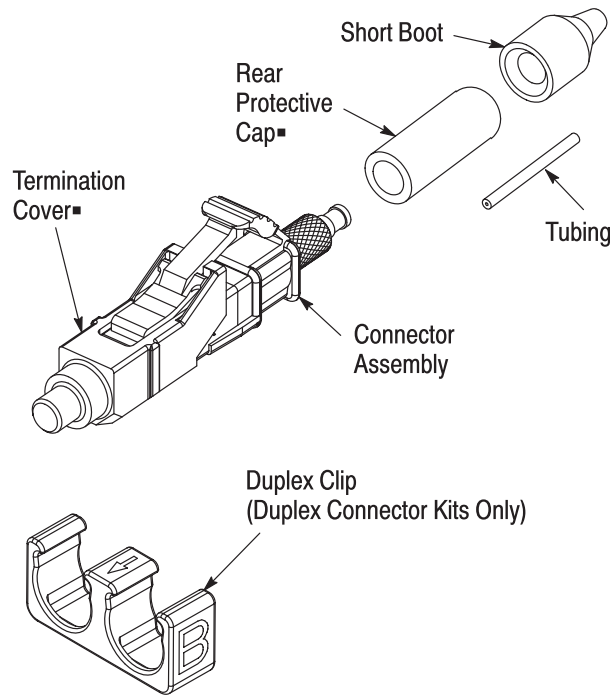


# STOP!

## Don't Connect Unless You Inspect!



- Connector kit is shipped with these installed onto connector assembly. Keep them in place until ready for assembly.

Figure 1

### 1. INTRODUCTION

LightCrimp Plus LC simplex and duplex fiber optic connector kits are designed to be applied to fiber optic cable. The connectors are used with singlemode or multimode 125- $\mu\text{m}$  glass fiber cable. These kits can be used with any of the following media (paragraph of assembly procedure is indicated next to media).

#### 5.1. 900- $\mu\text{m}$ Easy Strip or Tight Buffered Fiber

#### 5.2. 250- $\mu\text{m}$ Coated Fiber

Read these instructions thoroughly before assembling the connector kit.

#### NOTE



All numerical values in this instruction sheet are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Figures are not drawn to scale.

Reasons for reissue of this instruction sheet are provided in Section 8, REVISION SUMMARY.

### 2. DESCRIPTION (See Figure 1)

The simplex connector kit consists of a connector assembly, short boot, and tubing. The tubing is used with 250- $\mu\text{m}$  coated fiber. Also included, assembled onto the connector, are a termination cover for the ferrule (front of connector) and a protective cap for the plunger (rear of connector). The duplex connector kit consists of two of each of these components and a duplex clip. The duplex clip is also available separately.

### 3. SAFETY PRECAUTIONS

#### DANGER



To avoid personal injury, 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.

#### DANGER



BE VERY CAREFUL to dispose of fiber ends properly. The fibers create slivers that can easily puncture the skin and cause irritation.

#### CAUTION



DO NOT use defective or damaged components. Replace them with new components.

### 4. REQUIRED TOOLS AND MATERIALS

- Micro-Strip Stripper 492109-2
- Combination Strip Tool 1278947-1
- Cable Holder Assembly 1754138-1 or 2064540-1 (only used to terminate connector with termination cover installed)

#### NOTE



Revision B (marked on handle) or later of Cable Holder Assembly 1754138-1 is required when terminating LC SECURE connectors.

— Fiber Optic Cleaver 1871696-1 (Instruction Sheet 408-10086)

— LightCrimp Plus LC Die Set with Crimping Tool 1754137-1 (consists of Die Set 1754136-1 and PRO-CRIMPER\* III Hand Tool 2064431-1)

or  
LightCrimp Plus LC, SC, and Splice Die Set with Crimping Tool 2064603-1 (consists of Die Set 1985766-1 and LightCrimp Termination Handle 2064431-1)

— 200× Microscope Kit 1754767-1

— 1.25-mm Universal Microscope Adapter 1754765-1

— reagent-grade isopropyl alcohol and lint-free cloths (not included)

— Alcohol Fiber Wipe Packet 501857-1

#### NOTE



*LightCrimp Plus LC Termination Kit 1754845-2 contains preparation tools required to apply these connectors.*

## 5. ASSEMBLY PROCEDURE

### 5.1. 900-μm Easy Strip or Tight Buffered Fiber

#### A. Preparing 900-μm Buffered Fiber (Figure 2)

1. Discard the tubing.
2. Slide the short boot (small diameter end first) over the buffer. See Figure 2, Detail A.
3. Remove the rear protective cap from the connector assembly, and discard.
4. Push the connector assembly into the holder of the cable holder assembly with the termination cover facing outward, making sure that the connector butts against the lip on the arm of the cable holder assembly. See Figure 2, Detail B.
5. Slide the buffer into the channel marked "BUFFER". Make sure that the tip of the buffer butts against the end of the channel. Mark the fiber at each cross-slot of the channel. See Figure 2, Detail B. Then, remove the fiber from the cable holder assembly.

#### CAUTION



*Before using the strip tool, make sure that the "V" opening is clean; otherwise, the fiber could break. Only use reagent-grade isopropyl alcohol on the strip tool.*

*For easy strip buffered fiber, using the strip tool, notch the fiber at the first mark. Then, grasp the cut end of the fiber and, using a gentle pulling*

*motion, remove the buffer. If using the stripper, notch the fiber at the first mark, then pull the buffer off with the stripper. Strip the coating to the end of the buffer with a single pass of the tool. If the coating slides out relative to the buffer, carefully push it back to the original position (flush with the buffer). See Figure 2, Detail C.*

*For tight buffered fiber, using the strip tool or stripper, strip the fiber to the first mark. It is recommended stripping the fiber in three sections. See Figure 2, Detail C.*

6. Clean the fiber with isopropyl alcohol and a lint-free cloth to remove the fiber coating residue.

#### B. Cleaving (Figure 3)

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 8-mm marking. See Figure 3, Detail A.
3. While applying pressure on the buffer, carefully slide the fiber slide forward (toward the carriage) until it stops. See Figure 3, Detail B.
4. Gently close the fiber clamp, and slide the carriage forward. DO NOT touch the button while sliding the carriage. See Figure 3, 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.

#### CAUTION



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

#### C. Crimping (Figures 4 and 5)

1. Open the cable clamp of the cable holder assembly, and position the fiber (with the cleaved end facing the connector) inside the clamp. Move the buffer so that the end of the fiber is even with the front of the arm of the cable holder assembly, and holding the buffer in place, close the clamp. See Figure 4, Detail A.
2. Carefully insert the fiber into the plunger of the connector assembly until the fiber bottoms against the internal fiber. Make sure that the remaining mark on the buffer enters the plunger. The resultant bend in the fiber should hold the fiber against the internal fiber. See Figure 4, Detail B.

**NOTE**

*It is important that the fiber bottoms against, and remains against, the internal fiber. If the remaining mark does not enter the plunger or if the fiber does not seem to bottom against the internal fiber, gently pull back and re-insert the fiber into the plunger until it bottoms. However, if the remaining mark will not enter the plunger, the fiber must be re-stripped.*

3. Squeeze the handles of the hand tool until the ratchet releases. Allow the handles to open fully. Slowly close the handles until you hear 3 clicks from the ratchet.

4. With the connector assembly in the cable holder assembly, position the termination cover in the upper cavity of the front die and the plunger in the upper cavity of the rear die. See Figure 4, Detail C.

**CAUTION**

*The arrows marked on the front die indicate the direction that the termination cover must be pointing when the connector is positioned in that cavity. For proper placement, and to avoid damage to the fiber, observe the direction of the arrows. Refer to Figure 4, Detail C and Figure 5, Detail A.*

5. Gently push the buffer toward the connector assembly to make sure that the fiber is still bottomed, then slowly squeeze the tool handles together with both hands until the ratchet releases. Allow the handles to open fully, and remove the connector from the dies.

6. Position the plunger of the connector assembly in the cavity of the front die with the knurl against the edge of the groove in the die and the termination cover pointing in the direction of the arrow. See Figure 5, Detail A.

7. Slowly squeeze the tool handles together until the ratchet releases. Allow the handles to open fully, and remove the connector assembly from the die.

8. Open the cable clamp of the cable holder assembly, and remove the fiber from the clamp. Slide the short boot over the plunger until it butts against the connector assembly. See Figure 5, Detail B.

9. Remove the connector assembly from the cable holder assembly.

10. For the duplex connector kit, refer to Figure 5, Detail C, and install the duplex clip as follows:

- a. Center the channel “A” connector between the duplex clip opening marked “A” with the recess in the connector aligned with the rib of the duplex clip. Make sure that the termination cover (of the connector) is pointing in the direction of the arrow on the duplex clip.

- b. Using a biasing force, push the connector into the opening until there is an audible “click.” DO NOT force the connector onto the duplex clip.

- c. Center the channel “B” connector between the duplex clip opening marked “B” with the recess in the connector aligned with the rib of the duplex clip. Make sure that the termination cover (of the connector) is pointing in the direction of the arrow on the duplex clip.

- d. Repeat Step b.

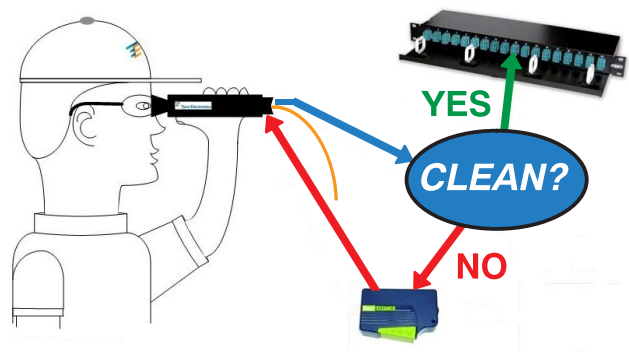
**NOTE**

*To remove the connectors from the duplex clip, refer to Section 6.*

**The assembly procedure for 900-µm easy strip or tight buffered fiber is now complete.**

- If connecting connectors, remove the termination cover, and inspect the ferrule end face for cleanliness using microscope kit and 1.25 mm universal adapter.

**STOP!**  
**Don't Connect Unless You Inspect!**

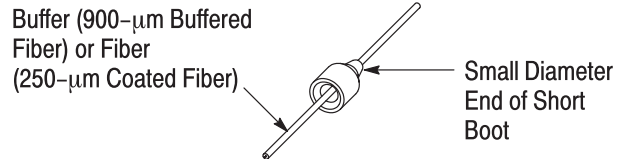


**DANGER: Never View Active Fiber Signals**

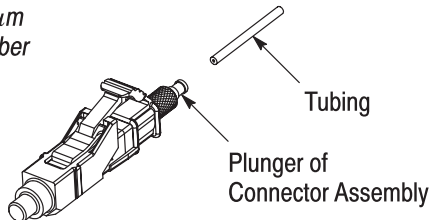
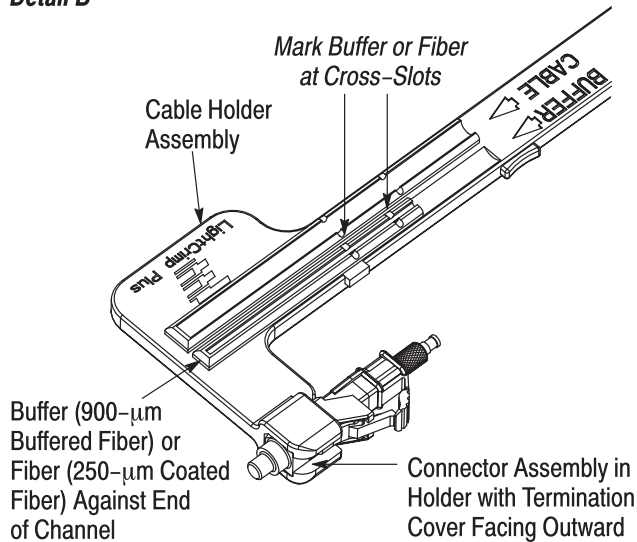
**Available Aids:**

- Professional Fiber Optic Connector Inspection Kit 2064651-[ ] (Instruction Sheet 408-10263)
- Fiber Optic Cleaning and Inspection Guide 2064710-1 (on compact disc)

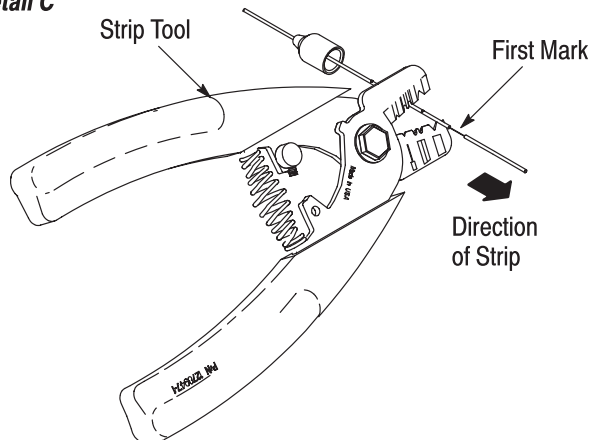
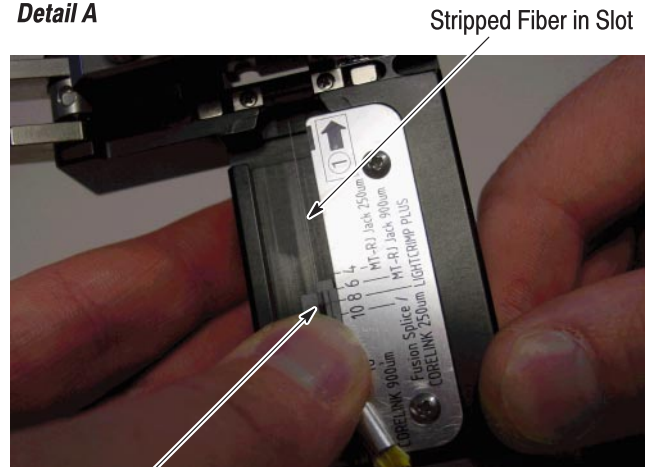
More information can be found at [www.ampneconnect.com/foguide](http://www.ampneconnect.com/foguide)

**Figure 2: Preparing the Fiber****Detail A**

For 250- $\mu$ m Coated Fiber

**Detail B****NOTE**

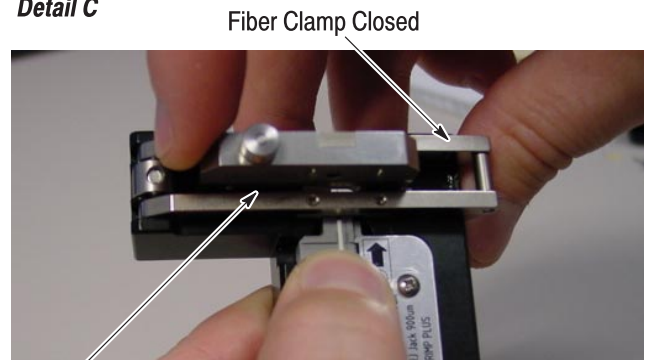
For 250- $\mu$ m coated fiber, DO NOT allow the tubing to fall out of the connector assembly.

**Detail C****Figure 3: Cleaving****Detail A**

End of Buffer or 250- $\mu$ m Coating at 8-mm Marking

**Detail B**

Slide Fiber Slide Forward

**Detail C**

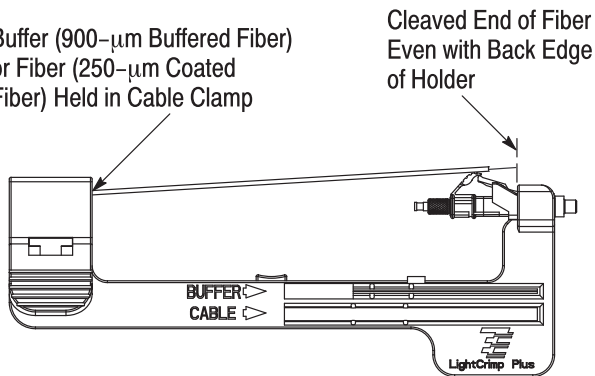
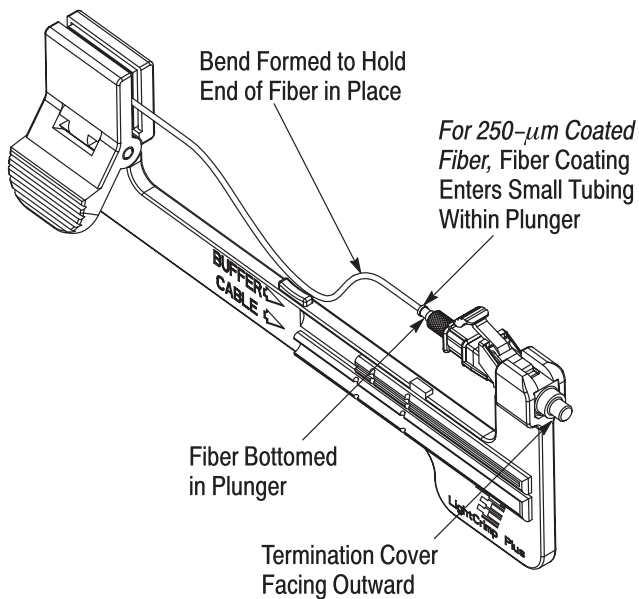
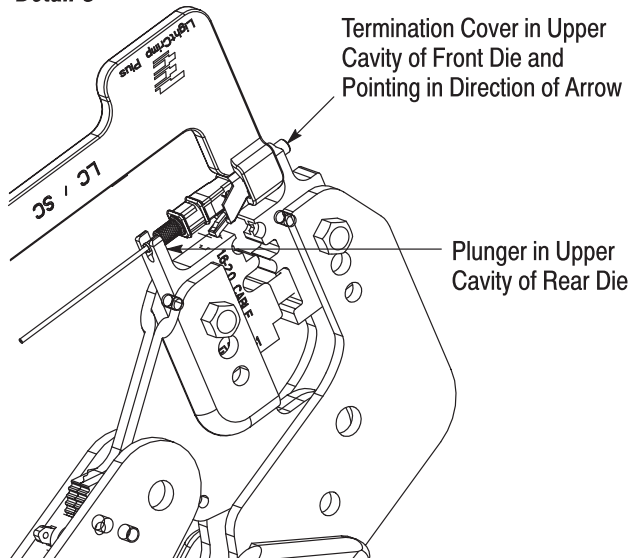
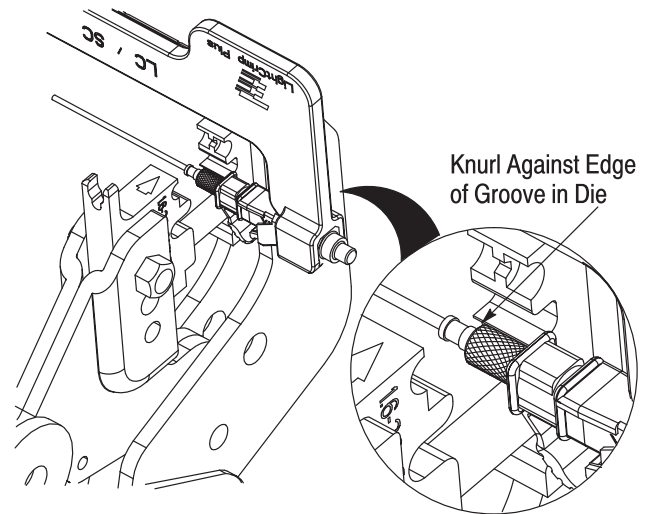
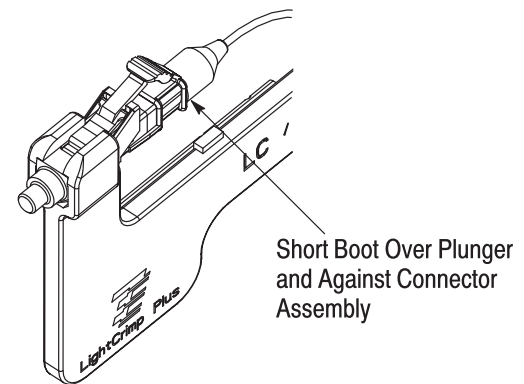
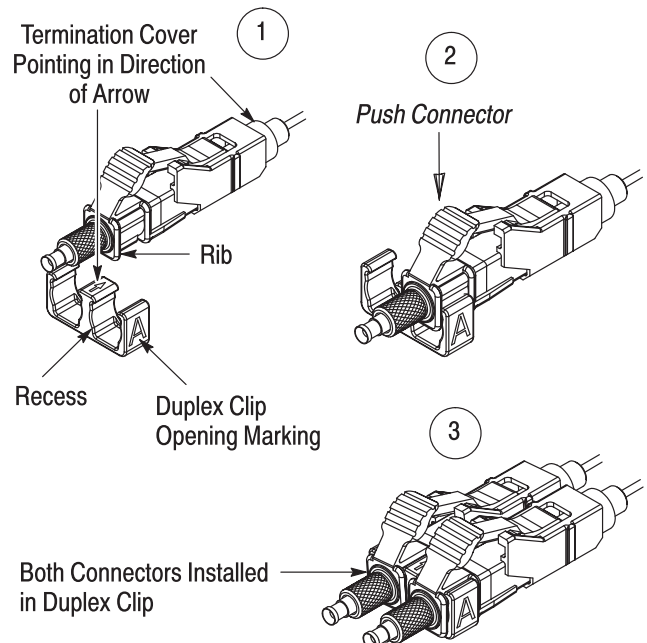
Slide Carriage Forward



**Figure 4: Crimping****Detail A**

Buffer (900- $\mu$ m Buffered Fiber) or Fiber (250- $\mu$ m Coated Fiber) Held in Cable Clamp

Cleaved End of Fiber Even with Back Edge of Holder

**Detail B****Detail C****Figure 5: Crimping****Detail A****Detail B****Detail C — For Duplex Connector Kit**

## 5.2. 250- $\mu$ m Coated Fiber

### A. Preparing 250- $\mu$ m Coated Fiber (Figure 2)

1. Slide the short boot (small diameter end first) over the fiber. See Figure 2, Detail A.
2. Remove the rear protective cap from the connector assembly, and discard.
3. Insert the tubing into the plunger of the connector assembly until the tubing bottoms. See Figure 2, Detail A.
4. Push the connector assembly into the holder of the cable holder assembly with the termination cover facing outward, making sure that the connector butts against the lip on the arm of the cable holder assembly. See Figure 2, Detail B.
5. Slide the fiber into the channel marked "BUFFER". Make sure that the tip of the fiber butts against the end of the channel. Make sure that the tubing does not fall out of the connector assembly. Mark the fiber at each cross-slot of the channel. See Figure 2, Detail B. Then, remove the fiber from the cable holder assembly.

**CAUTION**

*Before using the strip tool, make sure that the "V" opening is clean; otherwise, the fiber could break. Only use reagent-grade isopropyl alcohol on the strip tool.*

6. Using the strip tool or stripper, strip the fiber to the first mark using a single pass. See Figure 2, Detail C.
7. Clean the fiber with isopropyl alcohol and a lint-free cloth to remove any coating residue.

### B. Cleaving (Figure 3)

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 coating is at the 8-mm marking. See Figure 3, Detail A.
3. While applying pressure on the fiber, carefully slide the fiber slide forward (toward the carriage) until it stops. See Figure 3, Detail B.
4. Gently close the fiber clamp, and slide the carriage forward. DO NOT touch the button while sliding the carriage. See Figure 3, 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.

**CAUTION**


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

### C. Crimping (Figures 4 and 5)

1. Open the cable clamp of the cable holder assembly, and position the fiber (with the cleaved end facing the connector) inside the clamp. Move the fiber so that the end of the stripped fiber is even with the front of the arm of the cable holder assembly, and holding the fiber in place, close the clamp. See Figure 4, Detail A.
2. Carefully insert the fiber into the plunger of the connector assembly until the fiber bottoms against the internal fiber. The fiber coating must enter the small tubing that was installed in Step 3 of Paragraph 5.1.A. Make sure that the start of the fiber coating is not caught on the entry of the small tubing, and that the remaining mark on the fiber enters the plunger. The resultant bend in the fiber should hold the fiber against the internal fiber. See Figure 4, Detail B.

**NOTE**

*It is important that the fiber bottoms against, and remains against, the internal fiber. If the remaining mark does not enter the tube within the plunger or if the fiber does not seem to bottom against the internal fiber, gently pull back and re-insert the fiber into the plunger until it bottoms. However, if the remaining mark will not enter the plunger, the fiber must be re-stripped.*

3. Squeeze the handles of the hand tool until the ratchet releases. Allow the handles to open fully. Slowly close the handles until you hear 3 clicks from the ratchet.
  4. With the connector assembly in the cable holder assembly, position the termination cover in the upper cavity of the front die and the plunger in the upper cavity of the rear die. See Figure 4, Detail C.
- CAUTION**
- 
- The arrows marked on the front die indicate the direction that the termination cover must be pointing when the connector is positioned in that cavity. For proper placement, and to avoid damage to the fiber, observe the direction of the arrows. Refer to Figure 4, Detail C and Figure 5, Detail A.*
5. Gently push the fiber toward the connector assembly to make sure that the fiber is still bottomed, then slowly squeeze the tool handles together with both hands until the ratchet releases. Allow the handles to open fully, and remove the connector from the dies.

6. Position the plunger of the connector assembly in the cavity of the front die with the knurl against the edge of the groove in the die and the termination cover pointing in the direction of the arrow. See Figure 5, Detail A.

7. Slowly squeeze the tool handles together until the ratchet releases. Allow the handles to open fully, and remove the connector assembly from the die.

8. Open the cable clamp of the cable holder assembly, and remove the fiber from the clamp. Slide the short boot over the plunger until it butts against the connector assembly. See Figure 5, Detail B.

9. Remove the connector assembly from the cable holder assembly.

10. For the duplex connector kit, refer to Figure 5, Detail C, and install the duplex clip as follows:

a. Center the channel "A" connector between the duplex clip opening marked "A" with the recess in the connector aligned with the rib of the duplex clip. Make sure that the termination cover (of the connector) is pointing in the direction of the arrow on the duplex clip.

b. Using a biasing force, push the connector into the opening until there is an audible "click." DO NOT force the connector onto the duplex clip.

c. Center the channel "B" connector between the duplex clip opening marked "B" with the recess in the connector aligned with the rib of the duplex clip. Make sure that the termination cover (of the connector) is pointing in the direction of the arrow on the duplex clip.

d. Repeat Step b.

#### NOTE



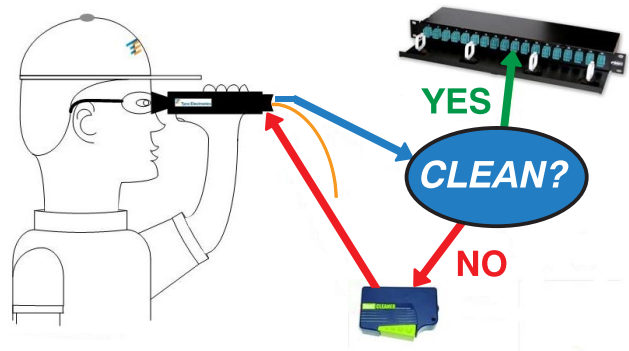
To remove the connectors from the duplex clip, refer to Section 6.

The assembly procedure for 250-µm coated fiber is now complete.

► If connecting connectors, remove the termination cover, and inspect the ferrule end face for cleanliness using microscope kit and 1.25 mm universal adapter.

# STOP!

Don't Connect Unless You Inspect!



**DANGER: Never View Active Fiber Signals**

#### Available Aids:

- Professional Fiber Optic Connector Inspection Kit 2064651-[ ] (Instruction Sheet 408-10263)
- Fiber Optic Cleaning and Inspection Guide 2064710-1 (on compact disc)

More information can be found at [www.ampneconnect.com/foguide](http://www.ampneconnect.com/foguide)

## 6. REMOVING CONNECTORS FROM DUPLEX CLIP

Following this procedure should prevent damage to the duplex clip and allow reuse of the duplex clip.

1. Using one hand, hold the assembly by either the connector that will not be removed or the duplex clip.
2. With the other hand, grasp the connector to be removed and, using a rotation motion, *gently* remove the connector from the opening. Refer to Figure 6.

### Removing Connectors from Duplex Clip

Gently Rotate Connector

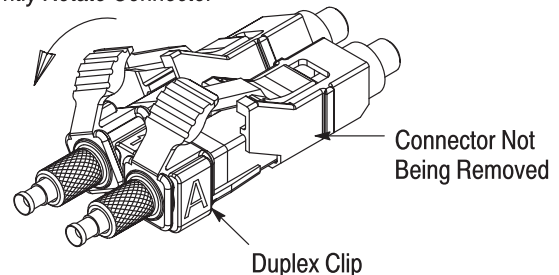


Figure 6

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## 7. REVISION SUMMARY

Revisions to this instruction sheet include:

- Updated document to corporate requirements
- Added Stop! banner to page 1
- Removed connector kit part numbers and duplex clip part number
- Added multimode cable and changed description for use of tubing
- Modified Figures 1, 2 (Details A and B), 3, 4, 5, and 6
- Added Detail C to Figure 2
- Changed ferrule dust cap to termination cover
- Changed combination strip tool, cleave tool, die set, hand tool frame assembly, microscope, microscope adapter, and LC termination kit; added cable holder assembly; and removed combination termination kit
- Modified Step 2 of Paragraph 5.1, A and Steps 2 and 6 of 5.2, A
- Removed CAUTION from Paragraphs 5.1, B and 5.2, B
- Changed 1 click to 3 clicks in Step 3 of Paragraph 5.1, C and 5.2, C
- Changed “receptacle” to “holder” in Step 4 of Paragraphs 5.1, A and 5.2, A
- Deleted Paragraph 5.1, A.6
- Deleted “stripper” in 5.1,A.5 CAUTION
- Added new text to second paragraph 5.1,A.5
- Added text to Paragraph 5.1,A.6
- Modified Paragraph 5.1, B, 5.2, B; and 5.2, C.1 and 2
- Added inspection pointer to Paragraphs 5.1 and 5.2
- Removed “smallest” from Step 6 of Paragraph 5.1, C
- Added “with both hands” to Paragraph 5.1, C.5
- Changed “fiber” to “buffer” in Paragraph 5.1,C
- Removed previous Section 7
- Added Cleaning Flow Matrix to page 8
- Added reference to inspection kit and cleaning and inspection guide
- Moved end STOP artwork and available aids to Paragraphs 5.1, C.10.d and 5.2, C.10.d
- Moved Figures 2, 3, 4, and 5 to middle of document