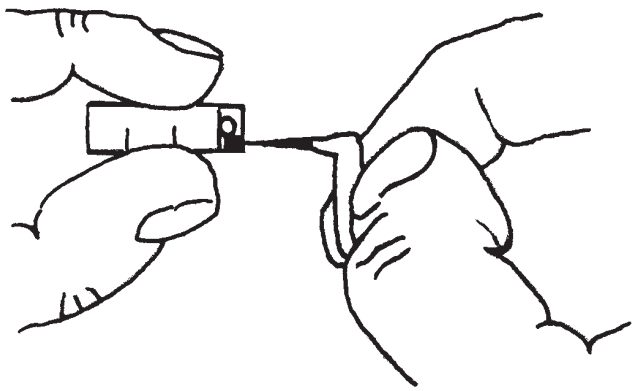


Figure 1

2.4. Cleaving the Fiber

CAUTION

Fibers must be terminated as soon as the cleaving and inspection process is complete; otherwise, damage to the fibers could result.

1. Open the fiber clamp of the fiber optic cleaver. Press the button, and slide the carriage back (toward the fiber clamp). Then move the fiber slide back until it stops.

2. Place the stripped fiber into the slot so that the end of the buffer is at the 10–mm marking for 250–µm or 18–mm marking for 900–µm. See Figure 2, Detail A.

3. While applying pressure on the buffer, carefully slide the fiber slide forward (toward the carriage) until it stops. See Figure 2, Detail B.

4. Gently close the fiber clamp, and slide the carriage forward. DO NOT touch the button while sliding the carriage. See Figure 2, Detail C.

5. Open the fiber clamp, and move the fiber slide back until it stops.

6. Remove the cleaved fiber, and properly dispose of the scrap fiber. If the fiber does not cleave, repeat the process starting with Step 3 of Paragraph 2.2.

CAUTION

Be careful to dispose of fiber ends properly. The fibers create slivers that can easily puncture skin and cause irritation.

CAUTION

Fibers must have a quality cleave before terminating to the jacks. To ensure that the cleave tool is producing quality cleaves, it is STRONGLY RECOMMENDED to inspect at least one fiber cleave per day according to the following:

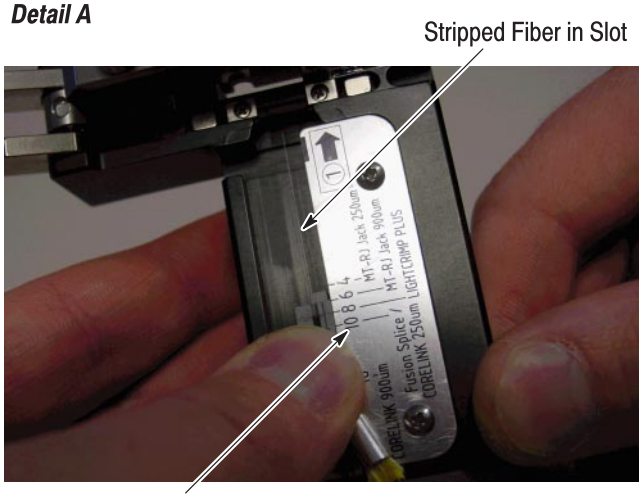
1. Fit the bare fiber adapter onto the universal adapter; then assemble the universal adapter onto the microscope.

2. Using the microscope, inspect the fiber for a quality cleave. Refer to the instructions packaged with the microscope kit) for operating procedures and safety precautions concerning the microscope.

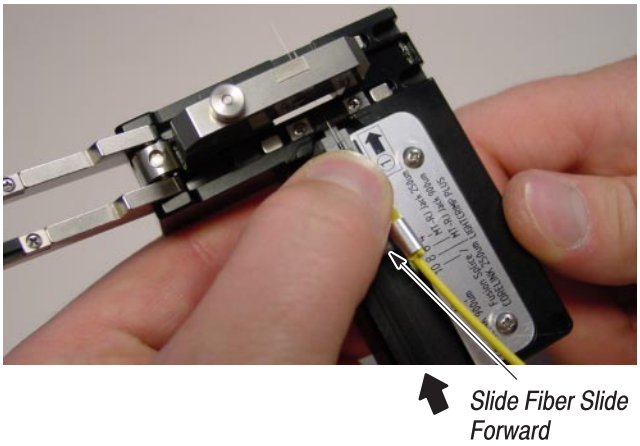
CAUTION

DO NOT attempt to clean the fiber after it has been cleaved.

Detail A



Detail B



Detail C

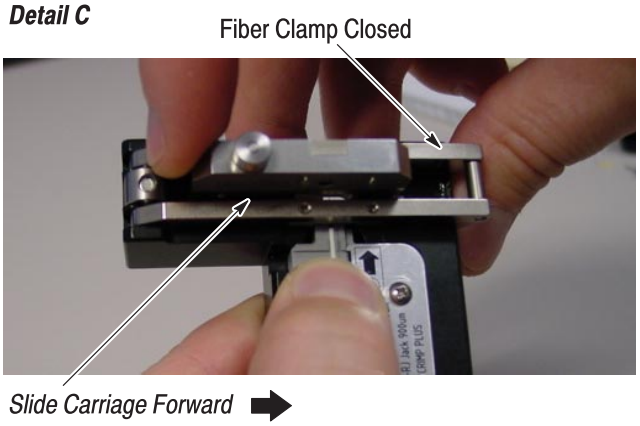


Figure 2

7. Align each fiber with the entry port nearest the center of each end face. Insert the fiber slowly, making sure it travels smoothly through the channel into the center element. A 250–µm fiber's coating will stop at the edge of the aluminum

element, whereas a 900–μm fiber's buffer will stop at the end of the wide part of the channel. Slide the fibers left or right and visually check that both gaps between the buffer and the aluminum element are equal. See Figure 3.

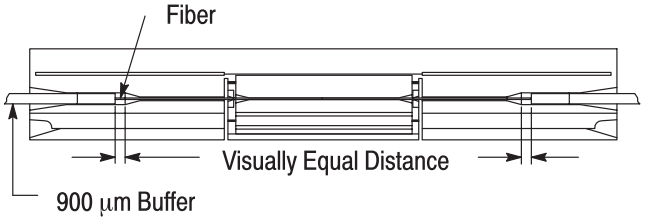


Figure 3

NOTE

If the fiber sticks to or slides out of the channel during insertion, pull it back slightly and continue to insert it until the fiber coating or buffer contacts the appropriate stop.

8. While applying gentle, inward pressure with the thumb and forefinger, gently rotate the key handle, turning it 90° as shown in Figure 4 (do NOT snap it closed). This locks the first fiber in place. Inspect the fiber to make sure it remained in the channel during locking.

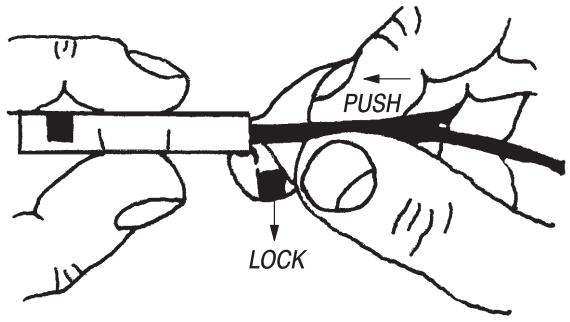


Figure 4

9. Be sure to maintain gentle, inward pressure on the second fiber while turning the key to ensure that the fibers butt against each other. Gently rotate the key when locking the second fiber to prevent the fiber tips from bouncing apart. Inspect the fiber to make sure it remained in the channel during locking. This completes the splice.

10. To tune the splice, unlock one of the fibers and pull it back slightly, rotate it 90° to tune it, then push it forward and re–lock it. Tuning is usually not necessary.

NOTE

The spreader keys can be conveniently stored by taping them in or near the splice tray. Otherwise, they can be slipped into the holder and stored in a wallet or tool box.

CAUTION

The interior material of the CORELINK splice contains index matching gel. If the interior material comes in contact with skin or with eyes, it may cause irritation. If contact occurs, wipe off the material and flush the area with water immediately. Consideration must be given to safety requirements of this gel. Refer to the Material Safety Data Sheet, which is available by contacting Nye Lubricants Inc.

3. REVISION SUMMARY

Since the previous release of this document, the following changes have been made.

- Updated document to corporate requirements
- Added new text in Section 2, ASSEMBLY PROCEDURE
- Added new Figure 2 and renumbered